ABSTRACT

GRAFF, Dawn. The Effects of a Wellness Education Program and Wellness Locus of Control Upon Wellness Behaviors of Middle School Students. M.S. in School Health Education, 1981. 103 p. (Dr. Kenneth Becker).

This study examined change in wellness behavior among middle school students following a wellness education program. The Children's Wellness Behavior Inventory (CWBI) was designed to measure this change. Effects of wellness locus of control upon wellness behavior change were also examined. The Children's Wellness Locus of Control Inventory (CWLC) was developed to determine wellness locus of control orientation. Subjects were 80 5th and 6th graders attending Onalaska Middle School, Onalaska, Wisconsin. This study called for a pretest to posttest experimental design and invloved three groups. The experimental group (N = 23) participated in a six-week wellness education program between pre and posttests. The nonrelevant treatment group (N = 26) participated in a six-week first aid program between pre and posttests. The control group (N = 31) received no treatment between pre and posttests. The Mann-Whitney U-Test was used to determine significance of wellness behavior change. Though significant ($p \leq .05$) results were obtained in two of three group comparisons, it was concluded that the wellness education program did not influence wellness behavior change in this study. Spearman's rho tested for an association between wellness locus of control orientation and wellness behavior change. A significant association ($p \leq .05$) was observed in the nonrelevant treatment group, where externals were more likely to exhibit increase in CWBI change scores. A significant association was not established for the other two groups.

THE EFFECTS OF A WELLNESS EDUCATION PROGRAM AND WELLNESS LOCUS OF CONTROL UPON WELLNESS BEHAVIORS OF MIDDLE SCHOOL STUDENTS

A Thesis Presented

to

The Graduate Faculty

University of Wisconsin - LaCrosse

In Partial Fulfillment

of the Requirements for the

Master of Science Degree

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by

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August, 1981

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We recommend acceptance of this thesis in partial fulfillment of this candidate's requirements for the degree:

Master of Science

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DEDICATION

I dedicate this thesis to my students:

to their dreams, happiness and growth.

ACKNOWLEDGEMENTS

I would like to thank my thesis committee members: Dr. Mary Gander for helping me to realize my potential; and Dr. Peg Dosch for challenging me in my pursuit of this degree. A special acknowledgement and thank you is extended to Dr. Kenneth Becker for the influence he has had upon my professional growth. I would also like to thank Barb Beier and Chuck Cychosz for their guidance and friendship; Dr. Gary Gilmore for always having the answers to my most difficult questions; and Joe Worra for his remarkable patience.

To the administration, faculty and students at Onalaska Middle School I extend my thanks for their participation in the study.

To everyone who has touched my life in the past two years -- my friends, my teachers, and my students -- thank you for helping me to grow.

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CHAPTER I

Introduction

In the preamble to the Constitution of the World Health Organization, health is defined as:

> A state of complete physical, mental and social well-being, and not merely the absence of disease and infirmity (p. 1).

It is apparent, in view of the high incidence of chronic disease suffered by the people in the United States that this goal of achieving health is not being met.

Much has been done in terms of the treatment of disease in the United States. Shealy (1977) points out that infectious diseases have largely been brought under control and that we now have excellent systems of sanitation and immunization. However, according to Shealy (1977), little is being done to practice preventive medicine or to maintain health.

Mortality statistics indicate that the top ten causes of death in the United States in 1975 were diseases of the heart, malignant neoplasms, cerebrovascular disease, accidents, diabetes, cirrhosis of the liver, arteriosclerosis and suicide. A factor implicated in each of these causes of death is lifestyle. In evaluating lifestyle, Ardell (1977) identified five dimensions of wellness designed to promote the highest level of health and well-being. According to Ardell (1977), these five dimensions when applied to lifestyle result in high level wellness. They are made up of self-responsibility, nutritional awareness, stress management, physical fitness, and environmental sensitivity.

The concept of wellness was first introduced by Dr. Halbert L. Dunn in 1959. This concept was built around the World Health Organization definition of health. Dunn explains it this way:

> The concept of high level wellness -- in the individual, the family, the community -- embodies the preventive aspects of many of the things which we are now fighting in terms of disease and disability and social breakdown. Patching up is no longer sufficient. This is why high level wellness is important to you and to me, and to the larger group of which we are a part (p. 7).

It is not enough to just present knowledge or to make facilities available and expect people to reap their benefits. Zemke (1979) tells of a corporate fitness program that had failed. Part of this failure was attributed to the misconception that merely providing facilities would bring about a barrage of participants eager to make behavior changes. Without motivation to take part in a wellness activity, participation will be at a minimum. "Exercise and positive health habits are learned. And, as with other habit development, that learning requires time, incentive and practice." (Zemke, 1979 pp. 32-34).

A motivational factor that has been seen to influence health behavior is an individual's locus of control. Julian Rotter (1966) developed the idea that people's behaviors reflect their beliefs in terms of the perceived control they have over their lives. Rotter (1966) designed a scale to measure whether people perceived themselves to be internally or externally controlled. People perceiving themselves to be externally controlled have a tendency to explain life events as the result of external forces. They often look on life occurences as a matter of fate or chance, or due to the influence of another. Internally controlled people explain life events as a result of their own behavior. The degree

to which people perceive events as being internally or externally controlled affects many aspects of their lives (Kleinke, 1978).

Statement of the Problem

The problem of the study was twofold. First, the study was to determine the individual health promotive effects of a wellness education program upon student wellness behaviors. Secondly, the problem was to examine locus of control internality and externality as factors that influence changes in wellness behaviors.

Need for the Study

After Dunn first introduced wellness, little was done to promote the concept until 1977 when literature on wellness began to reappear. Recent programs being developed for the promotion of wellness are evidence of a growth in interest in the topic. In light of the present health status of Americans in general, a need exists to determine the impact of wellness education upon the acquisition of behaviors for the pursuit of optimum health.

Two recent studies (Williamson, 1978; and, Beier, 1979) looked at the effectiveness of an educational program on the wellness attitudes and behaviors of specific subjects. Among recommendations following these studies were: a call for similar studies involving additional populations, and the development of wellness education programs for different groups. Many adolescent Americans are generally unhealthy as described by Wynne (1978). An aim of the present study is to determine if a wellness education program can in any way have a positive influence upon this trend of declining adolescent health.

Factors motivating the acquisition of wellness behaviors are of great interest to health educators. A factor considered to influence health behaviors of late is the locus of control of an individual. Strickland (1973) and Wallston and Wallston (1978) found the relationship between physical health or well-being of an individual and the belief in internal control to be significant. Other studies, Seeley (1976) and Wallston, Wallston, Kaplan and Maides (1976) found no significant difference between specific health behavior changes and perceived locus of control. Further studies are needed to clarify whether the locus of control of an individual can influence the acquisition of health behaviors.

Although there are scales designed to measure children's locus of control, Rotter (1975) emphasized the need to develop specific scales for specific behaviors. Parcel developed a scale to measure children's health locus of control (Parcel and Meyer, 1978). Later this tool was used to determine the interrelationship between health locus of control and health values (Parcel, Nader, and Rogers, 1980). In retrospect it was suggested that the study would have been stronger if an objective measurement of a health behavior rather than a measurement to perceived health status had been used. It was also suggested that similar locus of control scales be developed to measure other components of the social learning theory. Another recommendation was for the development of objective and reliable measurements of children's health behavior and the value of reinforcement of health behavior.

Purpose of the study

The purpose of this study was to determine the effectiveness of a specially designed educational program upon wellness behaviors of students

attending Onalaska Middle School. It further intended to examine locus of control as an influence upon changes in wellness behaviors. To accomplish this, inventories were needed that measured these characteristics. As a result, the purpose of this study also included the development of an instrument to measure wellness locus of control. In addition, an inventory to assess children's wellness behaviors was revised from an existing inventory designed for high school subjects.

Delimitation

The study involved the following delimitation:

1. The population for the study was selected from 5th and 6th grade students attending Onalaska Middle School in Onalaska, Wisconsin.

Limitations

The study had the following limitations:

1. The sample size for each group varied and was restricted based on the number of students in each class used (N = 23 for experimental group; N = 26 for non-relevant group; N = 31 for control group).
2. The possibility of interaction between experimental and control group subjects could not be controlled.
3. Post - posttest scores could not be obtained due to end of school year for subjects.

Hypotheses

To demonstrate the effectiveness of the wellness education program the following null hypotheses were developed:

1. There will be no significant difference in pretest and posttest change scores on the Children's Wellness Behavior Inventory between the experimental and the control group.
2. There will be no significant difference in pretest and posttest change scores on the Children's Wellness Behavior Inventory between the experimental and the nonrelevant treatment group.
3. There will be no significant difference in pretest and posttest change scores on the Children's Wellness Behavior Inventory between the nonrelevant treatment and the control group.

The following null hypotheses were developed to show any association of change in wellness behavior between internal and external subjects:

4. There will be no significant association between the pretest and posttest change scores of internal and external subjects on the Children's Wellness Behavior Inventory in the experimental group.
5. There will be no significant association between the pretest and posttest change scores of internal and external subjects on the Children's Wellness Behavior Inventory in the nonrelevant treatment group.
6. There will be no significant association between the pretest and posttest change scores of internal and external subjects on the Children's Wellness Behavior Inventory in the control group.

Additional statistical tests were used to examine the following:

7. Association between original loci of control between all groups involved in the study.

8. Comparison of wellness locus of control change between groups.

Definition of Terms

The following terms have been defined to clarify their use in the study:

1. Children's Wellness Behavior Inventory (CWBI): The instrument used to measure the degree to which the individual practices wellness behaviors developed by Beier (1979) and modified for use of middle school students.
2. Children's Wellness Locus of Control Inventory (CWLC): The instrument designed by the researcher used to measure the degree to which the individual perceives control over wellness behaviors.
3. Control group subjects: Fifth and sixth grade students attending Onalaska Middle School that received no treatment.
4. Experimental group subjects: Fifth and sixth grade students attending Onalaska Middle School that took part in a wellness education program.
5. External locus of control: The perception that outcomes are determined by factors outside the control of an individual.
6. First Aid education program: A series of lessons on first aid procedures.
7. Internal locus of control: The perception that the individual has some control over what happens to him or her.
8. Locus of control: The extent to which people perceive relationships between their actions and their outcomes.
9. Nonrelevant treatment group subjects: Fifth and sixth grade students attending Onalaska Middle School that took part in a first aid education program.

10. Wellness: The process of learning about, developing attitudes and identifying alternatives to act toward achieving an optimum level of physical, emotional, social, mental and intellectual well-being.

11. Wellness behavior: The manner in which a person conducts oneself in ways to change lifestyle in order to function at perceived maximum capacity and satisfaction.

12. Wellness education program: A series of lessons covering the five dimensions of wellness: (1) self-responsibility, (2) nutritional awareness, (3) stress management, (4) physical fitness and, (5) environmental sensitivity.

CHAPTER II

Review of Related Literature

Both the concept of wellness and the social learning theory, of which locus of control is a part, are relatively new ideas. The concept of wellness was first introduced by Halbert L. Dunn during a series of talks in 1957. The locus of control construct, which was derived from Rotter's social learning theory, was discussed in his book Social Learning and Clinical Psychology in 1954.

In 1961 the scripts of Dunn's 29 talks were compiled into a small book entitled, High Level Wellness. The concept of wellness remained dormant for nearly twenty years, but it did not die. In 1977, Donald Ardell brought it back into focus in his book High Level Wellness: An Alternative to Doctors, Drugs and Disease. It appears that this publication served as an impetus for the growing interest that has followed.

The locus of control construct was perpetuated through the development of scales by two of Rotter's students (James, 1957; Phares, 1955). It was James (1957) who named the construct "internal-external locus of control". The wide range of generalizability of the construct was credited by Robinson and Shaver (1973) for the further development of inventories and the influx of literature that has followed and continues to grow.

This review focuses on literature that deals with the development and application of both the concept of wellness and the locus of control construct. It also looks at studies where the social learning theory has been applied to health behavior. The review of literature is presented as follows:

1. The Concept of Wellness.
2. Influencing Wellness Behavior in an Educational Setting.
3. The Locus of Control Construct.
4. Health Promotion, Health Behavior and Locus of Control.

The Concept of Wellness

In the first chapter of High Level Wellness by Dunn, the term wellness was born and given meaning.

> High level wellness for the individual is defined as an integrated method of functioning which is oriented toward maximizing the potential of which the individual maintains a continuum of balance and purposeful direction within the environment where he is functioning (p. 4-5).

Bruhn, Cordova, Williams, and Fuentes, (1977) view wellness as a continually evolving, changing process that is related to man's developmental stages. Bruhn, et. al. (1977) differentiate wellness from good health by saying that wellness is a measureable process in which people actively participate to become healthier.

Ardell (1979) sees high level wellness as a lifestyle approach to realizing one's best potentials for well-being. Ardell (1977) describes five dimensions that constitute the framework for a wellness lifestyle: Self-responsibility, nutritional awareness, physical fitness, stress management and environmental sensitivity. According to Ardell (1977), "living a healthy lifestyle is a living response to your environment (p. 24)". Ardell (1977) points out that while evolving a better future -- by living at the top of one's powers and experiencing an enlarged existence -- the individual can also enjoy the here and now.

Active involvement in daily lifestyle improvement denotes wellness according to Gilmore (1979). Gilmore (1979) carries this further in saying that wellness is striving daily for better health through ongoing assessment, intervention and reinforcement. A person can use these three steps immediately no matter what his or her present state of health.

Advocates of wellness feel good health should be on our minds all of the time. Hassett (1978) points out that in the past a good patient had yearly check ups to find out from the doctor if he was healthy. Today, there is a new emphasis on each person's responsibility for his health. Rather than focusing on health when ill, a healthy program of diet, exercise, stress management and lifestyle should become a part of a large picture that determines the quality and length of life.

In defining wellness Moses (1979) says, "Wellness isn't something you do for 15 minutes a day. It's something you become -- a harmonious, integrated, 'whole' person (p. 30)."

Influencing Wellness Behavior in an Educational Setting

According to Wynne (1978) many adolescents are generally unhealthy. Tobacco, marijuana and other illicit drug use among adolescents were reported to be on the rise. The sexual behavior of youth has resulted in a steady increase in teen pregnancies, especially in the 11-13 age category. Physiological immaturity contributes to health risks both to mother and infant. In addition, the increase in sexual activity is related to the spread of venereal disease among adolescents.

An HEW report on alcoholism cited by Crase, Hamrick, and Rosato, (1979), disclosed that one in five high school students gets drunk at

least once a month. Nineteen percent of 14 to 19 year olds -- more than three million young people -- have alcohol related problems.

Lack of fitness has also been identified as a problem area in adolescents. According to a Mayo Medical School Study sponsored by the National Institutes of Health it was reported that the major cause of childhood obesity which affects nearly 20% of the nation's children, is lack of exercise (Crase, et al., 1978).

The U.S. Surgeon General called for better preventive health in a national policy report, Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention. Former President Carter also advocated expanded efforts at disease prevention, health information and promotion. Leonard (1977) cited Carter in a major address on the subject of health promotion:

> A vast amount of our ill health is caused by the way we live, by the environment we've created and by the life-style we've adopted. It is not the role of the government to dictate lifestyle. But it is the proper role of the government to educate our citizens and to aggressively stress the promotion of good health.

Knowledge is one of the most important factors in promotion of health according to Shirreffs (1978). By educating Americans to choose healthy lifestyles, dramatic changes in morbidity and mortality rates can be brought about. This has been demonstrated by the decrease in heart disease deaths brought on by high blood pressure following a national education program on high blood pressure. Other studies have shown the effectiveness of education upon health behaviors as well.

Small discussion groups were used by Green (1979) and his associates to effectively decrease asthmatic patients visits to a hospital emergency

department to less than half the number of visits by a control group. Rosenberg (1971) used 100 patients who had congestive heart failure and randomly assigned them to a health education or control group. The subjects in the health education group had one-third as many readmission days and one-half as many readmissions. Education intervention in controlling essential hypertension was tested by Levine and Green (1979). They showed an increase in patient compliance with medication directions, a greater proportion of weight loss and an increase in the number of patients who kept appointments with the medical staff. There was also a significant increase in the proportion of patients with blood pressure under control.

Sheldon (1980) used an activity-centered, supplementary health education program, the Health Activities Project (HAP), to determine the effect it would have on student attitudes toward their own health and to health related issues. Student inventory responses indicated increases in family discussions about health, perceived control over their own health, and a recognition that they learn about health in school and from their family. There was also a slight increase in student interest in body functions and concern about their future state of health.

In a study of personal health class students at Ohio University, Bonguro (1979) showed that learning activities affect behavior either by changing negative health behaviors to positive or reinforcing positive ones. Following an educational program designed to assess and change or modify behavior, significant results were seen in relation to student's weight, exercise participation and smoking habits.

Recent data on health education in the corporate setting indicate that fitness and wellness programs for employees are currently being offered by over 3,000 businesses in the U.S. (Toohey and Shirreffs, 1980). An example of such programs is that at Control Data Corp. whose "self-health management program" is being phased in for all 59,000 corporate employees worldwide and their dependents. The program will stress personal responsibility and elements in health assessment, health promotion and disease prevention.

Kimberly-Clark Corp. has invested $2.5 million in health-management facilities in Neenah, Wisconsin. The program, which covers 1,400 salaried employees at a cost of $500 per employee annually, expects ultimately significant annual savings in about 10 years. The primary reason for promoting wellness is to make some long-term reduction in the extent of employee illness and its costs (Harris, 1979).

In a pilot study, the St. Paul Companies invited 92 employees to attend a series of six ninety-minute health education sessions at no cost and on company time. The objective of the final session was for each person to agree on some type of behavior change. Six months after the last session, 60% of the group had made some change in lifestyle in a direction that could potentially reduce one or more health-risk factors (Harris, 1979).

The question of whether such programs will actually curtail health care costs is yet to be answered. Fitness programs deal with changes in lifestyle, and their physiological effects often don't register for years. However, proponents of such programs insist the benefits run far deeper

than the cost of health care (Nelson and Linnehan, 1978). The company's objectives also include reducing absenteeism and improved productivity (Carpenter, 1980).

As with health behaviors, initial studies indicate that education programs may influence wellness attitudes and behaviors. Williamson (1978) assessed the effects of a wellness program on attitudes and behaviors of graduate students. Williamson (1978) concluded that student attitudes toward wellness were enhanced by a wellness education program. Using high school students as subjects, Beier (1979) developed a wellness education program and a Wellness Behavior Inventory to determine the effectiveness of the program in changing wellness attitudes and behaviors. Beier (1979) concluded from the study that an educational program was effective in enhancing positive attitudes and behaviors toward wellness among tenth grade students.

The Locus of Control Construct

One of the key constructs in Rotter's social learning theory is called internal-external control of reinforcement. Based on the social learning theory, people acquire generalized expectencies to perceive events either as dependent upon their own behavior or as being beyond their own control (Ryckman, 1978). People who are externally oriented have a tendency to explain life events as the result of external forces in society. Since the events that take place in society are unpredictable, externals look on life as a matter of luck, fate, chance, or powerful others. Internally oriented people are inclined to explain events in life as the result of their own behaviors. Since they think they can

influence their own actions they do not consider what happens to them as a matter of luck (Kleinke, 1978). Rotter (1966) describes an internal as one who "perceives that the event is contingent upon his own relatively permanent characteristics."

Social learning theory relies on empirical law of effect. It focuses on behavior change as a function of removing or stimulating events as its criterion for reinforcement (Ryckman, 1978).

> The occurrence of a behavior of a person is determined not only by the nature or importance of goals of reinforcements but also by the person's anticipation or expectency that these goals will occur. Such expectations are determined by previous experience and can be quantified. (Rotter, Chance and Phares, 1972, p. 10).

It is possible, with this understanding, to use knowledge of reinforcing events to make predictions about behavior.

The measure of the internal-external control dimension as a personality variable in social learning theory was first attempted in a doctoral dissertation by Phares in 1955. A 13-item scale was designed to measure a general attitude or personality characteristic of attributing the occurrence of reinforcements to chance rather than oneself (Lefcourt, 1966). James (1957) developed an inventory using a Likert Scale to show both extreme internals and externals. Results indicated that people scoring at both extremes appeared less adjusted than those with central scores (Rotter, 1966).

As different applications of the social learning theory became apparent, additional inventories were developed. The Intellectual Achievement Responsibility Questionnaire (IARQ) (Crandall, Katkovsky, and Crandall, 1965) was designed to measure children's beliefs in their

control over and responsibility for intellectual academic success and failures. The Bialer-Cromwell Children's Locus of Control Scale (Bialer, 1960) was developed for retarded children. Specialized dimensions of locus of control are measured using the Multidimensional IE Scale (Gurin, Gurin, Lao and Beattie, 1969). The most widely used scale is Rotter's Internal-External Locus of Control Scale (Rotter, 1966).

According to Ryckman (1978), a person's development is contingent upon the standards, mores, goals, and techniques communicated to him by his parents. Next to parents, school has the greatest influence on the child's development. As the child gets older, this influence shifts from the authority of parents and school, to the influence of peers. Development of locus of control is contingent on the child's environmental atmosphere and these influences cited. Shifts in locus of control have been seen to correspond with changes in significant relationships in the course of maturation. The home is the origin of healthy or unhealthy behavior. This later transfers to the school situation (Rotter, 1954).

Beliefs in internal control are learned in families where parents are warm and supportive of children, as well as consistent in discipline, as indicated by Ryckman (1978). This atmosphere allows for children to learn to accept success or blame failure upon themselves.

Parental influence changes in later childhood from supportive to detachment, encouraging independence. Dependence is not reinforced. The child becomes more involved with his physical and social environment where there is greater opportunity to observe the effect of his own behavior and the contingency of his own actions (Ryckman, 1978). Milgram (1971) has shown that children tend to become more internal with age.

It is common in research on locus of control to imply that externality is an undesireable tendency and internality, desireable (Janzen and Beeken, 1973). Robinson and Shaver, (1973), in a review of literature explained "All of the research points to the same conclusion: people are handicapped by external locus of control orientations (Robinson and Shaver, p. 170)". Straits and Sechrest (1963) conducted a study of the relationship of internal-external control to smoking. In the study Straits and Sechrest (1963) found that non-smokers were significantly more internal than smokers. James, Woodruff and Werner replicated that finding in 1965. In addition, James, et al, (1965), showed that following the Surgeon General's report, males who quit and did not return to smoking in a specified period of time were more internal than those who believed the report but did not quit smoking.

Studies have shown that internals not only believe they control their outcomes, but also perform more effectively than externals. Externals on the other hand, are more open to influence than internals. Internals tend to make judgements independent of others demands while externals were more compliant to those situations (Ryckman, 1978). As early as 1899, as cited by Rotter (1966), Veblen implied that a belief in luck or chance as a solution to one's problems was characterized by less productivity. Rotter (1966) in turn drew a parallel to the hypothesis that a belief in external control is related to general passivity.

Perhaps Rotter is responsible for this interpretation of internal v. external locus of control. His views on their characteristics are evidenced in these statements:

> A series of studies provides strong support for the hypothesis that the individual who has strong belief that he can control his own destiny is likely to (a) be more alert to those aspects of the environment which provide useful information for his future behavior; (b) take steps to improve his environmental condition; (c) place greater value on skill or achievement reinforcements and be generally more concerned with his ability, particularly his failures; and (d) be resistive to subtle attempts to influence him (Rotter, 1966 p. 25).

About externality, Rotter had this to say:

> Clearly we need continuing study to reverse this trend (toward externality). Our society has so many critical problems that it desperately needs as many active, participating internal-minded members as possible. If feelings of external control, alienation and powerlessness continue to grow, we may be heading for a society of drop-outs -- each person sitting back, watching the world go by (Rotter, 1971 as cited by Janzen and Beeken, 1973).

The prevailing belief as recognized by Robinson and Shaver (1973) is that it is desireable to change people, in the direction of internality. Accordingly, researchers have begun to develop techniques to implement such changes, to the extent that a review of this aspect of locus of control has been carried out (MacDonald, 1972).

Janzen and Beeken (1973) argue that there are positive aspects of externality. Janzen and Beeken (1973) cite liberating attitudes to interpersonal relationships, greater tolerance of unpredictable situations, a more realistic appraisal of the nature of what influences us, and a less overt desire for power as examples of positive characteristics. However, a positive approach to external locus of control has not been assumed with the same intensity and far less frequency that it has been assumed for internality (Janzen and Beeken, 1973).

Thus far, much research has been carried out to change people in an internal direction in order to effect a behavior change. Recently,

research has been carried out to see if behavior change can be affected in externals without emphasis on locus of control change. Saltzer (1978) showed this approach to be successful in evaluation of locus of control and application of weight loss techniques. The results of the study showed success in modifying behavior of internals through self-control interventions and utilizing social pressure to successfully motivate externals. These techniques may differentially influence the determinants of behavior intentions. Success with self-control interventions on internals may be because they act on the personal attitude toward the behavior component. The treatment more successful with externals may be due to the fact that it dealt with the external influence of social pressures (Saltzer, 1978).

One more aspect of locus of control deserves notice. The extent of internality or externality is of importance. Rotter (1966) notes that people at either extreme of internal or external control are likely to be maladjusted. Even the seemingly positive attributes associated with internality can interfere with a person's ability to function effectively. The effects of either extreme upon subsequent behavior should be investigated.

Thus far, the social learning theory has had little direct impact on the solution to social problems. However, knowledge gained about locus of control has potential applied value. It is suggested that persuasive messages designed to influence behavior change should consider individual differences in control orientation if they are to be effective. Research on locus of control has suggested kinds of messages which best influence internals and externals in a variety of situations (Ryckman, 1978).

Putting this knowledge to work may help people to be more effective at changing behaviors as they choose.

Health Behavior and Locus of Control

There is evidence that the locus of control construct is relevant to prediction of health behaviors. Several studies have revealed that internals are more likely to engage in behaviors that facilitate well-being. Studies examining smoking behavior have shown internals to be more successful at reducing, quitting and/or maintaining changes in smoking behaviors (Straits and Sechrist, 1963; and Kaplan and Cowles, 1978). Similar studies have linked internality to contraceptive use among sexually active individuals (McDonald, 1972; Balch and Ross, 1975; and Wallston, Wallston, Kaplan and Maides, 1976). Internality was found to be related to the practice of other health behaviors as well; greater seat belt use (Williams, 1972); preventive dental health behavior (Williams, 1972); influenza innoculation among college students (Dobbs and Kirscht, 1971); self-reported preventive health behavior for hypertensive patients (Lewis, Morisky, and Flynn, 1978) and ability to withstand assault of stressors (Lefcourt, 1976).

As with locus of control research outside the area of health behavior, internality is not always seen as a consistent predictor of positive practices. Johnson and Chamberlain (1978) showed that the Rotter Scale was unable to predict which subjects would show the most significant decrease in smoking rate and maintain this reduction. Goss and Morosko (1970) found that alcoholics were internal. Studies have also been conducted that examine locus control and the health behaviors of children. Stone (1977) assessed the effects of the School Health

Curriculum Project on fifth grade students in five areas related to health attitudes and behaviors, one of which was locus of control. Using the Nowicki-Strickland Internal-External Locus of Control Scale for Children, Stone (1977) found that expectencies of illness and accidents did not change following educational treatment.

The interrelationship between the independent variables health locus of control and health values and their effect on the dependent variable of health status was examined in a study by Parcel, et al. (1980). Locus of control was measured using the Children's Health Locus of Control Scale developed by Parcel in 1978. Results showed that children who placed a high value on health who have an internal locus of control are less likely to report frequent illness or susceptibility to illness. Parcel, et al. (1980) pointed out that the study would have been stronger with an objective measurement of health behavior rather than a measurement of perceived health status.

Schlegel and Crawford (1978) examined the relationship between Reid and Ware's Multidimensional Measure of Internal-External Locus of Control and licit and illicit drug use among 920 high school students over a two-year period. Greater externality on the dimension of fatalism was significantly related to the use of a number of drugs. However, externality on the dimensions of self-control and sociopolitical control were seen to have no consistent relationship to drug use.

CHAPTER III

Methods

The study was designed to measure the effectiveness of a wellness education program in changing wellness behaviors of fifth and sixth grade students. It further intended to show whether locus of control would influence wellness behavior change. To accomplish this, it was necessary to develop a wellness behavior inventory and wellness locus of control inventory for the subjects involved in the study. In addition, a wellness education program was designed.

The research methods used in the study are presented in the four phases as follow:

1. Inventory development.
2. Educational program development.
3. Experimental design and procedures.
4. Statistical analysis of data.

Inventory Development

The study called for the use of two inventories, one to measure wellness locus of control in children and another to measure wellness behaviors in children. This section will first examine the development of the Children's Wellness Locus of Control Inventory (CWLC). It will be followed by discussion of the revision of the Wellness Behavior Inventory (Beier, 1979) to come up with the Children's Wellness Behavior Inventory.

Children's Wellness Locus of Control Inventory (CWLC)

Through the review of literature, it was discovered that locus of control inventories do exist. More specifically, inventories have been developed that measure health locus of control. These include the Health Locus of Control Scale (Wallston, et al, 1976), the Multidimensional Health Locus of Control Scale (Wallston and Wallston, 1978), and the Children's Health Locus of Control Scale (Parcel and Meyer, 1978).

Of these three inventories, only one, the Children's Health Locus of Control Scale (CHLC), was applicable to the subjects in the study. However, further examination of the inventory statements revealed that the inventory was not specific to the wellness dimensions that would be tested.

An instrument designed for children to measure locus of control related to the five dimensions of wellness was necessary for use in the study. Since such an instrument did not exist, the Children's Wellness Locus of Control Inventory (CWLC) was developed. Upon review of literature concerning both wellness inventories (Ardell, 1977; Beier, 1979; Travis, 1977; and Williamson, 1978) and locus of control inventories (Parcel and Meyer, 1978; Robinson and Shaver, 1973; Wallston et at, 1976; Wallston and Wallston, 1978) a preliminary inventory was constructed.

The preliminary CWLC Inventory was made up of 59 statements. To assure readability and content validity of the statements, the inventory was sent to eight jurors. Of these eight members, five were associated with the Health Education Department at the University of Wisconsin - LaCrosse; two were from the University of Wisconsin - LaCrosse Counseling and Testing Center; and, one was visiting associate professor in the Health Education Department at the University of Utah in Salt Lake City, Utah.

Assistance in evaluation of the instrument was requested by mail. The mailing included a letter of explanation (Appendix A), an evaluation form (Appendix B) and the inventory statements. The evaluation form, developed by Gilmore (1974), enabled jurors to respond to each statement regarding effectiveness in measuring a subject's internal or external locus of control with regard to wellness behavior. A numerical rating system of from 1 (not acceptable) to 5 (indispensable) was used to evaluate each statement. Space was also provided to the right of each statement for additional comments. Analysis of the evaluations consisted of calculation of the mean for each statement. Consideration was also given to comments the jurors had made.

With seven of the eight inventories returned it was apparent that some major revisions were necessary. Of these seven jurors, one had chosen not to complete evaluation of the inventory. The remaining six jurors had completed the evaluation but the comments were consistent in citing weaknesses in the inventory. Taking into consideration the comments offered by these six jurors, a revised inventory consisting of 48 statements was developed.

The revised inventory was sent to six of the eight original jurors. A revised inventory was not sent to one of the original jurors because the preliminary inventory had not been completed. Since time was a vital factor, a revised inventory was also not sent to the juror in Salt Lake City, Utah.

Along with the revised inventory, jurors received a letter explaining need for revision, the Inventory Rating Scale (Gilmore, 1974), and

guidelines to consider in determining acceptability. As with the preliminary inventory, statements were rated from 1 (not acceptable) to 5 (indispensible) and space was provided for written comments to the right of each statement. The date given for return of inventories was April 2, 1980. Of the five jurors meeting this deadline, four were associated with the Health Education Department of the University of Wisconsin - LaCrosse and one was a Counselor at the University of Wisconsin - LaCrosse Counseling and Testing Center. (Appendix C).

Evaluation analysis of the revised inventory consisted of calculation of the mean score of each statement. Statements with a mean score of 3.0 or above were considered for inclusion in the final inventory. Since a rating of 3.0 by the jurors indicated the statement was valuable for measuring the subject's wellness locus of control, it was selected as an acceptance level. Upon examination of the mean scores, it was found that all statements had at least a 3.0 value. Therefore, to reduce the number of inventory statements, each was examined and considered on the basis of mean score, juror comments and variation from other statements. From each of the five wellness dimensions, five statements were selected. Of these, the wording of three statements was changed as suggested by jurors. For variation, one statement was added to the physical fitness section on the basis of a 4.2 ranking on a similar item in a different section. The final inventory consisted of 25 statements and can be found in Appendix D. The reliability of the inventory was determined by using the scores of a pilot group of fifth grade students attending Lawrence Larsen School in Sparta, Wisconsin. A Hoyt's Analysis of Variance formula was used to calculate the reliability coefficient of .2233.

Children's Wellness Behavior Inventory (CWBI)

In the review of literature it was discovered that inventories on wellness do exist. The Wellness Inventory (Travis, 1977) was designed as a tool for educational and personal awareness and not as a validated measurement device according to Beier (1979). It was decided that this device would not be acceptable for use in the present study on that basis.

Beier (1979) developed the Wellness Behavior Inventory for use among tenth grade students. The Wellness Behavior Inventory was determined to have a reliability coefficient of .8226, using Hoyt's Analysis of Variance.

Scrutiny of Beier's instrument revealed that while many statements were suitable for the population in the study, some were not. Those seen not suitable were determined on the basis of readability and/or applicability to the fifth and sixth grade subjects.

This observation led to a revision of Beier's Wellness Behavior Inventory. The seventy statements from the original instrument were reduced to twenty-five. In addition, twelve were reworded to make them more readable by the age group in the study. The CWBI is found in Appendix E.

Educational Program Development

An educational program was developed for use in the present study. The wellness education program was developed for use with the experimental group. A nonrelevant education program consisting of first aid lessons was presented to the nonrelevant treatment group. Discussion of the wellness education program follows.

Wellness Education Program

A six-week wellness education program was designed to introduce wellness and enhance behaviors of the experimental group. It was developed after reviewing literature and investigating existing wellness programs (Ardell, 1977; Bruhn et al, 1977; Travis, 1977; Williamson, 1978; Beier, 1979).

The program was developed as a special unit for the experimental group. This program was incorporated into the health education curriculum at Onalaska Middle School during the 1980-1981 school year. Time allowed six 50-minute periods for implementation of the program. Materials comprising the complete educational program are found in Appendix F.

The following outline summarizes the content of the educational program.

I. Introduction to Wellness Concept
   - A. Personal interest
   - B. Definitions of wellness
   - C. Difference between wellness and good health

II. The Wellness Process
   - A. The wellness continuum
   - B. Finding a place on the wellness continuum

III. The Wellness Dimensions
   - A. Self-Responsibility
   - B. Nutritional Awareness
   - C. Stress Management
   - D. Physical Fitness
   - E. Personal Health and Safety (Environmental Sensitivity)

IV. A Wellness Lifestyle

A. Personal assessment

B. Committment to change

V. Personal Growth

A. Discussion of personal wellness definitions

B. Sharing wellness promotion ideas

An introduction to the concept of wellness and exposure to the five wellness dimensions described by Ardell (1977) made up the education program. Ideas for incorporating the wellness concept into daily lives were shared following presentations of the five dimensions. Personal lifestyle assessment and committment to change toward higher levels of wellness culminated the program.

Experimental Design and Procedures

Subject Selection. The population for the study was selected from the twelve fifth and sixth grade homerooms at Onalaska Middle School. Cluster sampling techniques were used to select the three homerooms that would be included in the study. Each of the three participating homerooms were randomly assigned to a different treatment group by the researcher. The three treatment groups consisted of 1) an experimental group; 2) a nonrelevant treatment group; and, 3) a control group.

The homeroom assigned to the experimental group took part in a six-week wellness education program. The homeroom assigned to the nonrelevant treatment group took part in a six-week first aid unit. The homeroom assigned as the control group received no health instruction.

One week prior to the pretest, letters were sent home with students participating in the study. The letter contained information about the

content and purpose of the study and included a parental consent form. All of the subjects returned their parental consent forms before the program started. (Appendix G.)

Procedures

The CWLC developed for this study, and the CWBI were administered separately by the researcher to the three groups on the same day. While pretesting, the subjects first completed the CWLC and then the CWBI.

Control group subjects were pretested at the beginning of a study period. After eight weeks, control group subjects were posttested using the CWLC and the CWBI. No interaction was made between the researcher and the control group subjects between tests.

One week after being pretested using the CWLC and the CWBI, the nonrelevant treatment group subjects began a six-week unit on basic first aid procedures. Eight weeks following the pretests, nonrelevant treatment group subjects were posttested in the same manner as the control group.

The experimental group began a wellness education program one week following administration of the pretests. The educational program was implemented during the six weeks between the pre and posttests, which were administered eight weeks apart.

In summary, the control group received no treatment between pre and posttests. The nonrelevant treatment group received a first aid unit as a nonrelevant treatment between pre and posttests. The experimental group received a wellness education program as intervening treatment between pretests and posttests.

Research Design

The research design selected for the study was a pretest-posttest control group design. Since the change score values were to be used in statistical analysis, administration of a pretest and posttest were mandatory. The control group was needed to determine the extent of the pretest influence upon posttest outcome.

According to Weirsma (1969), the pretest posttest control group design can be extended to include additional groups. The nonrelevant treatment group was added with this understanding to show that the wellness education program, and not the teacher administering the program and other factors, were responsible for pretest to posttest change scores.

Statistical Analysis of Data

Selection of Tests. Non-parametric statistical tests were chosen for analysis of data since the level of data collected was ordinal and the subject population was relatively small and distribution free. Downie and Heath (1974) call for the use of nonparametric statistics when the criteria described above are present.

According to Siegel (1956):

> A nonparametric statistical test is a test whose model does not specify conditions about the parameters of the population from which the sample was drawn. Certain assumptions are associated with most nonparametric statistical tests, ie., that the observations are independent and that the variable under study has underlying continuity, but these assumptions are fewer and much weaker than those associated with parametric tests. Moreover, nonparametric tests do not require measurement so strong as that required for the parametric tests; most nonparametric tests apply to data in an ordinal scale, and some apply also to data in a nominal scale (p. 31).

In order to assess the effectiveness of the wellness education program upon wellness behavior, the nonparametric statistical test chosen for analysis of data was the Mann-Whitney U-Test. According to Champion (1970):

> The Mann-Whitney U-Test is designed to perform a function similar to the T-test, and it makes no assumptions concerning the distributions involved. This test assumes that the investigator has at least ordinal-level information at his disposal. This means that he will be able to rank elements according to some measureable dimension. (p. 176).

In addition, Champion states:

> The Mann-Whitney U-Test is a test for the significance of difference between two samples where the elements have been ranked according to some ordinal-level variable. Specifically, it is designed to determine whether the various ranked values for any given variable are equally distributed throughout both samples. (p. 176).

The Mann-Whitney U-Test was used to determine if the following score gain values were statistically significant at the $p \leq .05$ level of significance. All analyses were two-tailed:

1. Change in pretest to posttest score values on the Children's Wellness Behavior Inventory between the wellness experimental group and the control group.
2. Change in pretest to posttest score values on the Children's Wellness Behavior Inventory between the wellness experimental group and the nonrelevant treatment group.
3. Change in pretest to posttest score values on the Children's Wellness Behavior Inventory between the nonrelevant treatment group and the control group.

The statistical procedure used to determine the relationship of pretest to posttest wellness behaviors change of internal and external

subjects was the Spearman Coefficient of Rank Correlation. This test measures the degree of correspondence between rankings and can be considered a measure of association between the samples (Gibbons, 1971).

The Spearman Coefficient of Rank Correlation was used to determine if the association between CWBI change scores and CWLC pretest scores was significant at the $p \leq .05$ level of significance. All analyses were one-tailed:

4. Association between pretest and posttest wellness behavior change scores of internal and external subjects in the experimental group.
5. Association between pretest and posttest wellness behavior change scores of internal and external subjects in the non-relevant treatment group.
6. Association between pretest and posttest wellness behavior change score of internal and external subjects in the control group.

Subjects were classified as either "internal" or "external" according to their ordinally ranked pretest scores from the Children's Wellness Locus of Control Inventory. The split mean was determined to be 48. Those scoring above this mean were designated externals. Those scoring on or below the mean were classified as internals. To check that the mean values were not influenced by external scores, the median was also determined. The median value was found to be 48, and showed that no extreme score influences existed.

To establish whether there was an association between original locus of control, pretest CWLC scores of all groups were compared. The

Spearman Coefficient of Rank Correlation was utilized to show this. To determine whether wellness behavior change was due solely to the educational program, pretest to posttest CWLC change scores were compared between the groups. The Mann-Whitney U-Test was the test selected to demonstrate this.

CHAPTER IV

Results and Discussion

Introduction

The effectiveness of a wellness education program on the wellness behavior of fifth and sixth grade students was investigated. Student wellness behavior change was determined with the administration of the Children's Wellness Behavior Inventory (CWBI). Effectiveness of the wellness education program was measured by determining pretest to post-test change scores on the CWBI. Statistical significance of the change in student wellness behavior scores was calculated using the Mann-Whitney U-Test.

Influence of internality and externality upon wellness behavior change was also examined. Wellness locus of control was assessed with the Children's Wellness Locus of Control Inventory (CWLC). Calculation of the mean was used to determine internality and externality. Correlations between the wellness behavior changes of internals and externals were calculated for each group using Spearman's rho correlation coefficient test.

Additional statistical tests were carried out beyond those that tested the hypotheses. To determine whether an association existed between the pretest locus of control scores of all three groups, a test for correlation was utilized. Spearman's rho correlation coefficient test was selected to demonstrate this. A change in wellness locus of control in each group was looked at to determine possible influence on

wellness behavior change. Wellness locus of control change was determined by calculating pretest to posttest change scores on the CWLC. Statistical significance of the change in student wellness locus of control scores was calculated using the Mann-Whitney U-Test.

Subjects

Fifth and sixth grade students at Onalaska Middle School were the target population. Subjects taking part in the wellness education program made up the experimental group. Those enrolled in a first aid class served as a nonrelevant treatment group. The control group received no treatment. Cluster sampling techniques were used to select the three homerooms that would participate in the study. Each of these three homerooms was randomly assigned to the experimental, the non-relevant treatment or the control group. A final total of 80 students took part in the study. Comparison of the groups according to grade, age and sex is found on Table 1.

Table 1

Comparison of Population by Grade, Sex, and Age

	Subject's Grade		Sex		Age	Total
Experimental Group	5th	14	Males	6	All members of the Experimental Group were between the ages of 10-12	23
			Females	8		
	6th	9	Males	4		
			Females	5		
					mean age = 11.17 years	
Nonrelevant Treatment Group	5th	14	Males	7	All members of the nonrelevant treatment population were between the ages of 10-12	26
			Females	7		
	6th	12	Males	5		
			Females	7		
					mean age = 10.76 years	
Control Group	5th	17	Males	9	All members of the control group were between the ages of 10-12	31
			Females	8		
	6th	14	Males	6		
			Females	8		
					mean age = 11.12 years	

Results

The results of this research are presented in three sections. The first section compares the change in wellness behaviors between groups to test null hypotheses 1, 2 and 3. The second section compares wellness behavior change scores between internals and externals of each group to test null hypotheses 4, 5 and 6. The third section looks at additional factors that could influence wellness behavior change. No hypotheses were developed for testing in this section. Internal-external locus of control orientation comparisons between groups are discussed. In addition, wellness locus of control change between groups are compared.

Wellness Behavior Change

The Mann-Whitney U-Test was used to determine the statistical significance between group change scores. Since $N \geq 20$ in all groups, the Z values were calculated from the U scores to determine critical values (Champion, 1970). The level of significance was set at $p \leq .05$. Table 2 displays the U and Z values for each group comparison.

Table 2

Results of Comparison of CWBI Change by Mann-Whitney U-Test

Group Comparison	U value	Z value	p value
Experimental vs. Control	312.0	-.7796	.4354
Experimental vs. Nonrelevant Treatment	188.5	-2.2194	.0264 *
Control vs. Nonrelevant Treatment	229.5	-2.7842	.0052 *

* significant at the .05 level (two-tailed test)

The following null hypotheses were evaluated according to computations of differences between pretest and posttest scores on the Children's Wellness Behavior Inventory:

1. Null Hypothesis: There will be no significant difference in pretest and posttest change scores on the Children's Wellness Behavior Inventory between the experimental group and the control group.

   A U value of 312.0 was obtained from experimental group and control group change score comparison. From this a Z value of -.7796 was calculated. The value located on the Z-table (Siegel, 1956) for a two-tailed test was p = .4354. Since the value was greater than .05 the null hypothesis could not be rejected. Thus, change scores of the experimental group on the Children's Wellness Behavior Inventory were not considered to be significantly different than the change score values of the control group.

2. Null Hypothesis: There will be no significant difference in pretest and posttest change scores in the Children's Wellness Behavior Inventory between the experimental group and the nonrelevant treatment group.

   A U value of 188.5 was obtained from experimental group and nonrelevant treatment group change score comparisons. From this a Z value of -2.2194 was calculated. The value located on the Z table (Seigel, 1956) for a two-tailed test was p = .0264. Since this value was less than .05, the null hypothesis could be rejected. Thus, change scores of the ex-

perimental group on the Children's Wellness Behavior Inventory were considered to be significantly different from the change scores of the nonrelevant treatment group.

3. Null Hypothesis: There will be no significant difference in pretest and posttest change scores between the nonrelevant treatment group and the control group.

A U value of 229.5 was obtained from the nonrelevant treatment group and control group change score comparison. From this a Z value of -2.7842 was calculated. The value located on the Z-table (Seigel, 1956) for a two-tailed test was $p = .0052$. Since this value was less than .05, the null hypothesis could be rejected. As a result, scores of the nonrelevant treatment group on the Children's Wellness Behavior Inventory were considered to be significantly different from the change scores of the control group.

Locus of Control and Wellness Behavior Change

The Spearman Rank Correlation Coefficient was used to correlate wellness behavior change scores of the internal and external subjects for all three groups. The level of significance for the two-tailed tests was set at $p \leq .05$. The results are presented in Table 3.

Table 3

Association of Internal-External Wellness Locus of Control Orientation and Wellness Behavior Change by Spearman's rho

Group	r_s value	p value
Experimental	.0799	.359
Nonrelevant Treatment	-.4235	.016 *
Control	-.1808	.165

* significant at the .05 level (two-tailed test)

The following null hypotheses were evaluated according to computations of pretest to posttest changes on the Children's Wellness Behavior Inventory among internal and external subjects.

4. Null Hypothesis: There will be no significant association between the pretest and posttest change scores of internal and external subjects on the CWBI in the experimental group.

   Spearman's rho correlation was used to determine a correlation between CWBI change scores among internals and externals in the experimental group. The procedure was applied to change scores from the CWBI and the pretest scores on the CWLC. Extreme values of +1.00 and -1.00 represent a perfect relationship between variables while a value of 0.00 represents the absence of a relationship (Runyon and Haber, 1977). An r_s value of .0799 was obtained from this procedure. This indicated a lack of correlation between CWBI change scores of internals and externals in the experimental group. The level of significance was determined to be p = .359 which meant the null hypothesis could not be rejected.

5. Null Hypothesis: There will not be a significant association between the pretest and posttest change scores of internal and external subjects on the CWBI in the nonrelevant treatment group.

Application of the Spearman's rho procedure to the data resulted in a r_s value of -.4235. This suggests evidence of a correlation between CWBI change scores among internal and external subjects. The level of significance was determined to be p = .016,which supported evidence of the correlation and resulted in rejection of the null hypothesis.

6. Null Hypothesis: There will not be a significant association between the pretest and posttest change scores of internal and external subjects on the CWBI in the control group.

The Spearman's rho procedure was applied to the data of the control group to determine an r_s value of -.1808. This value indicated an absence of a correlation. This was further supported by a level of significance of p = .165, which meant the null hypothesis could not be rejected.

Additional Findings

Internal-External Wellness Locus of Control: No hypothetical assumptions were made regarding the comparison of internals and externals in each group. Statistical analyses were carried out to consider all factors that could influence wellness behavior change. In order to examine internal-external wellness locus of control comparisons, Spearman's rho procedure was applied to the CWLC pretest scores. Table 4 displays the results of this test.

Table 4

Association of Pretest CWLC Scores
by Spearman's rho

Group Comparison	r_s value	p value
Experimental vs. Nonrelevant	-.1911	.094
Experimental vs. Control	.1901	.084
Nonrelevant vs. Control	-.0268	.422

In comparing the experimental and nonrelevant treatment group, a r_s value of -.1911 was obtained. This value was determined to have a $p = .094$ level of significance. As a result, there is evidence that no significant correlation existed between these two groups at the $p \_ .05$ level.

The comparison of the experimental and control group resulted in an r_s value of .1901. The level of significance was determined to be $p = .084$, which indicated no significant correlation between the experimental and control group at the $p \leq .05$ level.

The nonrelevant treatment group and control group comparison resulted in an r_s value of -.0268. A $p = .422$ level of significance was evidence that no significant correlation existed between the groups at the $p \leq .05$ level.

Wellness Locus of Control Change: There were no hypothetical assumptions made in regard to locus of control change. In order to consider the possibility of this influence upon wellness behavior change, statistical analysis was carried out.

Wellness locus of control change was determined by calculating change in pretest and posttest scores. To determine statistical significance of the wellness locus of control change between groups, the Mann-Whitney U-Test was utilized. Results are displayed in Table 5.

Table 5

Results of Comparison of Pretest to Posttest CWLC Change by Mann-Whitney U-Test

Group Comparison	U value	Z value	p value
Experimental vs. Nonrelevant Treatment	298.0	-.0201	.4920
Experimental vs. Control	305.0	-.9023	.1788
Nonrelevant Treatment vs. Control	379.0	-.3851	.3483

Comparison of wellness locus of control scores between the experimental and nonrelevant group resulted in a U score of 298.0. From this a Z value of -.0201 was calculated. The value located on the Z table (Siegel, 1956) for a two-tailed test was $p = .4920$. Since this value was greater than .05, no significant difference was indicated in the wellness locus of control change scores between the experimental and nonrelevant groups.

The experimental and control group comparison resulted in a U score of 305.0. The Z score for this value was calculated to be -.9023. From this it was determined that $p = .1788$. Since $p > .05$, no significant difference existed between the experimental and control group wellness locus of control change scores.

The U score from the nonrelevant treatment group and control group comparison was 379.0. From this a Z value of -.3851 was calculated. The Z table was p = .3483, which was greater than the .05 level of significance. As a result, there was evidence that no significant difference existed between the nonrelevant treatment and control group change scores on the CWLC.

Discussion

The present study sought to determine whether a wellness education program would affect wellness behaviors of middle school students. The results indicated that the wellness education program was effective in changing wellness behavior when comparing the experimental to the nonrelevant treatment group. However, the wellness education program did not have a statistically significant effect upon wellness behavior change in comparing the experimental to the control group. In addition, the control group and nonrelevant treatment group comparison showed a statistically significant difference between wellness behavior change scores.

In comparing the average change scores on the CWBI of all groups, the effectiveness of the wellness education program must be questioned. Table 6 displays CWBI pretest, posttest, and change scores. The group to show the greatest average increase in change score was the control group. Following that was the experimental group. The nonrelevant group change score average was a negative value which suggests a general decrease in wellness behavior score rather than an increase.

Table 6

Comparison of Inventory Scores

Group		CWBI Pretest	CWBI Posttest	CWBI Change	CWLC Pretest	CWLC Posttest	CWLC Change
Experimental	Total	1958	1973	15	1063	1003	60
	Mean	85.1	85.8	.65	46.2	43.6	2.61
	N = 23						
Nonrelevant Treatment	Total	2286	2160	-126	1328	1263	65
	Mean	87.9	83.1	-4.84	51	48.6	2.5
	N = 26						
Control	Total	2506	2610	104	1568	1548	20
	Mean	80.8	84.2	3.35	50.5	49.9	.65
	N = 31						

A second purpose of this study was to determine whether internality or externality would influence wellness behavior change. There was no association seen between internality, externality and wellness behavior change among both the experimental and control groups. However, a negative association was established through statistical analysis of scores in the nonrelevant treatment group. Table 7 displays internal and external CWBI change score increases and decreases for all groups.

Table 7 shows that externals in the nonrelevant group were more likely to have an increase in wellness behaviors while internals had a tendency to show a wellness behavior decrease.

Table 7

Comparison of CWBI Change Scores
Between Internals and Externals

Group	Pre to Posttest Increase	Pre to Posttest Decrease	No Change	Total	Percent of Group
Experimental					
Internals	8	6	1	15	65%
Externals	3	5	0	8	35%
Nonrelevant Treatment					
Internals	1	11	0	12	46%
Externals	9	4	1	14	54%
Control					
Internals	9	5	0	14	45%
Externals	11	6	0	17	55%

A comparison was made between the internals and externals in each group to determine whether this factor could have influenced wellness behavior scores. Statistical analysis showed no association between CWLC pretest scores between all three groups. Percentage of internals and externals in each group displayed in Table 7 shows another picture. Though not significant, a similarity was seen in the percentages of internals and externals in the nonrelevant treatment group (46% internals, 54% externals) and control group (45% internals, 55% externals). The experimental group contained a greater percentage of internals than the other groups (65% internals, 35% externals).

Wellness locus of control change was also statistically compared between groups to determine a possible influence upon wellness behavior change. Statistical analysis showed no significant difference between the CWLC change scores between the three groups involved in the study.

CHAPTER V

Summary, Conclusions and Recommendations

Summary

The purpose of this research was to assess the effectiveness of a wellness education program on the wellness behaviors of fifth and sixth grade students attending Onalaska Middle School in Onalaska, Wisconsin. In order to accomplish this, a wellness education program and a wellness behavior inventory, The Children's Wellness Behavior Inventory (CWBI), were designed by the researcher.

A total of 80 subjects were involved in the study. Subjects were randomly assigned from three intact groups to participate in one of three treatments. The experimental group (N = 23) took part in a six-week wellness education program. The nonrelevant treatment group (N = 26) took part in a six-week first aid program. The control group (N = 31) received no treatment.

Another purpose of the study was to determine the effect of wellness locus of control upon wellness behavior change. The Children's Wellness Locus of Control Inventory (CWLC) was designed to accomplish this.

The experimental design consisted of the administration of two inventories as pretests and posttests eight weeks apart. In the weeks between pretests and posttests, each group received a different treatment. The experimental group and nonrelevant group took part in their respective education programs, while the control group subjects were assigned to a study hall. The treatment groups met once a week for fifty minutes.

Using the scores from both inventories wellness behavior change and locus of control orientation were compared between the three groups. The Mann-Whitney U-Test was used to determine statistical significance of the wellness education program in influencing wellness behavior change. Since $N > 20$ for all groups, U scores were converted to Z scores for reason of comparison. To assess the effect of wellness locus of control upon wellness behavior change, the Spearman Rank Correlation Coefficient was utilized for statistical analysis. Additional statistical analyses were applied to data to consider other factors that could influence wellness behavior change. The Spearman Rank Correlation Coefficient was used to test for a significant association between pretest wellness locus of control scores. To test for statistical difference between wellness locus of control change scores, the Mann-Whitney U-Test was utilized. U scores were converted to Z scores for reason of comparison since $N > 20$ for all groups. The level of significance for all statistical testing was set at $p \leq .05$.

Findings

The following findings are presented as they relate to the six null-hypotheses:

1. There was no significant difference in CWBI change scores between the experimental and control group.
2. There was a significant difference in CWBI change scores between the experimental and nonrelevant treatment group.
3. There was a significant difference in CWBI change scores between the nonrelevant treatment group and control group.

4. There was no significant association between internal-external locus of control orientation and CWBI change scores of the experimental group.
5. There was a significant association between internal-external locus of control orientation and CWBI change scores of the non-relevant group.
6. There was no significant association between internal-external locus of control orientation and CWBI change scores of the control group.

Additional findings are presented as they relate to those factors previously mentioned:

1. No significant association existed between the pretest CWLC scores of all three groups.
2. There was no significant difference between the CWLC change scores of all three groups.

Conclusions

Based upon the findings of the study, the following conclusions were drawn:

Wellness Behavior Change: The wellness education program was not conclusively shown to affect wellness behavior change. The group to show the greatest increase of CWBI change scores was the control group. The experimental group, which received the wellness education program, had the next greatest increase in CWBI change scores. Statistical analysis between these two groups showed the difference was not significant. In this comparison, the wellness education program was not effective at producing significantly greater wellness behavior change scores.

The CWBI change scores in the nonrelevant treatment group showed no increase at all. Instead, a general decrease in wellness behavior was reported by the subjects. Statistical analysis showed a significant difference in CWBI change scores between the experimental group and nonrelevant treatment group. Similarly, a significant difference was observed in CWBI change scores between the control group and the nonrelevant treatment group. Considering the scores of the three groups it is more reasonable to conclude that the significant difference was due to the decrease in CWBI change scores of the nonrelevant treatment group, and not to the wellness education program.

Since the wellness education program consisted of six sessions, this factor must be considered in determining why the program was not effective in changing wellness behaviors. Perhaps a greater number of sessions and more frequent meetings would have produced more significant results.

The CWBI change scores of the three groups were surprising and difficult to explain. Since the groups used in the study were intact, this could have had an influence. In addition, the total number of subjects involved was relatively small (N = 80). The trend for the decrease in scores among the nonrelevant treatment group, or the large increase in scores among the control group may have been prevented had a larger population or simple random sampling technique been used.

Perhaps the trends in scores were not due to the groups or the treatments but to the CWBI. For ease of scoring, many of the inventory statements were stated negatively. It was obvious to the researcher during administration of the CWBI that subjects were confused. Changing these statements to exclude negative wording could have eliminated the confusion and may have provided different results.

Wellness Locus of Control: Statistical analysis showed that internal-external locus of control orientation was not correlated to CWBI change scores of the experimental or control groups. A correlation was observed in the nonrelevant treatment group. External subjects in the nonrelevant treatment group were more likely to show increase in wellness behavior change. Conversely, internal subjects had a tendency to display a decrease in wellness behavior change. Since a correlation was not observed in the other two groups the significance of the nonrelevant treatment group results must be questioned. It could be the surprising CWBI change scores of the nonrelevant treatment group was responsible for this correlation.

Another factor that must be considered in explaining the nonrelevant treatment group inventory correlations is the nature of the treatment they received. The nonrelevant treatment was a series of first aid lessons. The aim of the first aid program was to demonstrate that students could effectively treat a variety of injuries. It is remotely possible that this approach motivated external subjects in the nonrelevant treatment group to improve wellness behaviors.

Pretest CWLC scores of each subject were compared to determine whether a difference of wellness locus of control scores between the groups could have influenced wellness behavior change. No significant associations were observed between the three groups in statistical analysis. However, comparison of percentages of the numbers of internals and externals in each group gave a different picture. The percentage of internals and externals in the nonrelevant treatment group and the control group were nearly identical. This factor didn't appear to

influence wellness behavior change since the statistical comparison of CWBI change between these groups were significantly different. The experimental group contained 20% more internals than the other two groups. However, this factor did not appear to make a difference in the comparison of wellness behavior change between the experimental and control groups since the CWBI change scores were not significantly different. As a result, it is unlikely that locus of control orientation had a significant influence upon wellness behavior change in this study.

Wellness locus of control change was observed to determine possible effect upon changes in wellness behavior. Statistical analysis showed no significant difference involved in the study. It is, therefore, assumed that wellness behavior change results obtained were not influenced by change in wellness locus of control.

One factor that was not considered in this study was extreme locus of control scores. Since extreme internality or externality is deemed to be detrimental (Rotter, 1966), the presence of extreme internal or external subjects in any group may affect results.

The reliability of the CWLC inventory was very low (.2233). As a result, scores obtained in the use of the CWLC instrument may also be unreliable. Use of a reliable measure of locus of control may have shown different results.

Recommendations

Based upon the findings and conclusions of this research, the following recommendations have been made:

1. The number of sessions and the time span between each class may have been responsible for a lack of significance between

the experimental CWBI change scores and the CWBI change scores of the control group. It is recommended for this age group that classes meet at least twice a week. Since many schools operate on a quarter system, a nine-week unit is suggested.

2. The use of intact groups in this study may have been responsible for the extreme results. It is, therefore, suggested that a similar study be conducted that involves simple random assignment of each subject to the three treatment groups.
3. The number of subjects involved in the study was small (N = 80). This study could be replicated using a larger population.
4. Several of the CWBI statements were stated negatively for ease of scoring by the researcher. After administering the tool to each group in pretest and posttest it was apparent that this was confusing to students. If this inventory is used, changing these statements to exclude negative wording will make them more understandable and, therefore, more consistent in measuring the responses students wish to convey.
5. The nonrelevant treatment (a first aid unit) could have influenced wellness behavior change. Therefore, a different educational program should be administered to determine the effectiveness of a wellness behavior program upon wellness behavior change.
6. Reliability of the CWLC was .2233. This value is extremely low. Further use of this instrument may establish a reliability that was not evident in that derived from the pilot.

7. Since the reliability of the CWLC is questionable, use of a reliable measure of locus of control could be used. Although it does not deal with the five dimensions of wellness, Parcel's Children's Health Locus of Control Inventory (1980) may prove to give more significant results.

REFERENCES CITED

Ardell, D. B. High Level Wellness. Emmaus, PA: Rodale Press, 1977.

Ardell, D. B. The nature and implications of high level wellness, or why "normal health" is a rather sorry state of existence. Health Values: Achieving High Level Wellness, 1979, 3 (1), 17-24.

Balch, P. and Ross, A. W. Predicting success in weight reduction as a function of locus of control: a unidimensional and multidimensional approach. Journal of Consulting and Clinical Psychology, 1975, 43, 119.

Beier, B. J. An assessment of the effectiveness of an education program on wellness attitudes and behaviors of tenth grade students. (Masters Thesis, University of Wisconsin - LaCrosse, 1979).

Bialer, I. Conceptualization of success and failure in mentally retarded and normal children. Ann Arbor: University Microfilms, 1960.

Bonaguro, J. Health lifestyle project; Health Education, 1979, 8-9.

Bruhn, J. G., Cordova, F. D., Williams, M. S., and Fuentes, R. G. Jr. The wellness process. Journal of Community Health, 1977, 2 (3).

Carpenter, D. Hospitals should be fitness centers. Hospitals, 1980, 148-154.

Champion, D. Basic Statistics for Social Research. U.S.A.: Chandler Publishing, 1970.

Crandall, V. C., Katkovsky, W. and Crandall, V. J. Children's Belief in their own control of reinforcements in intellectual-academic achievement situations. Child Development, 1965, 36, 91-109.

Crase, D., Hamrick, M., Rosato. Emerging consciousness: health, wellness, and a quality lifestyle. Health Education. 1979.

Dobbs, J. M. and Kirscht, J. P. Internal control and the taking of influenza shots. Psychological Reports, 1971, 28, 959-962.

Dunn, H. L. High Level Wellness. Virginia: R. W. Beatty, LTD., 1961.

Gibbons, J. D. Nonparametric Statistical Inference. New York: McGraw-Hill, 1971.

Gilmore, G. D. The development, implementation, and evaluation of a family health education program incorporating the concept of prevention. (Doctoral dissertation, University of Tennessee, 1974).

Gilmore, G. D. Planning for family wellness. Health Education, 1979, 12-16.

Goss, A. and Morasko, T. E. Relation between a dimension of internal-external control and the MMPI with an alcoholic population. Journal and Clinical Psychology, 1970, 34, 189-192.

Green, M. Adolescent health care. Children Today, 1979, 8, (5).

Gurin, P., Gurin, G., Lao, R. C., and Beattie, M. Internal-external control in the motivational dynamics of negro youth. Journal of Social Issue, 1969, 25, 29-53.

Harris, H. Wellness Training: why more and more organizations encourage trainers to "play doctor". Training-HRD, 1979, 25-28.

Hassett, J. Teaching yourself to relax. Psychology Today, 1978, 28-40.

James, W. Internal versus external control of reinforcement as a basic variable theory. (Doctoral dissertation, Ohio State University, 1957).

James, W. H., Woodruff, A. B., and Werner, W. Effect of internal and external control upon changes in smoking behavior. Journal of Consulting Psychology, 1965, 29, 184-186.

Janzen, H. L., and Beeken, D. An analysis of the applicability of the locus of control construct. The Alberta Journal of Educational Research, 1973, 19 (4), 295-301.

Johnson, E. K. and Chamberlain, J. M. The treatment of smoking as a self-defeating behavior. Journal of Psychology, 1978, 98 (1), 37-43.

Kaplan, G. D. and Cowles, A. Health locus of control and health value in the prediction of smoking reduction. Health Education Monographs, 1978, 6 (1), 129-137.

Kleinke, C. L. Self Perception, The Psychology of Personal Awareness. San Francisco: W. H. Freeman & Company, 1978.

Lefcourt, H. M. Internal versus external control of reinforcement: a review. Psychological Bulletin, 1966, 65, 206-220.

Lefcourt, H. M. Locus of control and response to aversive events. Canadian Psychological Review, 1976, 17 (3), 202-209.

Leonard, G. The search for health: from the fountain of youth to today's holistic frontier. New West, 1977.

Levine, D. M., and Green, M. Health education for hypertensive patients. Journal of American Medical Association, 1979.

Lewis, F. M., Morisky, D. E., and Flynn, B. S. A test of the construct validity of health locus of control: effects on self-reported compliance for hypertensive patients. Health Education Monographs, 1978, 6 (1), 138-148.

MacDonald, A. P., Jr. Internal-external locus of control change techniques. Rehabilitation Literature, 1972, 33, 44-47.

Milgram, N. A. Locus of control in negro and white children at four age levels. Psychological Reports, 1971, 29, 459-465.

Moses, J. How to recognize and work with wellness or lack of it -- in the classroom. Training-HRD, 1979, 30-34.

Nelson, B. Sweating at the company. Insight Magazine, supplement to the Milwaukee Journal, 1978, 10-21.

Nelson, D., and Linnehan, A. Interest in health education, a breakthrough. Health Values: Achieving High-Level Wellness. 1978, 2 (3), 149.

Parcel, G. S. and Meyer, M. P. Development of an instrument to measure children's health locus of control. Health Education Monographs, 6 (1), 1978.

Parcel, G. S., Nader, P. R., and Rogers, P. R. Health locus of control and health values: implications for school health education. Health Values: Achieving High Level Wellness. 1980, 4 (1), 32-37.

Phares, E. J. Changes in expecting in skill and chance situations. (Doctoral dissertation, Ohio State University, 1955).

Robinson, J. P., and Shaver, P. R. Measures of Social Psychological Attitudes. Ann Arbor, Michigan: Institute for Social Research, University of Michigan, 1973.

Rosenberg, S. G. Patient education leads to better care for heart patients. HSMHA Health Report, 1971, 793.

Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs: General and Applied, 1966, 80 (1) 1-25.

Rotter, J. B. Social Learning and Clinical Psychology. Englewood Cliffs, NJ: Prentice Hall, 1954.

Rotter, J. B. Some problems and misconceptions related to the construct of internal versus external control of reinforcement. Journal of Consulting and Clinical Psychology, 1975, 43, 56-57.

Rotter, J., Chance, J., and Phares, E. Applications of a Social Learning Theory of Personality. New York: Holt, Rinehart and Winston, 1972.

Runyon, R. P. and Haber, A. Fundamentals of Behavioral Statistics (3rd Ed.). Reading, MA: Addison-Wesley Publishing Co., 1977.

Ryckman, R. M. Theories of Personality. New York: D. Van Nostrand Company, 1978.

Saltzer, E. B. Locus of control and the intention to lose weight. Health Education Monographs. 1978, 6 (2), 118-128.

Schlegel, R. P., and Crawford, C.A. Multidimensional locus of control and drug use among high school students. Canadian Journal of Behavioral Science. 1978, 10 (2), 141-151.

Seeley, O. F. Field dependence-independence, internal-external locus of control, and implementation of family planning goals. Psychological Reports, 1976, 38, 1216-1218.

Shealy, N. C. 90 Days to Self Health,

Sheldon, D. S. Effects of the health activities project on student attitudes toward health. Health Education, 1980, 36-37.

Shirreffs, J. H. The relevance of health education to health activation and self care. Journal of School Health, 1978, 48, 419-422.

Siegel, Sidney. Nonparametric Statistics: For the Behavioral Sciences. New York: McGraw-Hill, 1956.

Stone, E. J. The effects of a health education curriculum on locus of control, perceived vulnerability, and health attitudes of fifth grade students. (Doctoral dissertation, University of New Mexico, 1977).

Straits, B. and Sechrist, L. Further support of some findings about the characteristics of smokers and nonsmokers. Journal of Consulting Psychologist. 1963, 27, 282.

Strickland, B. R. Locus of control: where have we been and where are we going? Paper presented at APA, Montreal, 1973.

Tookey, J. and Shirreffs, J. Future trends in health education. Health Education, 1980, 15-17.

Travis, J. W. Wellness Workbook. Mill Valley, California: The Wellness Resource Center, 1977.

Wallston, B. S., and Wallston, K. A. Locus of control and health: a review of the literature. Health Education Monographs, 6 (1).

Wallston, B. S., Wallston, K. A., Kaplan, G. D., and Maides, S. A. Development and validation of the health locus of control (HLC) scale. Journal of Consulting and Clinical Psychology. 1976, 44, 580-585.

Williams, A. F. Factors associated with seat belt use in families. Journal of Safety Research, 1972, 4 (3), 133-138.

Williams, A. F. Personality Characteristics associated with preventive dental health practices. Journal of American College of Dentistry, 1972, 39, 225-234.

Williamson, M. H. An assessment of the effectiveness of an educational program on wellness attitude and behaviors of graduate students. (Masters Thesis, University of Wisconsin - LaCrosse, 1978.)

Wynne, E. A. Behind the discipline problem: youth suicide as a measure of alienation. Phi Delta Kappan, 1978, 59, 307-315.

Zemke, R. Try behavioral contracts and feedback training. Training-HRD, 1979, 32-34.

APPENDICES

APPENDIX A

APPENDIX A

March 21, 1980

Ms. Barbara Beier
Health Education Department
University of Wisconsin - LaCrosse
LaCrosse, Wisconsin 54601

Dear Ms. Beier:

I am presently involved in research for my Masters Degree thesis in the Health Education Department at the University of Wisconsin - LaCrosse. In my research I am attempting to assess the wellness locus of control of fifth grade students in a health education class.

As part of my study I have found it necessary to develop an inventory which will enable me to measure student locus of control in the five dimensions of wellness. I would like to request your assistance in evaluation of this inventory regarding its content.

I have enclosed a copy of the inventory with an evaluation device. I would very much appreciate your willingness to assist in this evaluation. I have enclosed a self-addressed, stamped envelope for your convenience.

I realize how valuable your time is and want to express a special thanks to you.

Sincerely,

Dawn Graff

Dawn Graff

Enclosures

APPENDIX B

INVENTORY RATING SCALE

INVENTORY RATING SCALE[1]

Directions: Enclosed is a list of statements regarding wellness locus of control. Please read each statement and use the scale below to indicate its acceptability, based on the degree to which the statement will reveal the subject's locus of control (internal or external) in regard to wellness. (Subjects responding to the inventory will be indicating an internal or external locus of control for the behavior listed in each statement.) In this manner you will be judging locus of control validity of these behavior statements with respect to wellness. The inventory has been developed for use with fifth grade students.

The scale values are defined as follows:

1. NOT ACCEPTABLE: The item has no value as a statement for measuring the subject's locus of control for the wellness behavior.

2. SOMEWHAT ACCEPTABLE: The item has some value as a statement for measuring the subject's locus of control for the wellness behavior.

3. ACCEPTABLE: The item is valuable as a statement for measuring the subject's locus of control for the wellness behavior.

4. VERY ACCEPTABLE: The item is very valuable as a statement for measuring the subject's locus of control for the wellness behavior.

5. INDISPENSABLE: The item is absolutely necessary as a statement for measuring the subject's locus of control for the wellness behavior.

[1]The scale was developed by Dr. Gary Gilmore for use in his doctoral dissertation, The Development, Implementation, and Evaluation of a Family Health Education Program Incorporating the Concept of Prevention, the University of Tennessee, June 1974.

APPENDIX C

JUROR LIST

APPENDIX C

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APPENDIX D

CHILDREN'S WELLNESS LOCUS OF CONTROL INVENTORY

WELLNESS LOCUS OF CONTROL

This is not a test. I am just trying to find out how kids your age feel about your health. There are no right or wrong answers to these statements. For every statement there are large numbers of people who agree or disagree. Please tell whether you agree or disagree with each statement as follows:

Circle SA if you Strongly Agree
Circle A if you Agree.
Circle D if you Disagree.
Circle SD if you Strongly Disagree.

Please read each statement carefully and tell which way is closest to the way that you feel. Do not skip any of the statements.

	Circle Only One			
STRESS MANAGEMENT				
1. I manage problems better when I get 8 to 10 hours of sleep.	SA	A	D	SD
2. Taking time to rest each day helps me avoid illness.	SA	A	D	SD
3. I can avoid nervous habits like biting my fingernails.	SA	A	D	SD
4. People who don't have problems are lucky.	SA	A	D	SD
5. I can manage many problems by myself.	SA	A	D	SD
PERSONAL HEALTH AND SAFETY				
1. I can help prevent cavities by brushing my teeth regularly.	SA	A	D	SD
2. I avoid smoking so chances are I will not get lung cancer.	SA	A	D	SD
3. I do not think people need drugs or alcohol in order to feel good.	SA	A	D	SD
4. There are things I can do to prevent accidents.	SA	A	D	SD
5. It is the teacher's job to keep me from having accidents at school.	SA	A	D	SD
SELF RESPONSIBILITY				
1. I am more likely to stay well if I take care of myself.	SA	A	D	SD

STRONGLY AGREE SA | AGREE A | DISAGREE D | STRONGLY DISAGREE SD

CIRCLE ONLY ONE

2.	No matter what I do, if I am going to get sick, I will get sick.	SA	A	D	SD
3.	Only my doctor knows what is best for my health.	SA	A	D	SD
4.	The thing or person most responsible for my health is me.	SA	A	D	SD
5.	There is nothing I can do to keep from getting sick.	SA	A	D	SD

NUTRITIONAL AWARENESS

1.	Eating a variety of nutritious foods helps me to stay healthy.	SA	A	D	SD
2.	No matter how well I eat I still get sick.	SA	A	D	SD
3.	Just because I eat well does not mean I will be healthy.	SA	A	D	SD
4.	Sometimes I get sick because I do not eat right.	SA	A	D	SD
5.	Being the right weight is a matter of good luck.	SA	A	D	SD

PHYSICAL FITNESS

1.	Getting physical activity each day helps me to build and maintain good health.	SA	A	D	SD
2.	Exercise helps me to be fit.	SA	A	D	SD
3.	People who are physically fit are just lucky.	SA	A	D	SD
4.	There is nothing I can do to be physically fit.	SA	A	D	SD
5.	It is my teacher's job to see I get enough exercise each day.	SA	A	D	SD

APPENDIX E

CHILDREN'S WELLNESS BEHAVIOR INVENTORY

WELLNESS BEHAVIOR INVENTORY

Directions: Please read each of the following statements. Tell whether the statement is never true for you, usually true for you, or always true for you by making a check (✓) in one of the three spaces. Please do not skip any statements.

STRESS MANAGEMENT	NEVER	USUALLY	ALWAYS
1. At bedtime I fall asleep easily.	____	____	____
2. I take 10 to 20 minutes a day for myself to do whatever I want.	____	____	____
3. I make sure I take time each day to relax.	____	____	____
4. I rarely feel tired out (except after hard physical activity).	____	____	____
5. I am happy with my life.	____	____	____

PERSONAL HEALTH AND SAFETY			
1. I use dental floss.	____	____	____
2. I do not smoke cigarettes.	____	____	____
3. I have fewer than three colds a year.	____	____	____
4. I collect papers, cans, glass or other things that can be recycled.	____	____	____
5. I wear a safety belt when I ride in a car.	____	____	____

NUTRITIONAL AWARENESS			
1. I drink fewer than five soft drinks a week.	____	____	____
2. I do not add salt to my food after it is on my plate.	____	____	____
3. I rarely need medicine.	____	____	____
4. I do not eat sugared cereals for breakfast.	____	____	____
5. I avoid eating fried foods.	____	____	____

FEELINGS/SELF RESPONSIBILITY	NEVER	USUALLY	ALWAYS
1. It is easy for me to laugh.	____	____	____
2. I have at least five close friends.	____	____	____
3. I look forward to the future.	____	____	____
4. I think it is o.k. to feel anger, fear, joy or sadness.	____	____	____
5. I would seek help from parents, friends or a teacher if I had a big problem.	____	____	____

PHYSICAL ACTIVITY			
1. I often ride my bike, run or walk for exercise.	____	____	____
2. I like to exercise.	____	____	____
3. I have enough energy to get through daily activities.	____	____	____
4. I avoid riding in a car when I am going within walking distance.	____	____	____
5. Physical activity is a part of my life.	____	____	____

APPENDIX F-1

WELLNESS EDUCATION PROGRAM

APPENDIX F-1

WELLNESS EDUCATION PROGRAM

Introduction

The purpose of the wellness education program was to introduce the concept of wellness. Each of the five dimensions of wellness (self-responsibility, nutritional awareness, physical fitness, stress management, and environmental sensitivity) are necessary for achieving a lifestyle in well-being. The population receiving the wellness education program was a group of fifth and sixth graders attending Onalaska Middle School. The format and content of the program was developed for weekly 50-minute lessons that were presented over six weeks.

Program Content

The following outline provides the content of the wellness education program.

I. Introduction to Wellness Concept

A. Personal interest:

The researcher's interest in the wellness concept is based on exposure to readings in literature as a health educator, and later through workshops and educational presentations and additional research as a graduate student at the University of Wisconsin - LaCrosse. Desire for an understanding of factors motivating a positive approach toward acquiring healthy habits of students encouraged further study. Health benefits resulting from personal application

of the concept culminated in a true committment to pursuing a wellness lifestyle.

B. Definitions of Wellness

1. A Wellness slide presentation was presented.
2. Following the slife presentation followed discussion of these aspects:
   a. What is wellness?
   b. What do these words mean:
      --a concept
      --a process
      --a value
      --a lifestyle
   c. How can wellness be all these things?
   d. What are the five dimensions of wellness?
3. Wellness workbooks were handed out. Each consisted of the handouts and journal questions that would be used over the six weeks.
4. On page one (Appendix F-2), students were instructed to write down their idea of wellness.
5. On page two, (Appendix F-3) Dunn's Wellness Symbol was explained and students were told to think about what their symbol might look like.

C. Difference between wellness and good health.

1. Using an overhead projector, students were shown a transparency master (Appendix F-4) statements that compared wellness and good health.

II. The Wellness Process

A. The wellness continuum. On an overhead transparency the wellness continuum (Appendix F-5) was explained in the following way:

1. At the center of the scale at 0 absence of illness is shown.
2. Moving from the center to the left shows a worsening state of health.
3. Moving toward the right on the scale shows a more positive state of health, personal growth, and full-fillment of personal potential.
4. Traditional medicine has been directed at curing disease. Because of this, the patient is only brought up to the zero point, to where there is no disease.
5. In wellness people go beyond being patients and cross the zero point. They do this through educating themselves to an understanding of their basic emotional and physical needs and learning how to get those needs met.

B. Finding a place on the wellness continuum. The wellness continuum was also reproduced on page three of the student workbooks (Appendix F-6). Students were instructed:

1. Write words, draw, or cut out things that contribute to worseness and put them on the left side of the page.
2. Write, draw, or cut out things that contribute to wellness and put them on the right side of the page.
3. Show where you are on this wellness continuum.

III. The Wellness Dimensions

A. Self-Responsibility

1. Peer pressure activity. The activity was conducted as follows:

a. Ask for five volunteers from class and have them sit around a table.

b. Distribute index cards with instructions. Tell them not to show the instructions to anyone else.

--three of the students will receive instructions that read, "Take one wellness cookie, eat it slowly, and try to persuade everyone else to."

--one student will receive a card that states "wait two minutes, then take a cookie."

--the last student's instructions will say, "Do not take a cookie, no matter what."

c. Discussion:

--(to last student) how did you feel being persuaded to so something you were told not to do?

--(to student 4) how did you feel giving in?

--(to student 5) how did you feel when that person gave in?

--(to others) how did you feel persuading everyone?

--(everyone) does this ever happen in real life? How can you deal with this? Who makes your decisions?

2. Showed film: Trying Times.

3. Assignment: On the continuum of Self-Responsibility (Appendix F-7):

   a. Placed the number of each trait next to where they were on the continuum.

   b. Ask students how they felt about these responses. Display this as follows:

      --place a star next to those you feel good about.

      --place an O next to those you'd like to change.

      --underline the one you'd most like to change.

   c. Ask what kinds of things could be done to improve placement on this continuum.

B. Nutritional Awareness

1. Nutritional Assessment. Students were asked to keep track of what they ate for one week (Appendix F-8).

   a. Review of four food groups.

   b. Students used colored pens or crayons to identify foods eaten according to their food group:

      Green = fruit and vegetable

      Brown = bread and cereal

      Yellow = milk

      Red = meat

      Blue = empty calorie foods

   c. Students wrote the number of foods eaten from each group in a total to determine if nutritional needs were met according to the following daily guidelines:

4 servings from fruit and vegetable

4 servings from bread and cereal

3 to 4 servings from milk

2 servings from meat

d. Discussion was based on the following questions:

1. On an average, how close do you come to meeting your nutritional needs daily?

3. Demonstrated biofeedback equipment. Explained physiological changes associated with stress.

a. This was demonstrated by tensing frontalis muscles while attached to a biofeedback monitoring device.

b. Relaxation techniques were demonstrated to decrease muscle tension.

4. Practiced Benson's relaxation technique. Directions were given as follows:

a. Find a comfortable position sitting in your chair with your feet on the floor and hands in your lap or lying on your back on the floor.

b. Close eyes (not tightly).

c. Exhale. Each time you exhale, say the word "one".

d. Inhale slowly.

e. Repeat.

5. Brainstormed and discussed other relaxation techniques.

D. Physical Fitness

1. Value Voting. Students were asked to raise their hands to certain questions:

a. How many of you:

--got enough sleep last night?

--get some exercise everyday?

--think jogging is dumb?

--think being able to move quickly and easily is important to being fit?

--would rather play than watch a sport on TV?

--plan on exercising today?

2. Students drew large pictures of themselves on a piece of paper. They labeled the following as they saw fit for themselves. Following this, they shared their drawing with another person.

a. slums

b. urban-renewal projects

c. Power plants

d. population center

e. uncharted lands

f. recreation areas

g. what to show tourists

h. natural resources

3. Practice taking pulse

a. Write down resting pulse rate.

b. Jog in place for one minute.

c. Take pulse and write it down.

d. Compare and discuss:

--big differences in resting and active heart rate may be due to poor fitness level or high rate of energy expenditure.

4. How do I Like Me Continuum?

5. Basic principles of safe and effective exercise programs for well-being were discussed.

6. Film: Physical Fitness: It Can Save Your Life

E. Personal Health and Safety

1. The class was divided in half and was told to form two circles, one within the other, students facing one another. The following questions were read for the students to answer. (After each question the inner circle moved one person to the left.)

   a. What would you do if your friend got drunk often -- about once a week?

   b. What are some of your concerns about marijuana?

   c. What can we do to get people to stop smoking cigarettes?

   d. Why do you think smoking and drinking rates are increasing among teens?

   e. What would you say to a friend who wanted to try angel dust?

2. Students were then instructed to get into four groups.

   a. One was told to discuss and list adjectives and adverbs that describe personal health habits that contribute to wellness.

   b. Group two was instructed to discuss and list adjectives and adverbs that described safety habits that contribute to wellness.

c. Group three was told to discuss and list adjectives and adverbs that describe personal health habits that contribute to worseness.

d. Group four was instructed to discuss and list adjectives and adverbs that described safety habits that contribute to worseness.

IV. A Wellness Lifestyle

A. Personal Assessment

1. Students kept a weekly log. They were instructed to write down all the wellness behaviors they practiced among each of the five wellness dimensions.

2. Each week, students completed a Wellness Evaluation Sheet according to their journal entries (Appendix F-10).

B. Committment to Change

1. On the Wellness Evaluation Sheet, students were asked what behavior they would like to change (Appendix F-10).

V. Personal Growth

A. Students discussed their personal wellness definitions.

B. Students shared ideas for promoting wellness in their lives.

APPENDIX F-2

STUDENT'S DEFINITION OF WELLNESS

APPENDIX F-2

Definition

What do you think wellness is?

WELLNESS IS:

What is each dimension all about:

Stress Management

Nutritional Awareness

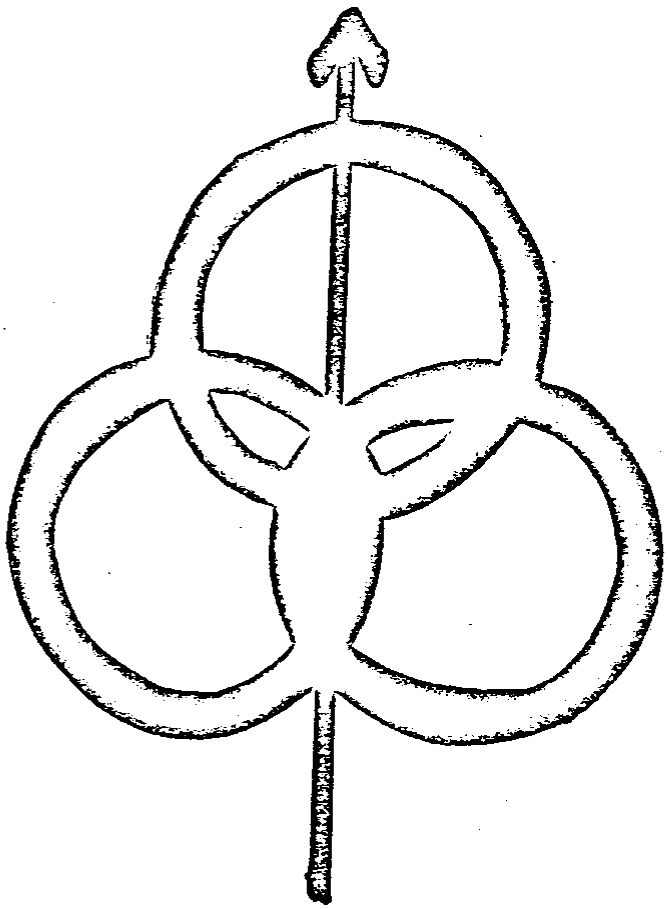
Self-Responsibility

Physical Fitness

Environmental Sensitivity

APPENDIX F-3

HIGH LEVEL WELLNESS SYMBOL



High Level Wellness Symbol

The three interlocking circles stand for the body, mind, and spirit of man as an interrelated whole. The dart is a symbol of the life cycle of the person as he works to achieve his purpose in living and grows in wholeness toward reaching his goals.

APPENDIX F-4

WELLNESS VS. GOOD HEALTH

APPENDIX F-4

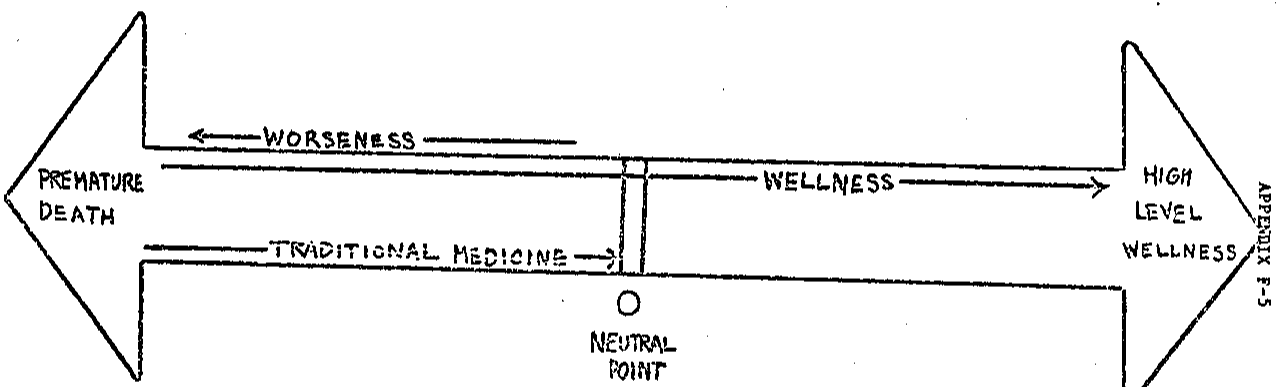
Wellness vs. Good Health

A never-ending process	the way you feel at a certain time
something you always work toward	something you try to get back when you don't feel well
Involves the whole person: physical emotional social intellectual spiritual	though this also involves the whole person, many people are only concerned with their physical selves

APPENDIX F-5

OVERHEAD TRANSPARENCY -- WELLNESS CONTINUUM

The center of the scale at "0" shows the absence of illness. Moving from the center toward the left shows a worsening state of health. Moving toward the right on the scale shows a more positive state of health, personal growth and fullfillment of personal potential.



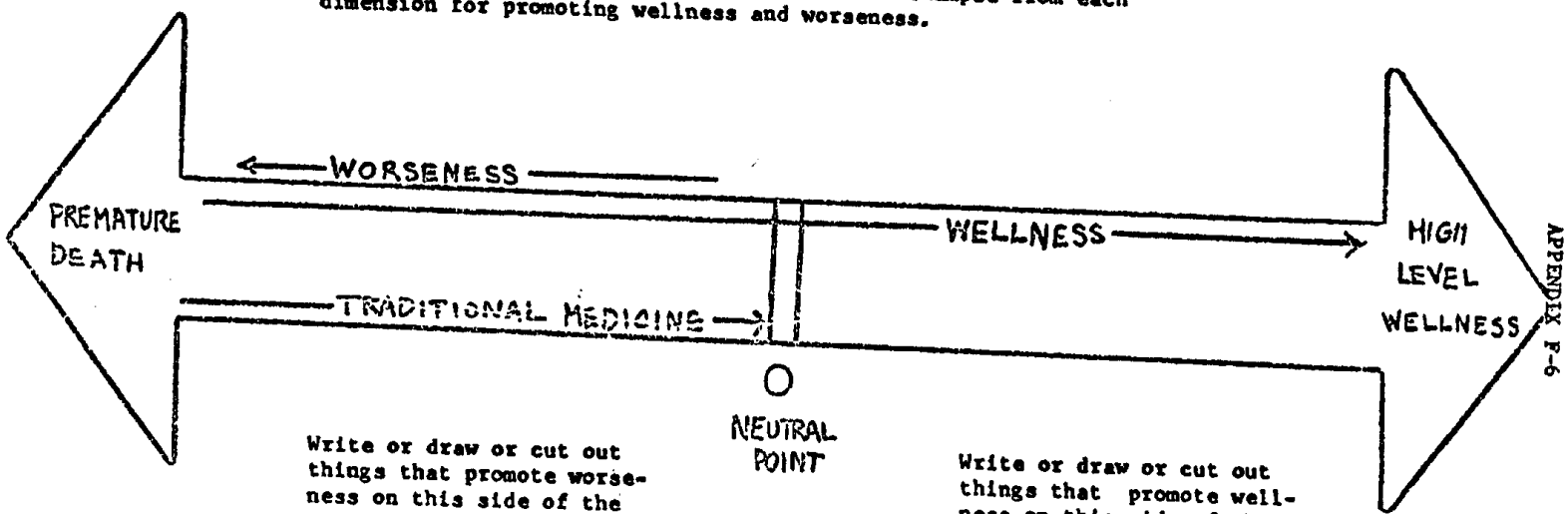
Traditional medicine has been directed at curing disease. Because of this, the patient is only brought up to the zero point, to where there is no disease.

In wellness, people go beyond being patients and cross the "0" point. They do this through educating themselves to an understanding of their basic emotional and physical needs and learning how to get those needs met.

APPENDIX P-6

WELLNESS CONTINUUM

Additional instructions: try to include one example from each dimension for promoting wellness and worseness.



Write or draw or cut out things that promote worseness on this side of the page.

Write or draw or cut out things that promote wellness on this side of the page.

APPENDIX F-7

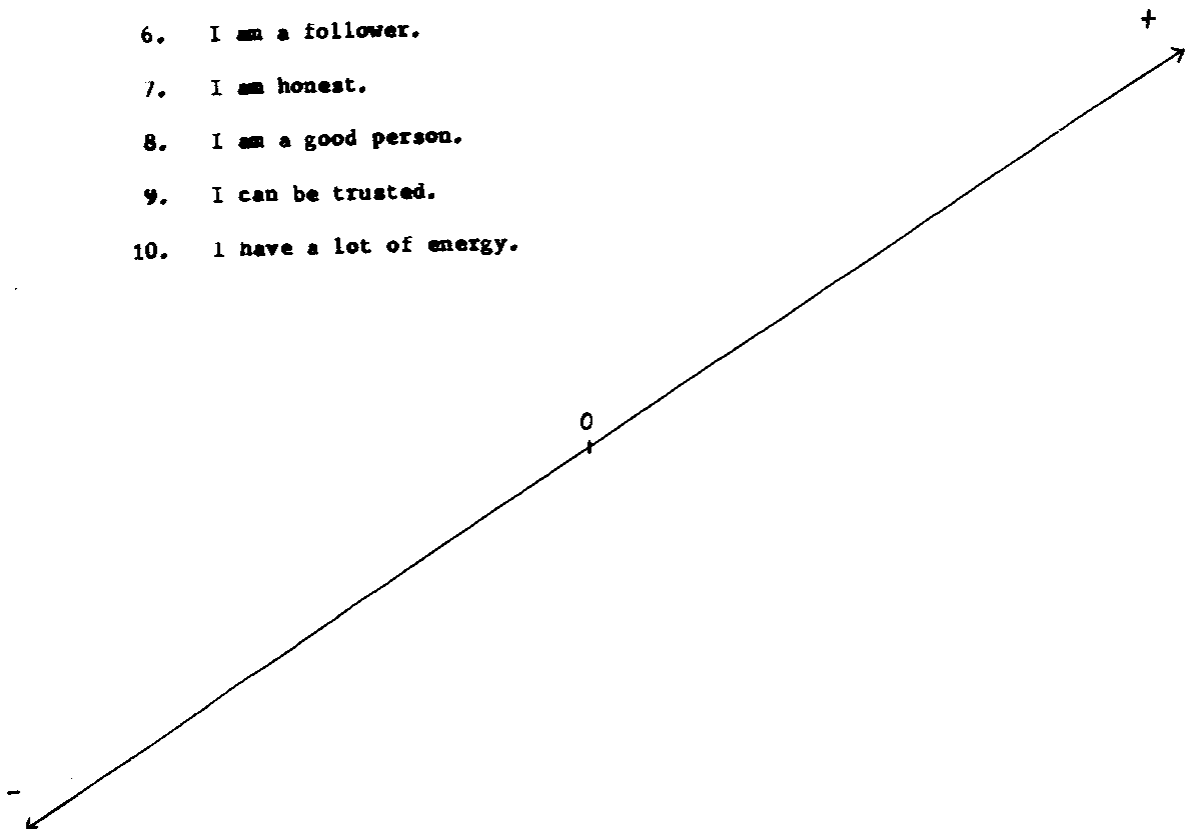
CONTINUUM OF SELF-RESPONSIBILITY

APPENDIX F-7

Continuum of Self-Responsibility

Place the number of each trait next to the position that best applies to you:

1. I feel good about myself.
2. I get along with people.
3. I like my looks.
4. I am myself.
5. I am considerate of others.
6. I am a follower.
7. I am honest.
8. I am a good person.
9. I can be trusted.
10. I have a lot of energy.



APPENDIX F-8

Weekly Nutrition Log

Appendix F-8

Weekly Nutrition Log

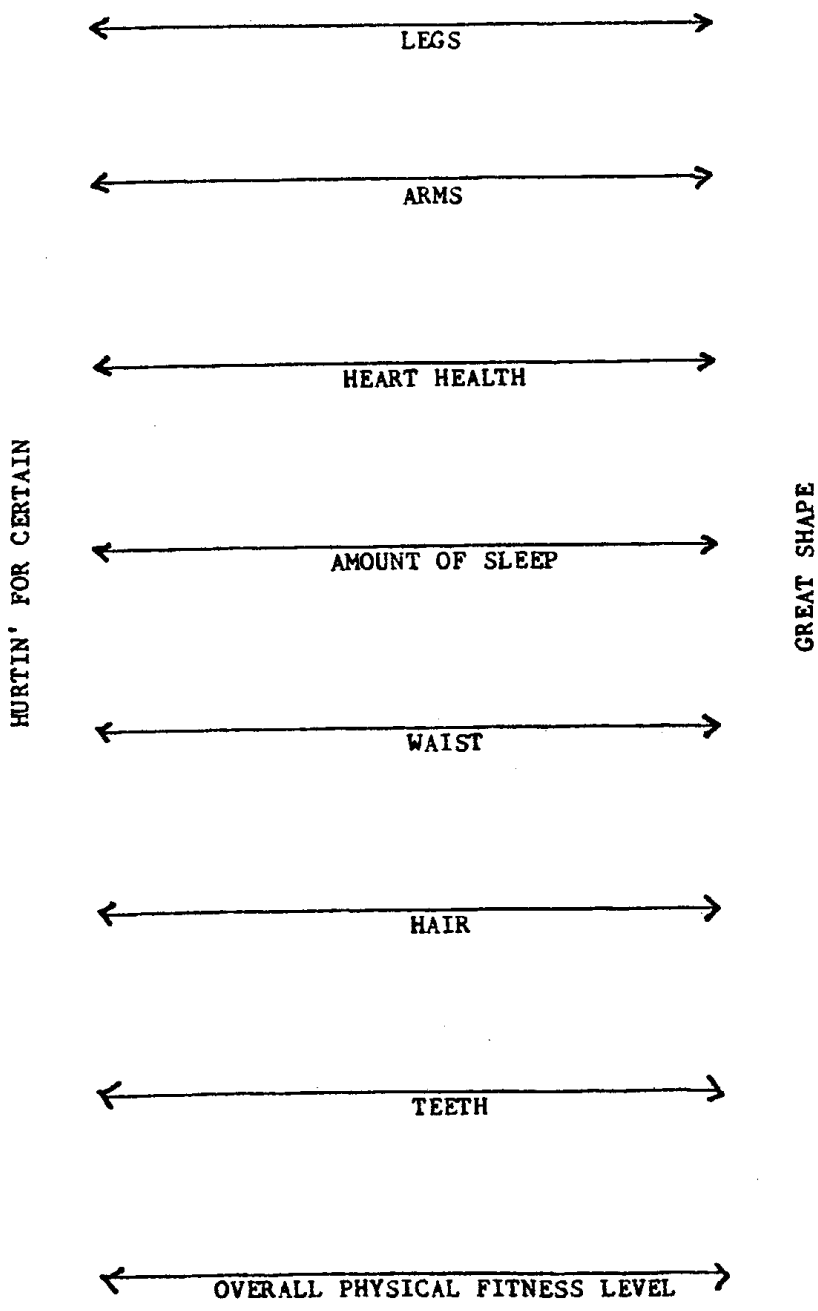
	BREAKFAST	LUNCH	DINNER	SNACKS	TOTAL Fruit & Veg / Bread & Cereal / Milk / Meat
TUESDAY					
WEDNESDAY					
THURSDAY					
FRIDAY					
SATURDAY					
SUNDAY					
MONDAY					

APPENDIX F-9

HOW DO I LIKE ME?

APPENDIX

HOW DO I LIKE ME?



APPENDIX F-10

WELLNESS EVALUATION SHEET

APPENDIX F-10

Wellness Evaluation Sheet

1. What was my major goal last week?
2. What feelings was I aware of last week?
3. Something about myself that I found I really liked was:
4. A behavior of mine I would like to change is:
5. Something that caused my stress was:
6. One way that I handled stress was:
7. Something I read about a healthy lifestyle this week was:
8. One way that my diet improved was:
9. In what ways did I choose to exercise?
10. How did I choose to relax?
11. Something that I did just for me was:

APPENDIX G

PARENTAL CONSENT LETTER AND FORM

APPENDIX G

April 2, 1980

Dear Parents:

One of the fifth and sixth grade classes at Onalaska Middle School has been selected to participate in a special program in health education class. The program will be involved with learning about healthy lifestyles and will be taught by Dawn Graff, a health teacher and graduate student in health education.

Participation in the program will involve meeting once a week for eight weeks as a part of regualrly scheduled health class. Students will be tested at the beginning and end of the unit to determine any changes in knowledge and attitude about health. The program will begin Tuesday, April 8, 1980 and will run through May 27, 1980.

Enclosed is a parent consent form. Please fill it in and return with your child by Tuesday, April 8, 1980. If you have any questions, please feel free to contact Mr. Pollack at 783-5366.

Sincerely,

Dawn Graff
Health Teacher

Dr. Robert Weber
Principal

Mr. John Pollack
Health Teacher

PLEASE RETURN THE BOTTOM PORTION WITH YOUR CHILD BY APRIL 8, 1980

I hereby give my consent for _____ to participate in the "Healthy Lifestyle" program.

_____
Parent's signature