

The development and implementation of the health enhancement curriculum
by Timothy Allen Dunnagan

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Physical Education
Montana State University
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Abstract:
The purpose of this study was to develop a curriculum for physical activity that increases adherence to exercise within a wellness program. The curriculum was implemented and modified on three separate occasions to ensure that the model was workable within a naturalistic setting. The investigator used a variety of qualitative and quantitative evaluation techniques, although the majority of the data were derived from qualitative research methods. Several meaningful changes took place as a result of this investigation that were not related to exercise adherence. These conclusions are described in terms of meaningful changes for the participant, the instructor, and the curriculum.

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A thesis submitted in partial fulfillment
of the requirements for the degree

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in

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This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

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I would like to dedicate this thesis to my mother, father, grandmother, and wife. Without your unquestioning support of my educational pursuits this paper would not have been possible. More importantly, all of you have helped me find my mission in life. I thank you all, and I love you very much.

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# ABSTRACT

The purpose of this study was to develop a curriculum for physical activity that increases adherence to exercise within a wellness program. The curriculum was implemented and modified on three separate occasions to ensure that the model was workable within a naturalistic setting. The investigator used a variety of qualitative and quantitative evaluation techniques, although the majority of the data were derived from qualitative research methods. Several meaningful changes took place as a result of this investigation that were not related to exercise adherence. These conclusions are described in terms of meaningful changes for the participant, the instructor, and the curriculum.

# CHAPTER 1

## INTRODUCTION

The purpose of this curriculum is to develop and maintain adherence to exercise. This curriculum is needed because our economic structure can no longer afford to absorb the health care costs of a society that has for years contributed to negative lifestyle habits (Gastin and Shepard, 1984). The negative habit that this curriculum is concerned with is sedentary lifestyle. The United States Center for Disease Control (CDC) in 1979 concluded that 48% of all deaths are caused by lifestyle related diseases, and only 12% are diseases that traditional medicine can treat (United States Department of Health and Human Services, Public Health Services, Centers of Disease Control, 1979). "In 1980, the United States' employers paid over 60 billion dollars in premiums for employees' health care insurance, a cost that escalates at 16% a year for the same benefits" (O'Donnell and Ainsworth, 1984). Regular exercise has been identified as one of the seven basic healthy lifestyle habits (Belloc N., and L. Breslow, 1972).

Currently, 50-70% of the United States' population is not physically fit (O'Donnell and Ainsworth, 1984). This is significant because many degenerative diseases are associated with poor physical fitness. For example, a sedentary lifestyle has been associated with cardiovascular disease (Wilson, P., Fardy, P., and V. Froelicher,

1981). Cardiovascular disease in the United States has a total cost of 50 billion dollars a year (Stamler, J. 1973). Granted, physical fitness is not a panacea for all of the nation's health care problems. There are many critical health related problems that cannot be solved through lifestyle modification, and, it is naive for the public or the government to think that this is true (Ingham, 1985). However, the author believes that given the severity of the diseases and financial problems related to negative lifestyles, it is necessary to develop programs that can change negative lifestyles. Physical fitness is part of the necessary lifestyle change. The Health Enhancement Curriculum was developed to effectively and ethically bring about this change.

Because the intent of the curriculum is to change society, its value orientation is clearly social reconstruction. This orientation is based on three assumptions. First, it is assumed that societal change can most effectively be brought about by meeting the needs of the individual. The notion of the individual as the primary consideration in causing social reconstruction is different from the explanation given by Bain and Jewett (1986). The authors stated that "societal needs take precedence over individual needs." However, the author looks at societal change from a different perspective, the perspective is that significant societal change can take place if enough individuals' needs are collectively met.

Secondly, it is assumed that adherence to exercise can be increased if the participant is given the responsibility to make decisions regarding why and how they want to exercise. For years,

professionals in the area of physical fitness have been in the business of giving participants an exercise prescription. The concerns of the prescription were proper intensity, duration, frequency and mode (ACSM, 1978). Very little emphasis was given to helping the participants decide what mode of activity would be best for them. With this type of approach, exercise programs have dropout rates of approximately fifty-percent after six months (Dishman, 1982). Also, this approach can develop participant dependency on the instructor and/or the program. It is therefore assumed that the participants should be guided into deciding why and how they want to participate in physical activity. If this responsibility is given to the participant instead of the instructor, adherence rates will be increased and a more internal health locus will be developed by the participant.

Thirdly, the curriculum goals will be facilitated through a combination of adherence techniques. The possible techniques for increasing exercise adherence are numerous (Shepard, 1985; Dishman, 1986). This instructor currently can choose from seventeen different adherence techniques. These methods were picked because they are the most effective techniques available in the current adherence literature. The exact techniques that are used will depend on individual and group needs. Therefore, the techniques used must be specific to the individual and the setting where the curriculum is being implemented.

In conclusion, it is important to emphasize that the Health Enhancement Curriculum was developed because of a societal need. Our

country must take the responsibility for changing negative lifestyle habits. These poor habits have been developed and promoted by society for many years. It is, therefore, wrong to expect that individuals will make the necessary changes on their own. The individual needs the support and direction of the country's educational systems, businesses, and government. The Health Enhancement Curriculum is designed to help meet this need. The program was designed to change one aspect related to the overall problem; i.e. sedentary lifestyles.

## Statement of the Problem

The purpose of this study was to develop a curriculum for physical activity that increased adherence to exercise in a wellness program. The curriculum was implemented, tested and modified within a naturalistic setting to ensure that the model was workable. The primary evaluation techniques used to facilitate this process were qualitative in nature.

# CHAPTER 2

## REVIEW OF LITERATURE

It is well documented that regular exercise programs of the proper intensity, duration, frequency and mode can bring about positive physiologic (McArdle et al., 1981) and psychologic (Mihevic, 1982) adaptations. Also, there is evidence that the physically fit employee is more productive, absent from work less, and uses fewer health care dollars than the unfit employee (Howell, 1985). However, employee fitness programs are only able to recruit from twenty to fifty percent of the eligible participants (Wankle, 1984; Song, T., Shepard, R., and M. Cox, 1983). Investigators have shown that thirty to seventy percent of those who are recruited drop out from their exercise program (Morgan, Shepard, Finucane, Schimmelfing, and Jazmaji, 1984; Dishman, et al., 1980; Dishman, 1982; and Gettman et al., 1983). Typically, adult fitness programs average a fifty percent dropout rate after six to twelve months (Dishman, 1986, Shepard, 1985; Song et al., 1983). Therefore, it would appear that the methods used for recruitment and development of adherence to adult fitness programs are problematic. This review will focus on the relevent literature related to exercise adherence in adult fitness programs.

Several researchers have investigated factors related to predicting dropout from exercise programs (Norrid, 1984, 1986; Maddocks, 1983; and Dishman, 1980). Other researchers have

investigated factors related to exercise recruitment (Mirotznik, Speedling, Stein, and Bronz, 1985; Gale, Eckhoff, Mogel, and Rodnick, 1984). Overlap exists in the research that has been conducted in the areas of prediction, recruitment, and adherence to physical activity. This is especially true with adherence and prediction of dropout from adult exercise programs. Therefore, factors related to prediction will also be incorporated into the review. Information relating to exercise recruitment does not significantly apply to adherence. Consequently, this area of study has been omitted. The review of literature has been divided into three major sections: biological, psychological, and instructional aspects of exercise adherence.

## Biological Factors

Several biological influences have been associated with exercise adherence. Gale and associates (1984) found that more physically fit women and less physically fit men adhered more regularly to a six month exercise program. Mirotznik and associates (1985) found that lower levels of fitness and excessive weight were associated with poor adherence rates in a cardiovascular fitness program. Allen (1984, 1986) also found that the less fat individual was more likely to adhere to an exercise program. Dishman (1981) concluded that the leaner, lighter, less fit individuals were more likely to adhere to a "long term" exercise program. However, he concluded that these variables alone provide little predictive potential for determining "dropout-proneness" in a clinical setting. Oldridge and associates (1983) found that duration and intensity of exercise was not a factor

in determining exercise adherence. However, smokers were found to be two and one-half times more likely to dropout than non-smokers. Also, blue collar workers were one and one-half times more likely to drop out than white collar workers.

Finally, investigators concluded that the participants' somatotype and body composition need to be considered in implementation and activity selection (Shepard, 1985; Ward, and Groppel, 1980). It has been shown that proper activity selection and progression can decrease participant injury rates (Miritznik, et al., 1985, Oldridge, 1977). Activity related injuries have been estimated at causing 17-34% of all dropouts from aerobic activity (Wankel, 1985; Pollock, Gettman, Milesis, Bah, Durstine, and R. Johnson, 1977).

## Psychological Factors

Most of the exercise adherence research has incorporated behavioral and psychological techniques (Biddle, et al., 1985; Powers, et al, 1985; Riddle, 1980; Kircher, 1984; Allen, 1984/1986; Martin, Dubert, Katell, Thompson, Raczynski, Lake, Smith, Webster, Sikora, and Cohen, 1984; Morgan, et al., 1984; Dishman, et al., 1980; Keefe, 1980; Wysocki; 1979). These variables are divided into four sections: attitudes and beliefs, participant perceptions, motivation, and support systems.

### Attitudes and Beliefs

Powers, and Associates (1985) found a positive relationship between attitudes towards physical activity, health value, physical

fitness value and exercise adherence. The investigators also found a negative correlation between those participants who had an external health locus of control (the participant attributes his/her health to chance and powerful other) and exercise adherence. The authors concluded that of the variables researched, attitudes toward physical activity was the strongest indicator of exercise behavior. Similarly, Sonstroem (1973) discovered that individuals who had more internal health locuses and favorable attitudes towards physical activity reported significantly greater amounts of voluntary physical activity. However, McCready and Long (1985) found that the combined effects of health locus of control and attitudes towards physical activity were not related to exercise adherence. According to this study the only factors that were associated with exercise adherence were exercising for social continuation and catharsis.

Participant Perceptions

Morgan (1984) found that those participants who perceived themselves as initially healthy were more likely to maintain a regular exercise program. The participants who did not adhere as well to the program found exercise to be "less fun and more discipline". Riddle (1980) found that the non-exercisers in a jogging program perceived that exercise required too much discipline, time, and made them too tired. Several other authors have shown that perceived inconvenience (i.e. inconvient facility location, inadequate parking, dissatisfaction with the ridged schedule, lack of energy) and lack of time are major reasons for program dropout (Dishman, 1986: Wankel,

1985; Shepard, 1985; Goodrick et al., 1984; Morgan et al., 1984; Gettman et al., 1983; and Andrew et al., 1981).

Motivation

Motivation has been identified as a critical factor in the development of exercise adherence (Shepard, 1985; Ice, 1985; Dishman, et al., 1980). Many investigators simply asked the participants what they perceived as motivating them to exercise. An excellent summary of these "perceived motivators" is given in a review article by Shepard (1985). The most commonly cited perceived motivators include improved health, increased fitness, and decreased body weight.

Other researchers have investigated the relationship between goal setting and reward/punishment systems and exercise adherence. Kircher (1984) found that purposeful activity that was related to a specific goal serves as an intrinsic motivator to exercise. It has been argued that intrinsic motivation is a necessary factor for developing long term adherence to exercise (Shepard, 1985). Wysocki (1979) used behavioral contracting to encourage physical activity in college students. The participants would leave something of value with the instructor. The item would be returned when the participant accumulated a pre-determined number of aerobic points. The author concluded that this type of punishment system was effective for development of exercise "on an immediate basis". Martin and Dubert (1984) reviewed exercise goal setting techniques. Several factors were found to have bearing on exercise adherence including goal achievement, distal goal setting (setting long-term goals on a monthly

basis), flexible daily goals, and including the participant in the goal setting process.

Allen (1984, 1986) stated that the use of motivational tools such as exercise goals, periodic testing and contracts could be used to increase adherence. It was also suggested that reinforcement would be more suitable for long-term adherence. Martin, et al. (1984) used an attendance lottery as an extrinsic motivator for increasing exercise adherence. The authors concluded that this technique caused no significant change in exercise behavior. However, other investigators have found positive changes in exercise adherence from the use of rewards and incentives (Keefe and Blumenthal, 1980; Libb and Clements, 1969).

Dishman (1980) discovered that when the Dishman Self-Motivation Inventory was combined with select biologic traits (percent body fat and body weight), the participants' adherence status could be correctly identified 80% of the time. However, without the use of the biologic traits the self-motivation inventory predictive value was only 47%. Similarly, Gale, and Associates (1984) used the Dishman self-motivation scale and found that the early dropout men had the lowest self-motivation scores. The researchers concluded that "beyond the initial period of the program, self-motivation did not play a significant role in determining exercise adherence".

Social Support

Support groups have been associated with increased adherence to exercise. Martin and associates (1984) concluded that social support

was important in determining participant exercise behavior. Positive reinforcement (praise) and feedback from the instructor during exercise were particularly important for developing adherence to exercise. Wankle (1984) found that the students considered the leader support, "buddy system" support and group support (in that order of priority) to be the most beneficial for their class attendence. Contrary to the findings of other investigators (Andrew and Parker, 1979) the participants did not find the home support system (spousal support) very useful for developing adherence. Also, the instructors felt that the support groups positively affected the participant attendance rates. Wankle (1984) discovered several support groups that were important to a group of male employees. The support groups are listed in order of priority: supervisor's support, friendship within the exercise group, support from work friends, and encouragement from non-work friends.

## Instructional Considerations

Most of the research that has been presented thus far can be used for developing more effective adult exercise programs in relation to adherence. However several authors have done research and/or made suggestions that directly apply to the "class" setting and the development of adult exercise curricula. The results are divided into three categories: instructional strategies, the instructor, and alternative course focuses.

Instructional Strategies

Many researchers have tested or suggested instructional techniques that can be used to increase exercise adherence. Thompson and Wankle (1980) conducted a study on adult women in a commercial fitness setting. The purpose of the study was to see what effect perceived activity choice had on exercise behavior. It was found that those participants who perceived that they had a choice of activities had significantly greater adherence rates. The authors went on to suggest that if the subjects were given an actual choice of activities an even more dramatic effect might be seen. Oldridge (1977) felt that a variety of activity choices and program orientations was a necessary component of an effective exercise program.

Other investigators have shown that altering participant beliefs/perceptions can facilitate exercise adherence. Shepard (1985), Goodrich (1984), and Allen (1984/1986) have all suggested the use of time management techniques to alter the perception of lack of time as a barrier to being physically activitive. Shepard (1985) concluded from the Canada Fitness Survey that changing the perception of lack of time would be more effective than providing information, facilities, leadership, or additional time. Other related barriers that could be altered included a dislike for physical activity, life stresses and lack of energy. Similarly, other investigators have suggested that changing the participants' negative perceptions about these barriers via education would be an effective way of increasing adherence (Goodrick et al., 1984).

Riddle (1980) gathered information from 296 male and female joggers and non-exercisers who filled out a questionnaire based on the Fishbien Behavioral Intervention Model. From this information it was concluded that behavior change (from poor exercise adherence) can be facilitated by altering negative beliefs and attitudes toward physical activity. Mirotznik and associates (1985) also concluded that a strong educational component aimed at changing participant's knowledge and beliefs should be a part of a cardiovascular fitness program. Finally, Cousineau (1985) developed several instructional strategies for altering these types of negative beliefs/perceptions, including decision making related to physical activity, physical activity barrier lists and exercises for prioritizing physical activity.

Martin and associates (1984) suggested several cognitive strategies for developing adherence during the initial stages of an exercise program. He found that those participants who used dissociative cognitive techniques had significantly higher attendance rates than those who used associative strategies. Martin also suggested that the use of coping thoughts (positive self statements) could be effective in developing a regular exercise habit. The author summarized techniques for developing long term adherence to exercise. These techniques are designed to increase the likelihood that the exercise behavior will be perpetuated after the termination of a class. It was suggested that support and reinforcement fading should be gradually worked into the program well before graduation. Also, Martin saw a need to progressively give the participants more responsibility throughout the time span of the program; i.e.,

self-monitoring, self-evaluation, and self-reinforcement. Finally, the researcher saw a need for relapse prevention training. This decision was based on the observation that most people relapse from health related activities. Several procedures were reviewed to effectively deal with this common phenomenon; e.g., discussions and cancelling class for a week.

Instructor

The instructor has been identified as the "pivot" upon which the success or failure of an exercise program rests (Oldridge, 1977). Oldridge et al. (1983) discovered that a common reason for non-compliance to exercise was an uninterested staff. Other investigators concluded that the personality of the instructor is an important factor in developing exercise adherence (Shepard, 1985; Morgan et al., 1984). Finally, Martin et al. (1984) found that social support that was individualized and given in a positive way from the instructor increased adherence rates.

Alternative Course Focuses

Most adult fitness programs are based on the physical and/or psychological benefits associated with regular exercise. These types of programs have had limited success in relation to exercise adherence. Consequently, several authors have seen a need to focus on aspects other than the health-related benefits of exercise. Wankel (1984) and Morgan et al. (1984) both concluded that continued involvement in regular physical activity is enhanced if the activity is enjoyable. Therefore, the effects of a more recreationally

oriented program on exercise adherence should be researched (Wankle, 1985). Lambert (1985) stated that most physical education curricula in use today are based on acquisition of motor skills. "It is wrong to base fitness programs on the same assumptions, planning and evaluation procedures". Fitness models that encourage lifetime physical activity need to be developed and implemented. Finally, the research of Kenyon (1968) showed that the meaning of physical activity varies depending on the individual; e.g., aesthetics, pursuit of vertigo, catharsis and social experience. Therefore, these types of course orientations need to be considered if the needs of a more diverse population are to be met.

## Conclusions

To date, fifteen years of research on prediction and adherence to exercise has produced only modest results. Part of this problem can be attributed to the concepts, methods and measurements that have been used in adherence research (Dishman, 1986). What is definitively known about this area of study is of little use to the practioner. The author's conclusions are similar to those of Dishman (1986) and are listed below:

1. Smokers, obese individuals, and blue collar workers are less likely to adopt or maintain a supervised exercise program.
2. Lack of time is the number one reason given for dropout. However, the reliability of the self-reported data is questionable.

3. Perceived inconveniences are associated with dropout. However, some people exercise despite these barriers.
4. The current research methods are not effectively discovering truths related to exercise adherence.
5. Reinforcement is important for developing exercise adherence. However, the type of reinforcement and the person who provides the reinforcement will vary depending on the person and the setting.
6. Beliefs about health benefits, and the reasons for exercising are associated with exercise adherence.

Finally, the research related to the instructor/curriculum design and adherence is sparse and insufficient. Because the instructor represents the bridge between adherence research, curriculum theory, and program implementation, it would seem prudent to direct studies in this direction.

# CHAPTER 3

## THE HEALTH ENHANCEMENT CURRICULUM

### Curriculum Goals

Please see footnote before proceeding with this chapter.[1] The entire curriculum is diagramed in Figure 1.

When developing goals for a curriculum, the value orientation (Jewett and Bain, 1985) and program ethics are primary concerns. There are five value orientations that the designer can adopt when developing a curriculum. These orientations include discipline mastery, social reconstruction, learning process, self-actualization, and ecologic validity. The Health Enhancement Curriculum's value orientation is social restructuring. However, meeting the needs of the individual is the means by which social change can take place. Therefore, social-cultural and self-actualization orientations are also highly valued within this curriculum.

The ethical bias of the curriculum is also important. Considers persuasion as the only acceptable method of producing long-term

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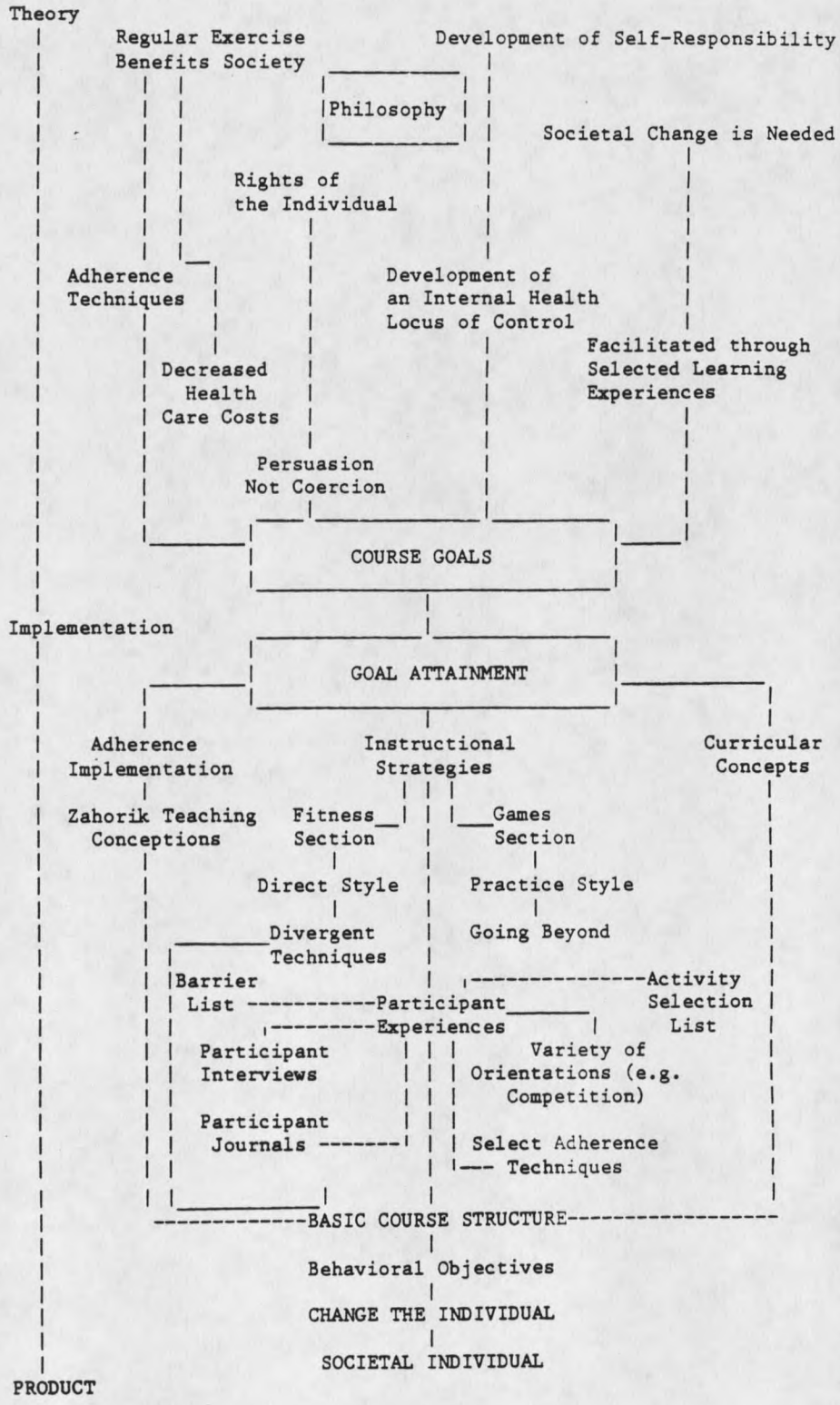
[1]This chapter is not written in past tense. The reason for this is that the curriculum represents a plan for the instructor to follow. Generally speaking, the plan that is described in this chapter was followed, however, this was not always the case. It would therefore be wrong to write the chapter in a way (past tense) that would lead the reader to believe that the program was implemented exactly in this manner. When the investigator deviated from the written curriculum an explanation is given in chapter five (Data Analysis).

Figure 1. Health Enhancement Diagram.



adherence to exercise. Persuasion can be defined as the act of exercise getting a participant to adopt a particular behavior through education, awareness, reasoning, participant experiences, enjoyment, or exhortation. When implementing a curriculum which is designed to change society, it is easy to forget the rights of the individual. If any techniques are used that interfere with individual rights, the educator/program has exceeded the boundaries of persuasion. Examples of techniques that would interfere with individual rights include:

1. Denying the participant the right to make his/her own decision about whether or not to exercise.
2. Imposing a lifestyle through unreasonable incentives for what an organization considers "to be the right life" (Winkler, 1978).
3. Manipulating the participant by selectively providing information that only points one way.
4. Deliberately providing false information to influence the participants' belief system (Winkler, 1978).

These methods would be considered coercive, or, at the very least unacceptable manipulation of the participant. Once a program incorporates coercive measures to cause social change it is no longer following the Health Enhancement Curriculum. Based on these premises, the program goals were developed as follows:

1. To increase adherence to exercise through instructional methods that are selected according to the group's needs.
2. To avoid participant exercise dependency on the program or the instructor.

3. To provide the participant with a variety of experiences and a base of knowledge related to physical activity.
4. To implement the program so that the participants enjoy their experiences within the class.

## Behavioral Objectives

The behavioral objectives serve three purposes in this curriculum. First, they provide a specific approach for breaking down the goals into workable parts. For example, one of the goals is to increase adherence to exercise. Lack of time is the number one reason given for not adhering to an exercise program. Therefore, a behavioral objective would be to show the participants how to develop their own time management program. This directly relates to the curriculum goals, and it is something that can be done during one or two class periods.

Secondly, behavioral objectives force the instructor to have a daily lesson plan which focuses on the program goals. Too much reliance can be put on associative learning from the activity; e.g., desired behavioral outcomes will occur automatically from participation in the activity. The instructor must specifically design the activity so that the participants are assured of the desired experience. A desired experience in the game section is for the participant to experience playing the game with a competitive and process orientation. It is naive to assume that the participant will experience both of these orientations just by playing. The behavioral objectives can be designed so that the desired experiences take place.

Finally, the behavioral objectives provide a record system for the instructor. The system can be used as a formative and summative evaluation tool. It is difficult to evaluate how much time is being devoted to the program goals, and, which goals have not been addressed. The objectives show the concepts and the experiences that have been reviewed in relation to the goals. If it is discovered at the end of the quarter that a goals was neglected, it is too late to do anything about it. Behavioral objectives can prevent this 20/20 hind sight.

## Related Curricular Concepts

The curriculum has four functions. The first is to identify the major concepts, operationally define them, and describe their relationship to one another. Secondly, adherence techniques, and the instructor's role will be discussed. Thirdly, the instructional strategies and the participant experiences will be reviewed. Finally, the basic course structure will be described. This process transforms the curriculum from a theoretical program, to one that has practical application within an adult exercise setting.

The first concept to be reviewed is adherence to exercise. Adherence to exercise can be defined as the consistency with which an individual voluntarily takes part in some type of exercise and/or recreationally oriented activity. Wankel, (1984) concluded that a more sensitive indication of the participants' commitment and motivation to physical activity was needed in studies dealing with exercise adherence. The majority of studies done on exercise class

adherence classify a participant as attending or absent. This method has no regard for the reason behind the absences (Martin, J., Dubbert, P., Katell, A., Thompson, K., Raczynski, J., Lake, M., Smith, P., Webster, J., and T., Sikora, 1984; Thompson, C., and L., Wankel, 1980; Gettman, L., Pollock, M., and A. Ward, 1983). The definition used in the Health Enhancement Curriculum identifies an excused absence as follows:

1. Business trips/meetings
2. Vacations
3. Sickness
4. Taking care of a sick/injured family member
5. Transportation problems on the way to the activity class
6. Taking part in another type of physical activity

This addition provides a more sensitive indication of actual adherence rates.

However, the participant is expected to make up the missed exercise session. To be classified as an adherer to physical activity a participant would have to participate three times a week for at least 20 minutes per session (ACSM, 1978). To be considered a long-term adherer, the participant would have to meet these standards in one or more activities for a minimum of six months (Shepard, 1985).

There are two differences between this adherence definition and others. First, the Health Enhancement Curriculum is not limited to activities that are "traditionally" considered exercise in nature; e.g., aerobics, swimming, or weight training. Examples of other activities that would be acceptable are fly fishing, outdoor

photography, hiking, sailing, and volleyball. This addition is different from the guidelines given by the American College of Sports Medicine (ACSM, 1978). The traditional types of activities such as running have been shown to enhance health both physically and mentally (Morgan, 1985). However, few individuals exhibit adherence to this type of physical activity. The more recreationally oriented activities are included in the Health Enhancement Curriculum because they can be important modes of activity for initiating an active lifestyle. Secondly, the guidelines given for an excused absence provides a more sensitive measure of adherence in a class setting.

The second concept to be considered is health locus of control (HLC). The HLC tool was originally developed by Wallston, Kaplan, and Maides (1976). Since this original instrument was designed, the Multidimensional Health Locus of Control (MHLC) scale has been developed. This is a more sensitive indicator of an individual's health locus (Wallston, K., and B. Wallston, 1978). The MHLC scale is used to evaluate what an individual believes is in control of his/her health. The MHLC has three basic health locus beliefs related to the control of one's health. They include chance (CHLC); powerful other (PHLC) and internality (IHLC) (Walston personal communication, 1987). If an individual believes that a higher force is in control of his/her health, the person is classified as PHLC. If he/she believes that nothing is in control of his/her health but chance, the person is classified as a CHLC. If he/she falls into either of these categories, they are classified as having an external health locus of control. The final category is internal health locus of control

(IHLC). A person is classified as a IHLC if he/she believes that he/she is primarily in control of his/her health. A goal of this curriculum is to develop adherence to exercise through internality; e.g., self responsibility. Developing exercise adherence through externality; i.e., when the program or instructor is the force that is in control of the participant's health, should be avoided at all costs in this approach.

Adherence Techniques and the Instructor

Adherence techniques are designed to increase adherence to physical activity through participant decision making and self-responsibility. Possible techniques are listed below.

1. goal setting/goal attainment
2. testing when appropriate
3. time management
4. journal keeping
5. coping skills
6. participant instructor counseling sessions
7. participants designing their own activity programs
8. choice of activities
9. lifestyle management reports
10. motivational techniques
11. support systems
12. safe logical progression of activities
13. reinforcement techniques
14. developing positive perceptions about physical activity

15. variety of activities

16. individualization

17. information via lectures and readings

The adherence techniques that are used vary depending on the setting and group characteristics; e.g., knowledge, experiences, and perceptions of physical activity. In order for instructor to be effective with these techniques, the instructor must incorporate three skills. The first skill would be what Zahorik (1986) has described as the Science Research Conception of good teaching. This conception is based upon following the evidence of previous research. Zahorik was referring to teacher models; e.g., mastery learning. However, in this curriculum the instructor needs to be familar with the adherence research. The previously defined adherence techniques represent the instructor's "bag of tricks" for increasing exercise adherence. Without this knowledge of effective adherence techniques the instructor has no base from which to work. Secondly, the instructor needs to be philosophically aligned with the moral and ethical rationale upon which this curriculum is based. This rationale represents the methods that are acceptable for facilitating the program goals. If this dimension does not exist, the instructor could inadvertently send out conflicting messages that are not aligned with the program rationale. Thus, if an instructor is not in agreement with this philosophy, he/she should not try to implement the curriculum. This skill is what Zahorik calls Theory Philosophy Conceptions. The final teaching skill is the Art Craft Conception (Zahorik, 1986). Effective instructors have personal traits that they

can use to facilitate change within a learning environment. The traits vary from instructor to instructor. However, they include the ability to articulate ideas, thoughts, and feelings, or a persuasive personality that allows participants to be receptive to ideas and experiences that they would not normally accept. To be effective, the instructor's traits should be creatively applied to fit the needs of a given situation. In the Health Enhancement Curriculum the instructor needs to develop an environment within the gym in which the participant feels comfortable with trying, experiencing, and growing (Hellison, 1978). Without this environment, change cannot take place.

All three of these concepts are necessary to be an effective teacher in the Health Enhancement Curriculum. However, the Art Craft Concept is seen by this investigator as the key to the program's success. Effectively implementing the appropriate adherence techniques and activity experiences, in a way that the participants benefit from the intervention, is an art and craft. This skill is something that cannot be developed from reading this curriculum. Rather, it is a skill that comes from experiences, knowledge and an ability to understand and work with people.

## Instructional Strategies/Participant Experiences

The instructional strategies proposed within each section are different. The fitness portion utilizes a direct teaching style to communicate information related to effective exercise prescription (Bain and Jewett, 1985). This information would include concepts such as initial level of fitness, fitness plan, warm up, cool down,

progression, overload principle, intensity, duration, frequency, and mode of exercise (McArdle, Katch and Katch, 1981; O'Donnell and Ainsworth, 1984). After the participant is exposed to this information and has experienced the activity, the teaching style changes. Using divergent instructional techniques (Mosston and Ashworth, 1986) the participant is given a problem: what is the best exercise prescription for me? However, only the participant can develop an exercise program that will be adhered to on a long-term basis. The instructor's function is to provide guidance so that the prescription is physiologically sound and right for the participant.

Activities within the games section of the Health Enhancement Curriculum will utilize a practice style of teaching. At the start of each class session, all of the students observe the instructor performing a skill; e.g., forehand drive serve in racquetball. After this short demonstration, the participants divide into groups to work on the skill. The instructor then observes each group and provides individualized instruction when necessary. When the students aquire the minimal skills necessary to participate, the play portion of the class starts. During the play section, the instructional strategies shift from practice to "going beyond" (Bain and Jewett, 1985). The instructor's challenge is to get the participants to ask themselves: "If I am going to play this game, what are my reasons for doing it?" Some possible answers could include:

1. I like to play competitively.
2. I enjoy the process more than the competition.

3. I want to play for social reasons.

4. I want to play for muscle tone.

Getting the participant to ask this question will be accomplished through the participant journals and by designing the class so that the participants experience competition, play, enjoyment, and the social aspects of physical activity. By asking this question, and clarifying their beliefs, the participants have taken a step towards long-term exercise adherence; in the future, participants can play in situations that meet their personal needs. For example, a process oriented player would not have an enjoyable game of tennis with a highly competitive player. The experience would be more positive with another participant who had a similar orientation.

If these instructional strategies are not working in any of the sections they will be changed. It is important that the strategies are adapted to fit the individual and group needs. These needs can vary depending on the demographics of the group.

An essential part of the curriculum is to provide the participants with the necessary experiences needed for long-term adherence. At the same time it is not necessary to provide them with all of the current information on exercise adherence. Shepard (1985) concluded that adherence rates could be increased if the instructor avoided giving too much intellectual information, however, there are six adherence techniques that should be introduced on the information days. They include:

1. time management skills

2. journal keeping (reflection and introspection)

3. goal setting skills
4. coping skills
5. reinforcement
6. support systems

These skills are taken from the list given earlier in this chapter and are essential to this model. The other techniques should be utilized when there is a group or individual need for additional methods.

Basic Course Structure

Ideally the class taught in the Health Enhancement Curriculum should have fifteen to twenty students. Because the curriculum requires individualized attention, it would be unwise to exceed twenty-five participants.

The classes in the Health Enhancement Curriculum will meet three times a week. Each session will last approximately fifty-five minutes. The first ten minutes of each session will be used as an information period. During this time topics relevant to adherence, exercise, and play will be reviewed and discussed. Also, additional readings, slide shows, short movies, and guest lecturers will all be presented. Finally, the weekly journal question and class summaries will be presented to the participants. The journals are kept by the participants to help clarify their relationship to, and need for, physical activity. A more detailed explanation of the journal will be given later in this section. The other two class sessions will be spent on activity instruction and participation in the activities.

On the first day of class the participants will be put into a situation where they make decisions about what activities and adherence techniques will be implemented during the quarter. The class will be divided into two forty-day sections; fitness and games. The breakdown of these sections is shown in Table 1.

Table 1. The breakdown of class divided into two forty-day sections; fitness and games.

| Fitness | Games |
|---|---|
| a. walk/jog | a. volleyball |
| b. weight training | b. tennis |
| c. stationary bike | c. racquetball |
| d. aerobic dance | d. hiking |
| e. basic exercise | e. soccer |

The participants are asked to prioritize the activities in each section. Their selection is based on two considerations. First, the participants will prioritize the activities from an enjoyment standpoint. Secondly, the activities will be prioritized on their ability to fulfill the participants' health related needs. After both are considered the activities are ranked from one to five (one being the first choice and five being the last). A choice will be given because perceived activity choice has been shown to increase exercise adherence (Thompson and Wankel, 1980), the author suggested that giving the participants an actual choice of activities could produce an even more positive effect.

Next the participants will be given a list of factors that could act as barriers to physical activity (Table 2).

Table 2. List of factors that could act as barriers to participant's physical activity.

| | |
|---|---|
| 1. | cost |
| 2. | family responsibilities |
| 3. | lack of time |
| 4. | poor facilities |
| 5. | too much work |
| 6. | injuries |
| 7. | sickness |
| 8. | too tired |
| 9. | more important things to do |
| 10. | inaccessible facilities |
| 11. | no one to exercise/recreate with |
| 12. | lack of skill |
| 13. | lacking spousal support |
| 14. | physical activity is not important |
| 15. | dropout from the activity will occur |
| 16. | exercising with groups is a problem |

From this list the participants will be asked to place the number one next to the strongest factor, the number two next to the next strongest factor, etc. Those factors that are not barriers will be left blank. The results will be used to help decide what adherence techniques need to be part of the program.

The last thing that will be done on the first day is to make individual appointments with each participant. During a ten-minute interview the instructor will attempt to achieve three objectives:

1. To get to know each person on an individual basis, and develop a positive relationship with them.
2. To get a feel for the type of people in the class.
3. To motivate the participants to stay with the class until the adherence information/practices can be implemented.

These interview sessions will be kept fun and light; a written summary will be kept for each interview. If the participant seems uncomfortable, any type of potentially sensitive questions will be avoided. The participant interviews are also done again at the end of the quarter. During this session information will kept to see if the participant's responses have changed since the first interview. A more detailed description of this process is given in the evaluation section of the curriculum.

As mentioned earlier, the participants will make weekly journal entries. The journal questions are designed to get the students to reflect and become more introspective about physical activity. Specific questions related to physical activity need to be answered so that the participant can make decisions that will lead to long-term adherence. The entries will also be used as a formative and summative evaluation tool. For example, the instructor can use this information to see if he/she has gained the participant's confidence or if the participants are working towards the course goals. It is impossible to list the questions that should be used for this class. The exact questions will depend on the class interests, demographics, and motivational levels. The instructor's task will be to read these variables and ask the appropriate questions. Listed below are some sample questions that will help to clarify the author's thoughts.

1. If there was a scientific discovery that showed that physical activity did nothing to enhance or decrease your health, would you exercise? If the answer is no, why wouldn't you

exercise? If the answer is yes, what activity would you choose and why?

2. What factors are most critical in your activity program for long-term adherence; e.g., variety, competition, leadership, companionship, goal attainment, health enhancement, motivation, support? Also, explain why this (these) factor(s) are important to you.
3. What is the difference between competition and play?
4. What aspect of outdoor activities is most appealing to you fitness or the aesthetic experience?

These questions need to be sequenced into the course to coincide with appropriate activities. Therefore, question one could be asked at the beginning of the class while question three should be asked at the end of the games unit.

The final portion of the class represents a culmination of all the learning experiences. The participants can make one of two choices at this time. The first choice concerns continuing with any type of physical activity. If, after going through the course the participant does not want to have anything to do with physical activity, this is perfectly acceptable. Exercise is an individual choice. The instructor's responsibility is to provide the necessary experiences and information so that the participant can make an informed decision.

The second choice will be to continuing with some type of physical activity after the class is over. If this choice is made, the final requirement of the program is for the participant to develop

an activity program. Regardless of the activity that is selected, the participant will have the information and experiences to develop their program.

The program will be developed using the following format:

1. Fitness

    a. Why did you choose this activity?
    b. warm-up
    c. intensity
    d. duration
    e. frequency
    f. mode
    g. goals
    h. fitness plan for adherence
    i. testing
    j. cooldown
    k. motivational techniques

2. Games

    a. Why did you choose this activity?
    b. warm-up
    c. orientation; e.g., competition, process, hit and giggle
    d. duration
    e. organization or people that you will participate with after this class
    f. motivational techniques

## Sequencing and Selection of Activities

Much of the information related to this section was discussed in the curriculum model. However, a more detailed description of the weekly course activities will be given.

Week One - Information/developing a positive relationship with the participants. The first week is very important and will be spent getting information from the participants. The information will come from the activity selection form, barrier selection list, HLC, waiver release, and individual interviews with the participants. Also, the

instructor will try to develop a positive relationship with the class. In part this will be facilitated through a slide/talk show that represents the instructor's philosophy of physical activity. Before anything else can be done the participants have to feel comfortable with the instructor and the class setting.

Week Two - Journal keeping skills/aerobic exercise. The fundamentals related to aerobic exercise prescription are presented via lectures and handouts. The quantity of information will be determined by the needs and receptiveness of the group. More importantly, the participants will be introduced to journal keeping skills.

Week Three - Goal setting/buddy system. Goal setting techniques will be stressed during this week. The instructor's challenge is to show the participants how to set practical and achievable goals that meet their needs. Often, a conflict arises between the activities that will meet the participants health related goals and the activities they enjoy. Participants need to become aware of, and work this conflict out.

Week Four - Time management/LMR. Lack of time is the number one reason given for dropping out of exercise programs (Burton, B., 1984; Gettman, L., Pollock, M., and A. Ward, 1983; R. Shepard, 1985). Management skills will be introduced early in the program to show the participant that they have time for exercise; if they choose not to exercise they cannot use lack of time as an excuse. Rather, they will have to search for the actual answer via introspection and reflection.

Finally, the option of taking the Lifestyle Health Risk Appraisal is presented to the participants.

Week Five - Coping/introduction to the games section. Coping thoughts can be used by the participants to provide themselves with positive reinforcement (Martin, J., and P. dubbert, 1984). For example, instead of saying; "I didn't work hard enough today", a more positive statement would be: "I did a great job in just making it here today".

The games will be presented using a logical skill progression. Also, during the initial stages positive reinforcement will be stressed. After the basic skills have been reviewed the concepts of competition and play (process) orientations will be incorporated into the class. It is necessary for the participants to decide what type of orientation is best for them.

Week Six - Relapse prevention. Researchers have suggested that relapse from an active lifestyle is similar to the behavior exhibited by addicts who relapse after abstention from drugs (Martin, J., and P. Dubbert, 1984). To prevent the feeling that all is lost if one or two exercise sessions are missed when the participants are exercising on their own the class will be cancelled for one week. What the participants choose to do during this period is their choice. The only difference is that they cannot rely on the class or the instructor for physical activity.

Week Seven - Support fading. Support fading will be facilitated by cancelling one of the exercise sessions. This will be done for two reasons. Firstly, it gradually moves the participants away from the

support of the instructor and the program. Secondly, this allows the participants to make decisions and take more responsibility for their involvement in physical activity.

Week Eight - Testing. This week will be spent describing testing procedures that can be used to evaluate physiologic changes that have occurred due to physical activity. Primarily the testing relates to fitness related activities; e.g., twelve-minute walk/run, body compositions. The testing can be a part of goal setting and used as a motivational tool.

Week Nine - Open/development of individual activity plan. This week will be open for topics that are of interest to the participants e.g., nutrition and exercise, stress management, and physical activity. Also, the participants will complete their activity programs.

# CHAPTER 4

# METHODOLOGY

## Justification of Research Methods

This investigation employed qualitative and quantitative research techniques. However, most of the evaluation tools were qualitative in nature, primarily for two reasons.

First, the research techniques used within the natural science paradigm historically have not satisfactorily provided methods for increasing or maintaining adherence to exercise. As a result, investigators have seen a need for the use of alternative research methods. Dishman (1982) concluded that research has been atheoretical, and that several factors could be attributed to lack of knowledge in this area. Most notable was the "model or paradigm employed to study adherence and the level of analysis subsequently permitted". In a subsequent review article, Dishman (1986) concluded that adherence researchers have not utilized the most appropriate research technqiues. Investigators were doing "research that was strictly product oriented". By ignoring the process, these methods were not satisfactorily explaining the exercise compliance problem. Wankel (1984) found a need for refining the current adherence techniques and designing more effective ways for the instructor to present these techniques to the participants. Research that has been

done thus far has "emphasized standard interventions that could be implemented in various exercise programs under specifically controlled conditions". Wankle suggested that other research technique such as the case study would be more effective for accomplishing these ends.

Second, qualitative research methods could produce the most significant insight into the Health Enhancement Curriculum and its implementation, because the assumptions inherent in the study's design were not congruent with the assumptions of the natural science paradigm. According to Schemmp (1987), the assumptions of the natural science paradigm include:

1. There is one best solution to every problem.
2. Phonomena must be investigated objectively. Therefore, unwanted variations in the environment such as the instructor or the participants must be controlled.
3. Truth can "only" be derived from that which is observable. This disregards many of the needs, thoughts, feelings, intentions, interests, and desires of the students and the instructor.

Concerning the first assumption, the investigator was interested in finding a workable process, rather than focusing only on the product; i.e., the extent of exercise adherence. This is a fundamental difference between the qualitative and quantitative research paradigms (Schemmp, 1987). It was assumed that not single answer, law, or generalization could explain the complex behavior of adherence to exercise. However, it was believed that a process orientation would be conducive for the development of a hypothesis about exercise

adherence (Overholt and Stallings, 1976), which would hopefully generate more traditional studies related to exercise adherence. Concerning the second assumption, this study was carried out within a naturalistic setting. Therefore, factors such as the pupil or the instructor were not controlled because they are essential components of the environment. The instructor utilized as many instructional strategies as possible to actively influence the results of the investigation. These techniques were used because they seemed most appropriate for the instructor, setting, time, and group. By doing this the investigator could execute his actions at all levels and generate as many alternatives as possible (Allender, 1986). Manicas and Secord (1983) argue that quantitative research cannot be done properly in open every day environments. Rather, qualitative methods are needed for these research settings. This investigation was clearly conducted within an "open" environment. Concerning the third assumption, many of the curricular and instructional decisions were based on the thoughts, feelings, and interests of the students. This was done because it allowed information to be gathered about the quality of the participants' experience. Wankel (1985) found that very little attention had been focused on the reaction of the participants' exercise experience. If progress is to be made in making exercise a more enjoyable and regular part of the participants' life, methods must be developed for gaining information about the quality of the participants' experience. This information was facilitated through qualitative techniques such as participants

journals (Rubinson and Neutens, 1987). Also, the conclusions made by the instructor and other observers through reflection and introspection were a primary method of gathering information about the study. These methods were used because the investigator wanted to consider what is "intrinsically human" (feelings) which would provide a more powerful means of understanding human behavior (Allender, 1986). Therefore, an assumption underlying this study was that truth can also be discovered from that which is not observable.

## Research Methods

The course utilized several objective and subjective evaluation techniques. These techniques provided the researcher with multiple perspectives from which meaningful themes and patterns could be identified. The research methods also overlapped one another which helped the investigator to discover if the strategies were facilitating the curricular goals (Hellison, 1978). The methods and instruments used to evaluate this course were divided into quantitative and qualitative techniques. They included:

Quantitative Methods:

1. Activity and barrier lists.
2. Multidimensional Health Locus of Control (MHLC).
3. Goal summary sheets.
4. Participant attendance rates.

Qualitative Methods:

1. Instructor field notes (class summaries/instructor reflection).
2. Participant daily summaries.
3. Pre/post interview.
4. Class visitors.
5. Participant journals (reflection).

Quantitative Methods

The program used five different quantitative evaluation techniques. The activity selection and barrier lists were presented in the curriculum model (Tables 1 and 2). Barrier lists have been used by other investigators (Cousineau, 1985). The barrier list was prioritized by the participants as described in the curriculum model. The purpose of this process was to identify the factors that were perceived as preventing the participants from exercising on a regular basis. Thompson and Wankel (1980) found that a perceived choice of activities increased exercise adherence. Using this observation the activity selection list was the primary tool for determining the participant activities. The activity selection lists was also used to help make decisions related to sequencing of activities and information sessions.

The second tool to be used was the Multidimentional Health Locus of Control (MHLC). Each student filled out a MHLC at the beginning and the end of the class. This instrument provided quantitative data for evaluating the influence of the course on participant's health locus of control. When designing the study, it was decided that a

trend towards externality would require that two questions be answered:

1. Does the qualitative data support this trend? If so, what aspects of the class contributed to this shift?
2. A group shift towards externality is not an aim of the course. Therefore, what changes could be made to rectify this problem?

Conversely, if the participants were more internal, this would fulfill a goal of the program, and the qualitative tools would be used to identify what techniques or methods contributed to this change. The last outcome that might result from the use of this instrument would be no change in the participant's HLC.

If the participants entered the course and were not internally oriented, and finished the course with the same orientation; a major problem would exist in the efficiency of the curriculum. This would mean that the class had done nothing to influence positively the participant's beliefs about his/her health locus. The curriculum was designed to cause social change by influencing the participant's belief system. If a group entered with an external orientation and left with the same orientation, nothing would have been gained. However, if the participants had an internal health locus when they entered the program and left with the same orientation, they would meet the course goals. A more internal orientation at the end of the class would be considered an added benefit; i.e., as long as the participants did not become more external, the course goals were being met.

A frequency count evaluation technique was also employed (Rubinson and Neutens, 1987). This was in the form of goal summary sheets which have been implemented by other investigators; e.g., (Hellison, 1978). Two summary sheets were used to keep track of the number of times an effort was made towards goal attainment. The first sheet kept track of the actions that the instructor took towards fulfilling a goal, for example, a talk on coping skills and exercise would be taken as an action toward achieving goal one (increasing adherence to exercise). Data from this sheet permitted evaluation of the percent of class time spent on a given goal. The second sheet reflected the number of times that the participants made an effort towards goal attainment. This helped to show how much responsibility each participant had taken for his/her health.

The final quantitative method utilized the participants attendance records. This was a simple way to evaluate the groups adherence rates. A weekly attendance log indicated if the course was meeting the needs of the participants and keeping their interest. In this respect it was used as a formative evaluation tool. The final adherence rates were compared to fitness programs in Canada and the United States. This provided data regarding the relative success of the program in regard to maintaining adherence to exercise.

Qualitative Methods

There are five qualitative techniques that will make up the second portion of the evaluation procedures.

The first technique involved the instructor's fieldnotes. Fieldnotes are the most important data collection device used in qualitative research (Rubinson and Neutens, 1987); the investigator followed the methods described by Rubinson and Neutens (1987). The notes were made as soon as possible after each class session. This was done right after the class was over. Notes were not taken during the class because it was felt that this would make the environment less naturalistic. This technique is described as unobtrusive data collection (Rubinson and Neutens, 1987). The notes were then typed and duplicates made of each entry. Finally, the fieldnotes were divided into two parts. The first section was a class summary written in a narrative form. Notes were made about anything that related to the class goals, class environment, self-responsibility, meaning gained by the student. Fieldnotes also provide a record of informal interactions and unplanned activities that are relevant to the program. The second section was reserved for the instructor's feelings. This part of the fieldnotes represents the instructors introspective reflections about the curriculum and the participants. These thoughts needed to be expressed so that the data that was not observable could be recorded. Allender (1986) concluded that "greater regard needs to be given to methods that focus on intrapersonal process such as introspection and self-reports". These methods provide insignt into "personal meaning, holistic explanations, and societal change". All of these considerations were prime areas of interest to the researcher as described above.

The second technique to be discussed was the participant daily summaries. This method of data collection was adopted from ethnographic studies and has been adapted to fit the research needs of the pedagogist (Overholt and Stallings, 1976). The daily summaries were used to help the participants make sense of occurrences that took place on a daily basis within the class setting. Two to five minutes were used at the end of the class period to write something about the session. The instructor explained that he was most interested in the thoughts and feelings of the participants. This process was facilitated by the instructor sharing some positive and negative feelings regarding the class.

The interview was the next participant observation method used. Such techniques have been used for research within the gym setting by other investigator; e.g., (Hellison, 1978). The pre-interview was completed during the first week of class by the instructor. During the ten-minute interview, the following questions were asked:

a. Why are you taking this class?

b. What are your goals (if any)?

c. Have you been in an adult fitness class before?

d. If the answer is yes to question "c", what type of experience did you have in the program? Did you drop out of the class? If so, why?

The post-interview was used to gain insight into the following questions:

a. What goals/reasons do you have for participating in physical activity?

b. What type of experience did you have in this class?

c. If you took another activity class, what would be your reason for taking it?

d. What do you think your chances are for participating in physical activity on a regular basis? Why?

As mentioned earlier, the instructor did the first interview with the participants. The post-interview was done by the instructor, but could have been done by another qualified interviewer if the investigator felt that his presence would bias the participants' responses.

The class visitor is a class informant according to Rubinson and Nutens (1987). In all instances the observers were part of the group so that his/her presence did not interfere with the class environment. The first observer was an educator who knew nothing about the curriculum. After his visit he was asked to write a summary of his observations. The summary included the following information:

1. What appeared to be the goal of this class?
2. What was the classes reaction to the information that was given?
3. What was the classes reaction to the instructor?
4. A description of the class environment?
5. Additional comments or thoughts?

The second group of observers that visited the class were familar with the curriculum. They made periodic class visits throughout the quarter. This allowed professionals other than the instructor to give

input about the changes and progress that the class was making. The additional prespectives aided in drawing conclusions about the program.

The final qualitative data collection technique used in this study involved the use of participant journals. The journals provided regular input from the participants to the instructor. The participant's introspective/reflections were brought out through carefully designed journal questions. These questions related to the course activities and group interests. The journals were reviewed in greater detail in the curriculum model.

All of the above mentioned evaluation techniques were implemented unless they interfered with the class environment in order to keep the environment as naturalistic as possible. For example, if the participants did not want to spend the time to write at the end of each class, they would not be forced to do so. In a normal class situation the participants would not be asked to do something that he/she did not want to do. Therefore, it did not make sense to force an evaluation technique on the participants just because data were being collected. Argyris (1980) best sums up this line of thinking when he states:

> It is research, though, in which the investigators interact, researchers do not distance themselves or unilaterally control the methods of investigation, and the constraints of everyday life encounters are considered relevant. The goal is to find knowledge that people can use to design and execute their actions in their daily relationships at all levels. The methods are focused at generating alternative possibilities.

Collectively, all of the qualitative and quantitative techniques were employed to find common trends in the curriculum. The themes that emerge are described in terms of meaningful change for the students, participants, and the curriculum.

# CHAPTER 5

## DATA ANALYSIS

Data on the implementation of the Health Enhancement Curriculum was collected from three different settings. In all three instances the subjects were participants in the MSU Employee Wellness Program. The curriculum was first implemented during the Spring of 1987 to four participants. The participants signed up for the class after reading the course descriptions given in the wellness class registration listings (see Appendix P). During the summer of 1987, the same class was offered and another seven subjects participated in the course. Finally, the curriculum was implemented during the summer of 1987 in an MSU Employee Wellness Weight Training Class. In all three instances the subjects were unaware that they were involved in a study.

### Health Enhancement Model (Sampler Class) Spring, 1987

#### Subjects

The subjects represented a very diverse group. Sue was in her forties and did not like structured physical activity. She was taking the class so that she could "try out" a variety of activities and see if there was anything that she might want to pursue in the future. She was also interested in becoming more physically fit. The second participant was Tim, Sue's husband. He was also in his forties. His

goal was to stay in shape for hiking and hunting and was "tired of the pain that he had in his muscles after work" (Appendix A). The next participant was Kevin who was also in his forties. He was a competitive racquetball player and had been weight lifting for three years. He was taking the class to lose some weight and because of the convenient time. Mike was the final participant who was in his late twenties. He was taking the class because of his interest in activities that he could do when he was not biking or cross country skiing. He did these activities on a semi-competitive basis and was also interested in "cross training".

Activity Selection List

From the choices that were made by the participants in the activity selection lists shown in Appendix L (Spring Sampler Class), three activities were implemented. First, the participants did weight training and used the cycle ergometer for their warm-up and cool-down sessions. These activities were done for three and a half weeks. Next, the students participated in tennis. This activity continued for another four weeks. The last two weeks were devoted to racquetball. These classes were picked by the participants on the basis of enjoyment.

Barrier List

From the choices that were listed in the barrier list (see Appendix M, Spring Sampler) every participant chose lack of time as his/her number one reason for not exercising on a regular basis. The second most common factor was family responsibility. Because of the

small number of participants it was difficult to find any other significant factors that related to the group. However, other factors that were important to individual participants were too much work, more important things to do, lack of skill and lack of commitment. None of the participants found lack of spousal support, not having anyone to recreate/exercise with or injuries as a barrier to exercise.

Multidimensional Health Locus of Control Results

The pre-test revealed that all of the participants entered the program with a strong internal health locus. In fact, all of the subjects were above the mean composite scores (27.38) for persons engaged in preventive health behaviors. The class mean score for internality was 29.75 (indicating more internality). A pure internal would be high on the internal (IHLC) scale and low on both the powerful other (PHLC) and chance (CHLC) scale which are measures of externality. However, none of the participants entered the program as a pure internal.

The pre-tests also showed that the participants were below the mean scores given for both external scales (one participant was above the mean for powerful other). The mean score for persons engaged in health preventive behaviors for CHLC is 15.52. The Sampler class participants' mean score was twelve. The mean score for PHLC is 18.44. The Sampler participants' mean score was 17.5. These values indicated that the Sampler participants had less of a belief in the power of external forces for determining their health than the average person engaged in health promoting activities.

The participants were tested again at the end of the class to see what effects the program had on the students HLC. All but one of the students (who dropped significantly) scored higher on the internal scale (more internality). The sampler class mean was 30 (it was 29.75 at the start). The change on the external scales was very inconsistent. One participant dropped two points on the PHLC (less external). The second participant was unchanged on the CHLC and dropped one point on the PHLC (less external). The final participant dropped four points PHLC (less external) and increased five points on the CHLC (more external). One participant was classified as a pure internal at the end of the program.

Goal Summary Sheet Results

The instructor's goal summary sheet indicated that the program emphasis was on exercise adherence (goal one). During the spring session 38 separate learning activities were implemented to facilitate exercise adherence (see Appendix F). This particular goal (exercise adherence) received at least twice as much emphasis as the other three goals. Goal two (avoiding exercise dependency) was facilitated 19 times via lectures, daily summaries, conversations. Goal three (providing a variety of experiences and a base of knowledge) was facilitated 18 times. Finally, goal four (enjoyment) was facilitated twelve times.

Attendance Records

The three participants that continued with the program for the entire twelve weeks had an average class attendance of 83% (see

Appendix J). One participant dropped out mid-way through the program due to lack of time. Therefore, 75% of the participants adhered to the program. After the program was over the participants continued to exercise. However, the exercise programs that the participants followed did not coincide with the guidelines for exercise adherence (three times a week, minimum of 20 minutes) that were described in the Health Enhancement Curriculum. Therefore, these individuals were not classified as long-term adherers to exercise.

Instructor Fieldnotes

The bulk of the data that was taken from this experience came from the instructor's fieldnotes. During the twenty class sessions approximately 70 pages of notes were taken to describe what happened (changes or meanings that were derived from the experiences) with the students, curriculum and the instructor.

Changes in the Students. There were few significant changes that took place with the students as a result of this curriculum. One change that did take place was that all of the students demonstrated self-responsibility and effective decision making skills that are conducive to long-term exercise adherence. Typical responses that indicated this behavior were:

> Will the weight room be open so that we can work out on our own after this class is over. (see Appendix A, Day 6)

> It is a shame that you have to come in so early in the morning to instruct this many people. I am sure if you show us a few more things that we could come in and do this on our own. (see Appendix A. Day 6)

The second area of change dealt with the participants' clarification of their reasons for exercising. This was especially important from an adherence standpoint. During the first day of class the participants were asked to prioritize several activities on the basis of enjoyment. As mentioned earlier, it was decided that the participants would use the cycle ergometer and weight training as their form of physical activity. By the seventh class meeting everyone in the class (except Mike) agreed that these activities were tolerable to boring (see Appendix A, Day 7 and Appendix I, Class Summaries). This lack of interest developed because the participants chose the activities that would best meet their health related needs, not the activities that they thought they would enjoy. Therefore, the students (except for Mike) had a conflict between the activities that they liked and their health related goals (see Appendix A, Days 7, 8, 13, and 15).

This conflict was addressed throughout the quarter via talks, journal entries, daily summaries and participation in a variety of activities (tennis, racquetball, weight training, and stationary bike riding). For example, all of the participants enjoyed tennis. Tennis is a relatively poor activity choice for producing the type of health related adaptations that interested this group. However, the participants concluded that they would be more likely to do this on a regular basis because they enjoyed the activity (see Appendix A, Day 10 and 13; and Appendix I, Class Summaries). Therefore, from an adherence standpoint this decision made more sense. By the end of the quarter the students had resolved this conflict and could more

effectively do two things. First, they could better pick an activity that would meet their enjoyment and/or health related needs. Secondly, the class members could more effectively choose an activity that they would adhere to on a long-term basis regardless of their reasons for exercising.

It is important to note that only two of the people (Tim and Sue) who signed up for this class really could have benefited from the entire program. Mike and Kevin were already committed to an active lifestyle and were exercising on a regular basis. They had taken responsibility for their physical health (from an exercising standpoint) and they enjoyed physical activity. This class provided them with some information and a time to exercise.

Changes in the Instructor. This dimension demonstrated the most meaningful change during the quarter. A better title for this section might be discoveries about the instructor. At least, this title better describes what happened as a result of implementing and developing the Health Enhancement Curriculum.

During the entire quarter, the instructor struggled to develop a positive environment, i.e., a setting where the instructor is comfortable, the students feel comfortable and uninhibited, and change can take place. The instructor found himself nervous throughout the entire quarter (Appendix A, Days 1, 2, 5, 13, and 15) which is very atypical for him. When a new concept was implemented, i.e., an adherence technique, the instructor felt that the participants were not quite ready or receptive to the "new" concept. This, and the number of people in the class, caused the instructor to doubt himself

and the curriculum. There were many days that the instructor felt that he was not making any meaningful change with the participants (Appendix A, Day 12). Because the instructor was not changing the world with "his" curriculum, he seriously questioned the credibility of the curriculum. It was not until the end of the quarter that the problem was resolved. The reflections from day sixteen best sum up the instructor's conclusions about this problem:

> One thing that I have discovered with implementing this program is that causing change takes time and a lot of work. I don't know what I was expecting from "my" curriculum. Maybe after the second class session the participants would fall on their knees and exclaim; "I have been saved, I am now a long-term adherer to exercise, praise the curriculum". Maybe at the end of this class I will get someone to make an effort towards regular physical activity. Possibly someone will reflect on their experiences from this class and feel better about themselves because they have taken more responsibility for their health. If I have made a big impact on any of these people, I will be very surprised. I have to be content with the fact that I am trying to do something that is important. I also need to consider the occasional depression, doubt, and insecurity that is associated with implementing this curriculum as part of the process.

The final major contribution that the instructor received from his experience was a confirmation that the curriculum was in line with his philosophical beliefs. Many of the learning situations that occurred in this class were not pre-planned. It was discovered that the information/instruction that was not part of the planned curriculum was implemented within the ethical guidelines described in the curriculum. The activity or discussion that was part of the functional curriculum (what actually occurred during the classes) was directed towards the curricular goals (see Appendix A, Day 5). It is very important for the instructor to teach from a curriculum that

reflects his/her philosophical beliefs. This made the instructor's teaching more natural, sincere, and effective. The only way that the instructor could get in a teaching situation that allowed the functional curriculum to be in allignment with the course goals and philosophy was to develop a curriculum that met these needs.

Changes in the Curriculum. Implementing a curriculum with four people seemed more like semi-private therapy than teaching a class. However, even with this small group several important factors related to the curriculum became apparent. First, the importance of developing a positive environment was emphasized throughout the quarter. This concept was discussed earlier in the previous section. The degree to which much of the information is assimilated and utilized by the students depends on the relationship between the instructor and the student. It was felt that the pre-interviews were not needed because the group number was so small. However, because the participants/instructor relationship took so long to develop it was concluded that this process could have been better facilitated through pre-interviews (see Appendix A, Day 6).

The weekly sequencing varied from the planned curriculum more than the instructor had ever anticipated. This group did not fit the sequence that was developed when the curriculum was written. It is very doubtful that such a group exists. Significant time was spent on things that were not mentioned in the sequencing section but they were things that needed work, e.g., the unanticipated problem of the class numbers. However, the instructor often stuck rigidly to the weekly sequencing. This was a mistake. A very important statement in

the original curriculum -- that "the curriculum is a general outline and should be adapted to best meet the needs of a given setting" -- was ignored; this added to the disharmony of the class environment. It was therefore concluded that instructor judgement is required to implement the curriculum in a particular setting. The planned curriculum is by no means a cookbook for developing happier, healthier people. The instructor was aware of this, yet he often tried to use the curriculum as if it were a cookbook.

Next, several adherence techniques were implemented during the spring session (see Appendix A, The Behavioral Objectives, Days 3, 5, 6, 8, 10, and 13). However, seven of these techniques were easy to explain to the participants and more effectively adopted by the students i.e., disassociative training, positive feedback, coping thoughts, individualization, safe exercise progression, enjoyment, and support fading. Whereas other techniques were more difficult to implement i.e., time management, support groups, choices of activities and journal keeping skills.

Finally, it was stated in the planned curriculum that "if the instructor is concerned with the entire individual, then the participants are more likely to show commitment to the program goals". This belief was found to be true in this setting (see Appendix A, Day 19).

Participant Journal Entries and Daily Summaries

The participant journal entries were used intermittently for two reasons. First, there were only four people in the class. This

allowed the instructor to get information from the participants via conversations which were recorded in the instructor fieldnotes. Secondly, the participants did not want to take the time to write on journal topics as shown in the amount of information given the journal entries (see Appendix I). Therefore, the journals/daily summaries revealed no significant information except for the final journal entry. This entry was made by the participants three months after the class ended. I asked them what type of exercise (if any) were they involved in during the summer. Tim and Sue said:

> We haven't changed much -- we still find hiking the most fun in the summer. This was the only type of exercise that we did. We did get an exercise bike to exercise on during the winter.

This may not seem like much and maybe it is not. However, these people were participating in some type of physical activity after the class was over. They were doing this for fun rather than for health related reasons. This was a major area that was discussed throughout the quarter. Also, they purchased an exercise bike so that they could exercise during the winter. This purchase was a result of taking the class and is in line with several of the course, e.g., avoiding dependency on the instructor/program, self-responsibility, long-term adherence to exercise. The other participant was active over the summer, but the information shed little light on changes in his life.

## Health Enhancement Model (Sampler Class) Summer, 1987

### Subjects

A full description of the participants was given in the pre-interviews (see Appendix D). Six of the participants were females

whose age ranged from mid-twenties to early fifties. All but two of the participants were already active. The one male participant was in his mid-thirties and was not active.

Activity Selection List

The participants played tennis until the class was cancelled (eleven sessions). Tennis was selected based on three criteria (see Appendix L, Summer Sampler Class). First, the activities were prioritized according to the participants' health related needs. Secondly, the activities were prioritized according to perceived enjoyment. The combination of these two considerations determined the overall activity rankings. Also, the investigator talked with each participant and they indicated that tennis would be an acceptable activity. It was hoped that by adding the dimension of health related needs that the participants could avoid the conflict that the participants in the Spring class had with activity selection.

Barrier List

The participants prioritized a list of factors that prevented them from exercising on a regular basis. If a particular factor did not directly apply, the participants were instructed to leave the space blank. All of the participants ranked lack of time as a primary reason for not exercising regularly. In fact, it was ranked by each participant as one of the top four reasons for not exercising (see Appendix M, Summer Sampler). Three other barriers that were commonly cited were family responsibilities, too much work and too tired. Three participants found cost to be a barrier and only two of the

seven participants indicated that lack of spousal support was a barrier to regular exercise.

Goal Summary Sheet Results

The instructor goal summary sheet indicated that the class emphais was on two goals, exercise adherence (goal one) and avoiding exercise dependency via self-responsibility (goal two). Both of these goals were facilitated 16 times during the summer session (see Appendix G). Goal three (providing the participant with a variety of experiences and knowledge) and goal four (fun/enjoyment) were both facilitated eight times (see Appendix G). This data supports the changes in the curriculum which are described in the curriculum section of the instructor fieldnotes.

Multidimensional Health Locus of Control Results

The pre-test revealed that all of the participants entered the program with a strong internal health locus (IHLC). In fact, all of the subjects were above the mean scores 27.38 (indicating more internality, see Appendix N, HLC information) for persons engaged in preventive health behaviors. The class mean score for internal items was 30.28. A pure internal would be high on the IHLC and low on both the PHLC and CHLC. One participant was clearly an internal.

Two scales were used to measure the participants degree of externality: PHLC and CHLC. Two of the seven participants had scores that were above the mean for either PHLC or CHLC. However, the Sampler mean for PHLC was 11.14. This score indicated that the Sampler participants had considerably less of a belief in the power of

external forces in determining their health than the average persons engaged in health promoting activities (see Appendix N, HLC information). A post test was not carried out on the participants, because the course was cancelled early in the quarter.

Attendance Records

The summer class met eleven times before it was terminated. The participants missed 63.4% of the class sessions. Forty-three percent of these absences were excused (the guidelines for an excused absence were given in the methods section). Two of the participants dropped out of the program. Another participant was forced to deop the class because of a time conflict with her job. Still another participant could not participate because of illness. Seventy-one percent of the participants adhered to the program to some extent. However, because many of the participants were traveling, taking long weekends during the summer, and having other problems attending, the class was cancelled.

Instructor Fieldnotes

Much of the information from this experience came from the instructor fieldnotes. Notes were taken to describe the changes that took place with the students, curriculum and instructor.

Changes in the Students. There were few significant changes that took place with these students as a result of the Health Enhancement Curriculum. One significant aspect of the class was that the participants had fun while participating (Appendix B, Day 4). They

were much more at ease than the Spring Sampler class and were consistant about reporting their absenses in advance.

The most important discovery, which came early in the session, was that the majority of the participants did not need the information/changes that the Health Enhancement Curriculum was designed to facilitate (Appendix B, Day 5). The conclusion in the instructor's fieldnotes after the fifth meeting was that "these people don't need all of this adherence and self-responsibility stuff". For example, one participant did some type of physical activity everyday (even when she was traveling on business). Another participant was involved in four different wellness classes during the summer session. In fact, all but two of the participants were exercising on a regular basis (see Appendix D, Pre-Interviews). These two people were forced to dropout because of a schedule problem and illness. Therefore, the remaining participants had achieved many of the goals that the Health Enhancement Curriculum was based upon. What they needed was a class that would provide them with skill refinement, somebody to workout with and a chance to try out some new activities. This situation also supported the decision to discontinue the class.

Changes in the Instructor. The most significant change that took place during this session was in the instructor. The discovery that was made is best summarized in the instructor is fieldnotes (Appendix B, Day four, My Feelings).

> This curriculum has changed from it's original design. Initially, the curriculum was centered around adherence to exercise. This was clearly the primary goal of the class. However, through the implementation processes (Spring and Summer Sampler classes) and much reflection the other course

> goals have gained equal importance! This change stemmed from a basic conflict that I had with the way that a wellness class was taught. I see no fundamental difference between physical education classes, fitness center classes, and wellness classes. These were just three different names for the same type of class (all had a discipline mastery emphasis). The "other" goals (self-responsibility, internal health locus, non-dependency, effective decision making and fun) along with exercise adherence are the necessary components of a wellness class. This process allowed me to find out what a wellness class should be and what differentiates wellness from other related fields.

Changes in the Curriculum. Several changes were made in the curriculum. First, the curricular goals were modified. Second, the student daily summaries were used more frequently. Third, a summary goal sheet was kept on each participant. Finally, it was concluded that the participants should not be given a choice of activities in the way that was presently described in the Health Enhancement Model.

The modifications that were made in the curricular goals are the basis for a wellness class. The goals were changed because other important components became evident after implementing the curriculum. Even though these goals were developed for an activity class they have application for any wellness course. The revised goals are listed below (Appendix B, Day 1).

1. To influence the groups' lifestyle by increasing adherence to exercise.
2. To avoid exercise dependency on the program or the instructor. This will be facilitated by promoting self-responsibility and effective decision making skills.
3. To provide a variety of experiences and a base of knowledge related to physical activity.

4. To develop an environment that promotes enjoyment and fun for the participants.

Secondly, the daily summaries were used sooner and more frequently than in the spring course in order to aid in the development of a positive environment. However, the students' daily summaries were ineffective because the participants were absent so much. The summaries would build on each other or were based on information that was given in the previous class session. Therefore, a participant who missed a week of class did not understand the question. Toward the end of the class the instructor discontinued the use of this evaluation technique.

An addition to the evaluation techniques was also made. Each participant had an individual summary goal sheet which showed the investigator how much time the instructor was spending him/her on an individual basis. During the eleven sessions it was found that each participant received individualized attention related to the course goals (Appendix G, Individual Goal Summary Sheets). However, this technique was very time consuming for the information that was gained. The technique would have to be implemented in another setting to determine its usefulness as an evaluation tool.

Giving the participants a choice of activities after they signed up for the class caused problems (Appendix B, Day 3). In the wellness class listing (See Appendix P) several activities were listed from which the class could choose. When the participants showed up for the first day of class they wanted one of two things:

1. To briefly review each of the activities during the summer session.
2. To participate in only one of the activities that was listed, e.g., one participant signed up hoping that the class would play volleyball for the entire session.

Therefore, no matter what activities were chosen, the participant could not get his/her number one choice. This caused people to eventually drop the class. A statement from the instructor fieldnotes Appendix B, Day 4, best describes this situation.

> If I would have just done this stuff in a class entitled basic exercise or tennis then everyone would have signed up for his/her number one choice. I could have then worked my curricular goals into the class. Sometimes I think that all of this education has trained me to ignore the obvious.

After this entry in the fieldnotes, the health enhancement curriculum was implemented in a beginning weight training course. The results of this effort are discussed in the Weight Training Course, Summer, 1987.

Finally, there were four adherence techniques implemented: enjoyment, buddy systems, coping skills and individualization. More techniques were not implemented because most of the participants were already exercising on a regular basis (see Appendix D, pre-interviews). The techniques that were implemented were accepted well by the participants. One technique that was of particular interest was the buddy system. However, with only seven people it was impossible to make good matches according to skill level and interests. Therefore, the instructor was unable to implement this technique with any effectiveness.

Pre-Interviews

The primary function of the pre-interviews was to develop a positive environment. In this respect the interviews were very effective (Appendix D, Interviews 1, 3, 6, 7, 8). In the spring class pre-interviews were not used and the instructor struggled with the environment and the relationship that he had with the participants. The pre-interviews set up a situation that allowed the instructor to interact with each person on an individual basis, which proved to be invaluable.

The interviews also provided the researcher with some unexpected information. It was discovered that all but two participants were already exercising on a regular basis (Appendix D, Interviews 2, 3, 4, 5, 6, and 8). The two participants who were most in need of this type of curriculum were not able to participate. One participant could only get a 30-minute lunch break and the other was too sick to participate. This left the class with a relatively fit, responsible and motivated group of individuals, hardly the population that could most benefit from the Health Enhancement Curriculum.

Health Enhancement Model (Wellness Weight Training) Summer, 1987

Subjects

The subjects represented a diverse group. Seven of the participants were males and seven were females. The groups ages ranged from late twenties to early sixties. The participants had a variety of reasons for weight lifting (health benefits, social and

self-esteem). A more detailed description of each participant is given in the participant post-interviews.

Activity Selection List

The Health Enhancement Model was implemented in an MSU Wellness Weight Training course during the Summer of 1987 to see if the model or parts of the model could be implemented in a regular wellness activity class. Because the entire class signed up for weight training, it was assumed that every student was participating in the activity that was his/her number one choice. Therefore, the Activity Selection List was not needed. Whether this choice was made from an enjoyment or health related point of view varied widely among participants.

Barrier List

Ten participants filled out the barrier list. All but two of the participants selected lack of time as a primary barrier to exercise. These two participants wrote: "I do work out on a regular basis" (see Appendix M, Spring Weight Training). Other commonly cited barriers were family responsibilities and too much work. Generally speaking, these participants had fewer barriers than the participants in either Sampler class.

Goal Summary Sheet Results

The instructor's goal summary sheet revealed that goals one and two received the most attention. Goal one (exercise adherence) was facilitated 20 times. Similarly, goal two (avoiding exercise

dependency via self-responsibility) was facilitated 19 times. Goal three (providing the participant with a variety of experiences and a base of knowledge) was facilitated eleven times. Finally, goal four (fun/enjoyment) was facilitated five times.

## Multidimensional Health Locus of Control Results

The pre-test mean scores indicated that the participants entered the program with a strong internal health locus. In fact, all but one of the participants were above the mean scores 27.38 (indicating more internality, see Appendix N, HLC Information) for persons engaged in preventive health behaviors. A pure internal would score high on the IHLC and low on both the PHLC and CHLC scales. Five of the participants were clearly pure internals.

Two scales were used to measure the participants degree of externality: PHLC and CHLC. The class mean score for these scales were below the averages given for adults taking part in preventive health behaviors. These scores indicate that the class had considerably less of a belief in the power of external forces in determining his/her health than the average person engaged in health promoting activities (see Appendix N, HLC INformation).

The post-test results showed few changes. The internal scores were within a point of the pre-test scores. The external mean scores were within less than half a point of the pre-test mean scores.

## Attendance Records

Attendance records were kept on twelve weight training participants. The participants missed 40 percent of the class

sessions. Twenty-one percent of the absences were excused (the guidelines for excused absences was given in the original curriculum model). Three of the participants dropped the class due to lack of time. Seventy-five percent of the students adhered to the program through the summer session.

Instructor Fieldnotes

Much of the information that was gathered from this experience came from the instructor's fieldnotes. The notes describe what happened (changes or meaning that was derived from the experience) with the students, curriculum or the instructor.

Changes in the Students. There were very few changes that took place with these students. However, one significant change was observed. At the beginning of the summer session the participants approached the instructor with a plethora of questions and requests. The requests primarily involved the instructor doing something for the participant. One of the more common requests was to develop an individualized weight lifting program. This situation was very similar to the traditional doctor/patient relationship. The participant had a problem and the instructor could give the cure with an "exercise prescription". This situation was avoided at all costs by maintining a facilitator role (see Appendix O, Don's Observations). After the fifth session, the participants were making decisions about their programs and taking responsibility for what they would get out of the program (Appendix C, Day 5, 7, 8, and 9). This was the primary change that was observed with the students.

Changes in the Instructor. This class allowed the instructor to gain confidence in himself and the curriculum. He discovered that the curriculum (or parts of the curriculum) could be implemented in a regular activity class. There was no need to have a special class called the "Sampler" to do this. The curriculum could be implemented in any activity class. The degree to which the curriculum can be implemented will vary depending on the group and the type of activity. Generally speaking, these participants were very receptive to information that was not related to weight training, e.g., adherence techniques.

Changes in the Curriculum. The class environment was very conducive for learning throughout the summer session. Each time a component of the curriculum was implemented the class environment was improved. This, more than any other single factor facilitated the implementation of the curriculum.

Also, some activities may be more effective for working on certain goals. For example, the weight training class worked well for developing self-responsibility and decision-making skills (Appendix C, Day 1). However, a group who had problems exercising regularly, e.g., a weight reduction class would be more receptive to and in need of the adherence techniques. The curriculum needs to be implemented in other settings so that more definitive answers can be found.

Finally, several adherence techniques were effectively implemented in this setting. The techniques that were implemented and accepted by the students included the following: goal setting, support systems (weight training is a good activity for implementing

this technique), individualization, coping throughts, positive reinforcement, and disassociative training.

Post-Interviews

Valuable information about the participants was gained from the post-interviews. Specifically, it was discovered that most of the participants had achieved many of the goals of the Health Enhancement Curriculum. For example, most of the participants were exercising on a regular basis before the weight training class started (Appendix E, Interview 1, 2, 3, 5, 6, 7, and 8). Many of the exercise regimes exceeded the Health Enhancement guidelines for regular exercise.

Secondly, there were numerous instances when the participants made statements that indicated how they had taken responsibility for a healthy lifestyle (Appendix E, Interview 1, 2, 4, 6, and 8). One of the participant's comments was very applicable to the goals of the Health Enhancement Curriculum. The comments are summarized from the original interview records (Appendix E, Interview 4):

> "I have developed a weight training program from the information that I have received from three different instructors". The program was very detailed and more than anything I would have developed. Andy took a lot of pride as he described his program to me. "My reason for lifting is that I was kind of a wimp for most of my life. I know just because of my genetics that I don't have many years left and I want to go out with a bit of a bang. I can see results from this training and this really motivates me. I don't lift weights on my legs because I walk a lot (the liquor store is on the other side of town). Also, I smoke a pipe and I have for 30 years. I am well aware that this is bad for me but it is one thing in life that I really enjoy. I am not going to stop".

Andy is the perfect wellness person in an imperfect society. He is informed on critical lifestyle topics that affect his health. Andy

has considered this information from multiple perspectives, not just the physical domain, and has made choices that can most benefit him. This is the purpose of the curriculum.

Finally, other relevent information was gained from two questions: What reasons the participants had for taking the class, and what adherence techniques (plan) were utilized for maintaining regular adherence to exercise.

Everyone in the class gave a health related reason for exercising. However, several other reasons were commonly given for exercising, including discipline, socialization and fun. When asked what techniques aided in maintaining adherence to exercise the participants most commonly stated that making exercise a priority and the environment (fun, liked the music, enjoyed the participants/instructor, class structure) (see Appendix E, Interview 1, 4, 5, 6, 7, and 8). In fact, only two people (see Appendix E, Interviews 3 and 4) concluded that they continued to exercise for physical/health related reasons.

# CHAPTER 6

## SUMMARY AND CONCLUSIONS

In this section, the author will discuss common trends and significant themes that occurred with the participants, instructor, and the curriculum in all three curriculum implementations (Spring Sampler, Summer Sampler, and Summer Wellness Weight Training). Also, effectiveness of the qualitative research methods will be evaluated.

### Participants

Information that was gained from the participant pre-/post-interviews, instructor's fieldnotes, and the MHLC indicated that most of the participants had taken control of their physical health prior to taking the Health Enhancement Curriculum courses. There were changes that took place with individuals or within a given class, e.g., the class had a more internal health locus orientation after being exposed to the Health Enhancement Curriculum. However, the only consistent finding within the three settings was that the majority of the participants did not need to significantly change their lifestyle to meet the curriculum goals. This conclusion could have very practical applications for the MSU Wellness Program. If these classes are a representative sample of wellness classes it would seem prudent to adopt other recruitment techniques to meet the requirements of a more needy university population.

In all three settings the most commonly cited reason for not exercising on a regular basis was lack of time. The next two most common reasons were family responsibilities and too much work. Finally, being too tired or having more important things to do was shown to prevent some participants from exercising. The other factors found in the barrier list were not consistently identified.

The average participant attendance rates for the three classes were approximately 80% and the adherence rates were 75%, although one class was cancelled early in the quarter because of attendance problems. Most exercise programs in the United States and Canada have adherence rates of approximately 50% after six months. However, it is important to note that the Health Enhancement Classes lasted two to three months. Also, the guidelines used for an excused absence in this study vary significantly from those used by other investigators (if the investigator used any guidelines at all). A six-month adherence follow-up was done on the Spring Sampler Class. It was found that all of the participants were active during the summer. However, none of the participants' activity regime was within the guidelines given for long-term exercise adherence in the Health Enhancement Curriculum. Therefore, the classes long-term adherence rate was zero.

The changes in the participants were minimal or non-existent. Most of the participants in all three settings demonstrated self-responsibility and effective decision-making skills towards their physical health. However, it is very questionable that these characteristics were due to the participants' exposure to the Health

Enhancement Curriculum. As mentioned earlier, most of the participants had an internal health orientation prior to taking the classes. At best, the participants may have been put into situations that required them to think about their role in developing/maintaining a healthy lifestyle. This may have positively affected a small portion of the participants.

Curriculum

Four areas of significance were identified within the curriculum as a result of the implementation processes. First, there was a change in the curriculum focus and goals. Secondly, it was found that six exercise adherence techniques were easily and effectively implemented in the class settings. Thirdly, the need for developing a positive environment was shown. Fourthly, the importance of using the information and techniques in the curriculum as a general guide was clearly shown.

When the model was put into practice it became evident that the curricular focus and goals needed to be modified to better meet the needs of the wellness class setting. The reason for this modification is given in the instructor section of this chapter (planned and functional curriculum). This conclusion is supported by information in the Summer Sampler goal summary sheets, changes in the curriculum and changes in the instructor section of the class results. Originally, the curriculum focus was on adherence to exercise. However, during the first part of the summer session the focus of the class had shifted to equally consider four goals. These goals were

modified from the goals found in the original curriculum. They include:

1. To influence the group's lifestyle by increasing adherence to exercise.
2. To avoid exercise dependency on the program or the instructor. This will be facilitated by promoting self-responsibility and effective decision making skills.
3. To provide a variety of experiences and a base of knowledge related to physical activity.
4. To develop an environment that promotes enjoyment and fun for the participants.

Numerous adherence techniques were implemented in the Health Enhancement classes. However, only six techniques were easily implemented and accepted by the students. These adherence techniques were disassociative thinking, positive reinforcement, goal setting, coping skills, individualization and enjoyment. The other techniques that were implemented were too time consuming, e.g., time management, or too difficult for the participants to utilize, e.g., buddy system. The methods that were listed in the curriculum could be effective in other settings. However, they were ineffective with the participants in this study.

A reoccurring theme that became apparent in the instructor's fieldnotes was the need to develop a positive environment, i.e., a setting where the instructor is comfortable, the participants are uninhibited, change can take place and people can enjoy themselves. Without this environment none of the goals associated with the

Health Enhancement Curriculum can be optimally facilitated. Developing an environment such as this is one of the instructor's primary responsibilities. When this environment did not exist, the implementation of the curriculum was more of a uncomfortable struggle for the students and the instructor.

Finally, it was discovered that only those techniques that seem appropriate for the setting should be used. For example, the activity selection list was used because a choice of activities had been shown to increase exercise adherence. However, the list was found to be useless in a wellness program that already gave the participants a choice of activities. All the list did was give some of the participants his/her number one choice. This point (and there are many other similar examples in the instructor fieldnotes) helps to show why the curriculum should be used as a general guide for instruction, evaluation and curricular decisions. The instructor's thoughts in a given setting are extremely important to consider because he/she is living the experience. The curriculum was written to provide the wellness instructor with general guidelines and to aid in decision-making. This is how the model should be used.

Instructor

Two meaningful changes took place for the instructor. These results are summarized from the "change in the instructor" section of the three class implementations. First, a curriculum was developed that differs from the predominent curricula found in physical education and other health related fields. This was a major

conflict that the instructor needed to resolve. The goals and ethical considerations were structured with the instructor's belief system as a major consideration. This allowed the functional curriculum to be alligned with the program goals/ethical considerations. Secondly, the instructor developed realistic expectations and rewards that can be derived from this type of experience.

An unexpected outcome of this experience was that the instructor resolved a conflict that he had with the way that most wellness activity classes were taught. The instructor felt that there was no fundamental difference between a wellness class and physical education or fitness center class. All of these related fields primarily utilized a curriculum with a discipline mastery emphasis. This experience allowed the instructor to develop a curriculum that better reflected the concepts of the wellness movement; e.g., self-responsibility and adherence to health promoting activities. Also, the three class settings allowed the instructor to put his theories into practice and develop a more workable and effective model. As a result, a workable model that differentiates this wellness curriculum from the predominent curricula found in other health related fields was developed, thereby resolving the instructor's conflict.

Developing a curriculum that reflected the instructor's educational philosophy was very important. All of the class sessions had a lesson plan that reflected the Health Enhancement planned curriculum (see the instructor fieldnotes, behavioral objective section in all three settings). However, many of the potential educational situations that occurred within the gym were not planned

(functional curriculum). Therefore, the instructor was often required to take an unplanned situation and turn it into a learning experience. It was found that the unplanned experiences were carried out in a manner that was aligned with the curriculum philosophy and goals. This was especially true after the modifications in the curriculum goals were made. Because the instructor had developed the philosophy and goals of the curriculum, the planned and unplanned instruction (functional curriculum) was a natural and sincere process.

Next, the instructor developed a more realistic set of expectations with regard to the outcomes that can be gained from this process. The instructor hoped for dramatic changes in the students. These changes did not take place. The most that can be realistically hoped for is that a participant may take some action to promote his/her physical health because he/she wants to better themselves, e.g., buying a stationary bike. The curriculum did not cause unusually high long-term adherence rates or large changes in the participants' health locus of control. However, the curriculum is designed to work towards these types of goals which are important and needed by society. The three implementations allowed the instructor to change the curriculum and make it more functional for the wellness classes as they now operate at MSU. The instructor needs to accept the ups and downs of this process and be satisfied with this effort and these types of results.

Research Methods

Doing research that was centered around qualitative techniques provided the investigator with two benefits that would not have occurred using the natural science paradigm. First, the investigator was not confined to the boundaries and assumptions of the natural science paradigm. This allowed the instructor to grow and change during the research process. If the investigator would have been confined to the original problem statement (increasing adherence to exercise) copious amounts of meaningful information related to the participant, curriculum and the instructor would have been lost. Specifically, the investigator would not have been able to resolve a professional conflict related to curricular emphasis in wellness. If this conflict had not been resolved, the investigator would have shifted to areas of human development other than the development of people "through the physical".

Second, this research paradigm allowed the investigator to describe an educational process within a naturalistic setting. That is to say, the research was carried out in an open environment that is almost identical to a real life situation. This latitude allowed the researcher to implement a curriculum within a setting that had one primary goal: to what needs to be done to make this curriculum as effective as possible for this setting. This is what instructors try to do on a daily basis. Therefore, this type of research has very direct application for the wellness instructor. The practitioner can review what happened throughout the entire process instead of the pre-/post-results. What happens to the participants, the instructor

and the curriculum itself in between the beginning and the end ("often referred to as the black box"), i.e., are part of the process of teaching. Research describing the process of curriculum development and implementation will help the instructor to be more effective when he/she attempts the same type of educational endeavor. This is especially true when the results are described in terms of meaningful changes for the students, curriculum, and the instructor.

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# APPENDICES

# APPENDIX A

## INSTRUCTOR FIELDNOTES SPRING SAMPLER

The information from the Spring Sampler instructor fieldnotes were not included in the Appendix because the volume of information would have been too cumbersome to handle. However, the fieldnotes are on file in the main office of Health and Human Development, Montana State University. If anyone wishes to review this information he/she should contact the following address:

Department of Health and Human Development
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Bozeman, MT 59717
Telephone (406) 994-4001

# APPENDIX B

## INSTRUCTOR FIELDNOTES SUMMER SAMPLER

The information from the Summer Sampler instructor fieldnotes were not included in the appendix because the volume of information would have been too cumbersome to handle. However, the fieldnotes are on file in the main office of Health and Human Development, Montana State University. If anyone wishes to review this information he/she should contact the following address:

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Telephone (406) 994-4001

# APPENDIX C

## INSTRUCTOR FIELDNOTES WEIGHT TRAINING CLASS

The information from the Weight Training instructor fieldnotes were not included in the appendix because the volume of information would have been too cumbersome to handle. However, the fieldnotes are on file in the main office of Health and Human Development, Montana State University. If anyone wishes to review this information he/she should contact the following address:

Department of Health and Human Development
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# APPENDIX D

## PARTICIPANT PRE-INTERVIEWS

The information from the participant pre-interviews were not included in the appendix because the volume of information would have been too cumbersome to handle. However, the interviews are on file in the main office of Health and Human Development, Montana State University. If anyone wishes to review this information he/she should contact the following address:

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# APPENDIX E

## PARTICIPANT POST-INTERVIEWS

The information from the participant post-interviews were not included in the appendix because the volume of information would have been too cumbersome to handle. However, the interviews are on file in the main office of Health and Human Development, Montana State University. If anyone wishes to review this information he/she should contact the following address:

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Bozeman, Montana 59717
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# APPENDIX F

## GOAL SUMMARY SHEETS

# GOAL SUMMARY SHEETS

Documentation- FN-Instructor Fieldnotes
BO-Behavioral Objectives
JQ-Journal Questions
DS-Daily Summary
I-Interview

## Spring Sampler

| DAY | GOAL IMPLEMENTATION AND DOCUMENTATION |
|---|---|
| 1 | 1-FN 2-FN,BO 3-FN 4-FN 4-FN 1-FN |
| 2 | 4-FN,BO 3-FN |
| 3 | 3-FN 1-FN,BO 1-FN,BO 1-FN |
| 4 | 3-FN,BO 1-FN 4-FN 3-FN 1-JQ 4-FN |
| 5 | 3-FN,BO 3-FN,BO 2-FN,BO 2-FN 3-FN,BO 1-FN |
| 6 | 3-FN 1-FN 2-FN,BO 1-FN 2-FN 1-FN 2-FN |
| - | 1-FN,BO 2-FN,BO 1-FN 2-FN |
| 7 | 1-FN,BO 2-FN,BO 1-FN,DS 2-FN,DS 4-FN,DS |
| - | 2-FN |
| 8 | 1-FN,BO 2-FN,BO,JQ 4-FN,BO,JQ 2-FN,BO 4-FN |
| - | 1-FN 2-FN,DS 2-FN,JQ 1-FN |
| 9 | 1-BO,FN 3-FN 2-FN |
| 10 | 3-FN,BO 1-FN 1-FN,BO 2-FN 1-FN 4-FN,BO |
| 11 | 1-FN,BO 1-FN 3-FN,BO |
| 12 | 1-FN,BO 3-FN 1-FN 1-FN |
| 13 | 1-FN 2-FN,DS 1-FN,BO |
| 14 | 1-FN 1-FN,BO 3-FN,BO 2-FN 4-FN 1-FN |
| 15 | 1-FN 1-FN 3-FN,BO 3-FN 4-FN |
| 16 | 3-FN,BO 1-FN 2-FN 1-FN 4-FN 1-FN,JQ 1-FN |
| 17 | 1-FN,BO 1-FN 3-FN |
| 18 | 1-FN |
| 19 | 3-FN,BO 3-FN 4-FN |

Goal summary sheet results:

goal 1- 38 goal 3- 18
goal 2- 19 goal 4- 12

Summer Sampler

GOAL IMPLEMENTATION AND DOCUMENTATION

| DAY | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 1-FN,BO | 1-FN,BO | 2-FN,BO | 2-FN,BO | 3-FN,BO | |
| - | 4-FN,BO | 2-FN,BO | 3-FN,BO | | | |
| 2 | 1-FN,BO | 3-FN,BO | 2-FN | | | |
| 3 | 1-FN,BO | 2-FN,BO | 3-FN,BO | 4-FN-BO | 4-FN | 3-FN |
| - | 1-FN | 4-FN | | | | |
| 4 | 4-BO | | | | | |
| 5 | 1-FN,BO | 2-FN | 2-FN | 1-FN | 3-FN,BO | |
| 6 | 1-FN,BO | 2-FN,BO | 2-FN | 4-FN,BO | 1-FN,BO | |
| - | 2-FN,BO | 3-FN,BO | 1-FN | | | |
| 7 | 1-FN,BO | 2-FN | 3-FN,BO | 2-FN | 1-FN,BO | 2-FN,BO |
| 8 | 2-FN,BO | 2-FN,BO | 1-FN | | | |
| 9 | 1-FN | | | | | |
| 10 | 4-FN,BO | 2-FN | 1-FN | 2-FN | 4-FN | |

Goal summary sheet results:

goal 1- 16  goal 3- 8
goal 2- 16  goal 4- 8

Individual Goal Summary Sheets

| PARTICIPANT | GOAL IMPLEMENTATION AND DOCUMENTATION | | | |
|---|---|---|---|---|
| 1 | 4-DS | 2-FN | 4-FN | |
| 2 | 4-FN | 1-FN | | |
| 3 | 2-I | 2-I | 1-I | |
| 4 | 2-FN | 4-DS | 4-FN | 2-FN |
| 5 | - | | | |
| 6 | 2-FN | 1-FN | | |
| 7 | 2-FN | 1-FN | 1-FN | |

Individual goal summary sheet results:

goal 1- 5  goal 3- 0
goal 2- 7  goal 4- 5

Weight Training

| DAY | GOAL IMPLEMENTATION AND DOCUMENTATION |
|---|---|
| 1 | 1-FN,BO 2-FN,BO 1-FN 2-FN |
| 2 | 3-FN 3-FN,BO 1-FN,BO 1-FN 2-FN |
| 3 | 2-FN 2-FN 3-FN,BO 2-FN 3-FN,BO 2-FN,BO |
| - | 3-FN 1-FN,BO 2-FN |
| 4 | 1-FN,BO 2-FN 2-FN 1-FN,BO 4-FN |
| 5 | 1-FN,BO 2-FN,BO 1-FN,BO 3-FN,BO 2-FN,BO |
| - | 1-FN 1-FN |
| 6 | 1-FN 2-FN 3-FN 3-FN,BO 2-FN 1-FN 2-FN |
| 7 | 1-FN,BO 1-FN 1-FN,BO 1-FN 4-FN |
| 8 | 1-FN,BO 2-FNBO 1-FN,BO 2-FN 4-FN |
| 9 | 3-FN,BO 1-FN,BO 4-FN 1-FN 2-FN 2-FN,BO |
| 10 | 2-FN 2-FN 3-FN,BO 1-FN,BO 4-FN |

Goal summary sheet results:

goal 1- 20  goal 3- 11
goal 2- 19  goal 4-  5

# APPENDIX G

## COURSE DESCRIPTIONS

BEGINNING TENNIS --- limit 24
For novices and beginners, this class will emphasize the fundamentals and basic strategies of this popular sport. Participants must provide their own equipment.
Instructor: Corene Schwartz
Meeting Place: Tennis Courts (9-16)

GOLF---limit 25
This new class will address the fundamentals of beginning golf. Instruction will include club grip, stance, swing, etiquette and rules of the game. Participants must supply their own equipment and a dozen golf balls. A "starter set" is recommended. The PE Equipment room has limited supplies of equipment available for check-out. The class involves practice hitting. Golf course play is not included in this course.
Instructor: Pat Whitlock
Meeting Place: Romney Main Floor (3rd floor)

THE SAMPLER---limit 20
This class is designed (but not exclusively) for those people who have difficulty exercising on a regular basis. A choice of several activities will be offered (i.e. racquetball, volleyball, strength training, walk/jog, etc.) to help make physical activity a regular part of your life. The class uses a non-traditional approach to meet the need of the individual.
Instructor: Tim Dunnagan
Meeting Place: Romney Main Floor (3rd floor)

OUTDOOR VOLLEYBALL---limit 25
Want to have fun in the sun? Try a volleyball class this summer. This is primarily an introductory course, however, intermediate players are also welcome. The class will emphasize basic skills, strategies and most of all, having fun.
Instructor: Tim Dunnagan
Meeting Place: Romney Main Floor (3rd floor)

WEIGHT TRAINING I --- limit 25
The concepts of various weight programs and the correct way to use weight equipment provide you with a class that improves muscular endurance and strength. Personal weight programs will be designed for each participant.
Instructor: Tim Dunnagan
Meeting Place: PE Complex Weight Room

# APPENDIX H

## CLASS OBSERVERS

OBSERVATION OF TIM'S WEIGHT TRAINING CLASS, 7/6/87
Don Hellison

I observed Tim's class subversively by pretending to ride a stationary bike. (However, because it's hard to pretend to ride, I wound up getting some exercise despite my best efforts.) I only observed the first part of class.

The students seemed quite purposeful. They either came in and got to work right away or checked in with Tim. He talked individually with several class members. I couldn't hear all of this conversation, but he was apparently trying to help those who had missed some sessions. The class climate was relaxed and informal yet clearly developmental.

Tim held a group meeting. I think everyone came over, although he told me that some would continue to work out. Tim mentioned the barriers questionnaire but focused his talk on three concepts (as I remember): individualizing the workout (weight and pace), personalizing the workout (different exercises for different needs and interests), and the overload concept. The message was brief but clear: it's your body and your values; I (Tim) am here to facilitate.

I didn't realize that Tim wanted a formal report, so I didn't take any notes when I left the weight room. Therefore, this report is probably incomplete. On the other hand, what I have written made an impression or I wouldn't have remembered it two days later.

This material is based on the observation of a Montana State University Wellness Class taught by Tim Dunnigan. My observations are based on my perceptions of the rest of the participants's reactions and on my own reactions to the environment created by the instructor. It should be further stated that Tim and I both believe that the instructor in a situation like this is, at least in part, responsible for the environment in the class.

I felt that the instructor modeled a very relaxed and positive attitude both towards health and activity. He set the tone by his pattern of speech and style of delivery which was very low key. The slide presentation gave us a good sense that Tim was interested in, not only preaching wellness, but living in a manner consistant with his beliefs.

Tim has two other characteristics which allowed him to be an effective communicator in this situation. His body language which is very relaxed but shows his general level of fitness is an asset. Tim genuinely likes people and shows this by his friendly demeanor and his habit of learning and using peoples names early in the session.

I felt that Tim was so relaxed that this might cause some anxiety on the part of some of the audience. It seems to me that it is a natural inclination for people in situations, such as these, to expect to be directed by the instructor. Particularly in situations where the participants are coming from a work environment which is very structured this could be a problem.

Tim also used some "buzz words" which I was not familiar with and this was uncomfortable for me. At one point he discussed blocking factors with out much explanation of what this meant. I think that their is a natural inclination within any discipline to use a specific vocabulary but this can be a hinderance to good communication when dealing with the public.

I received two very clear messages from Tim's presentation. The first message was that this was going to be a lowkey experience and that if that was not what I was looking for I would probably need to look elsewhere. The second message was that wellness was a lifestyle decision which needed to be carried into other parts of my life rather than being relegated to noon hour three times a week at Montana State.

# APPENDIX I

## PARTICIPANT JOURNAL ENTRIES/CLASS SUMMARIES

FIRST JOURNAL ENTRY

Instructor's Question:

Why are you taking this class?

Participant's Response:

I am in poor physical condition and I hope this class will help me experience options and equipment available so that I can develop some program for myself that will help me develop and maintain better physical condition.

Instructor's Response:

These are some of the activities that could relate to your goals:

-walk/jog
-aerobic dance
-swimming
-weight training
-stationary bike
-X-country skiing
-biking
-hiking

There are many parts to consider with physical conditioning; e.g., strength, cardiovascular system, weight flexibility, etc. If you decide which part(s) that you would like to concentrate on, that would narrow down the list. Also, the idea of exploring options makes good sense to me.

FIRST JOURNAL ENTRY - (continued)

Instructor's Question:

Why are you taking this class?

Participant's Response:

1. Good time of day.
2. Activities not weather related.
3. Looking for "structured" activities.

Primary interests are cycling and X-country skiing - both "require" certain weather conditions. (I don't like riding in rain & snow!) Therefore, workouts are sporadic this time of year. New job is very time demanding (up to 60 hours a week) so the 6:45 a.m. slot was attractive. I have some interest in cross training.

Instructor's Response:

1. I have some stuff on cross training.
2. Go ahead and increase the intensity of your workout at a reasonable pace (intensity, duration, etc.).
3. You might benefit from a time increment program.
4. You know what you want to do... go with that.

You possibly could benefit from indoor activities; e.g., swimming, racquetball, cycle ergometer, badminton, weight training, etc. You could also develop structured activities for yourself.

FIRST JOURNAL ENTRY - (continued)

Instructor's Question:

Why are you taking this class?

Participant's Response:

I enjoy hunting and hiking into backcountry lakes. I realize that the older I get the more unwise it is to do these hikes without some conditioning.

Another reason is to tone up my muscles so I am not stiff and sore the day after I do work out or go hiking.

Instructor's Response:

Good!

You have identified what types of physical activities that you like and why you want to exercise.

Possible activities that would relate to your goals include:

1. Walk/jog (hunting etc.).*
2. Weight training (work).
3. Basic exercises (work, lower back).
4. Biking (not as good as walk/jog).

*Note: these are some possibilities... the choice is yours.

SECOND JOURNAL ENTRY

Instructor's Question:

If there was a scientific discovery that showed that physical activity did nothing to enhance your health, would you still exercise? If the answer is no, why wouldn't you exercise? If your answer is yes, what activity would you choose and why?

Participant's Answer:

While health enhancement is (would be) a major factor, I would continue to cycle/ski because it is fun. Weight training, cycle ergometer..... maybe.

Instructor's Question:

If there was a scientific discovery that showed that physical activity did nothing to enhance your health, would you still exercise? If the answer is no, why wouldn't you exercise? If your answer is yes, what activity would you choose and why?

Participant's Response:

No I think most exercise is boring and it is hard to find a time to fit it in so that is is part of the regular rhythm of my life.

Instructor's Response:

This pops up alot. Possibly if we tried outdoor activities that were not fitness oriented, we could change the activity from boring to fun. Then again, this could be difficult at 6:45 a.m. I liked your suggestion about racquetball, this might be a possibility.

Also, a time regiment program may help at making exercise a regular rhythm of your life... it may or may not.

SECOND JOURNAL ENTRY - (continued)

Instructor's Question:

If there was a scientific discovery that showed that physical activity did nothing to enhance your health, would you still exercise? If the answer is no, why wouldn't you exercise? If your answer is yes, what activity would you choose and why?

Participant's Response:

I would exercise only enough to make me feel comfortable when I hunt or hike into lakes to fish.

In general, I find most exercise boring.

If I had the time and our weather were better, my choice of exercise would be hiking in the mountains.

Instructor's Response:

May want to try out something else; e.g., you mentioned racquetball. You might benefit more from trying out games (tennis, volleyball, handball, etc.) instead of the more traditional activities I listed in the First Journal. The activities listed in the First Journal will meet your goals. However, if they are boring, they may be useless. Combine the information you have throughout the two journal entries.

THIRD JOURNAL ENTRY

Instructor's Question:

I have talked about time management and you have the outline that has "all you ever wanted to know about time management and were afraid to ask". What practical benefit (if any) could this "stuff" have for you?

Participant's Response:

I do most of these things already and I think they are very helpful in managing time. I would never make it through my days without it.

Instructor's Question:

I have talked about time management and you have the outline that has "all you ever wanted to know about time management and were afraid to ask". What practical benefit (if any) could this "stuff" have for you?

Participant's Response:

It is the only way I can get things done, but I don't plan enough time for me.

THIRD JOURNAL ENTRY

Instructor's Question:

I have talked about time management and you have the outline that has "all you ever wanted to know about time management and were afraid to ask". What practical benefit (if any) could this "stuff" have for you?

Participant's Response:

I do most of these things already and I think they are very helpful in managing time. I would never make it through my days without it.

Instructor's Question:

I have talked about time management and you have the outline that has "all you ever wanted to know about time management and were afraid to ask". What practical benefit (if any) could this "stuff" have for you?

Participant's Response:

It is the only way I can get things done, but I don't plan enough time for me.

FIRST CLASS SUMMARY - DAY FIVE

Participant's Response at Day Five:

I feel comfortable with the size of the class. I am shy and don't like events; and I appreciate your sticking with us, sorry the class is so small.

The time (6:45 a.m.) is not the most convenient.

Participant's Response at Day Five:

Meets

1. Need of commitment to class.
2. Chance to take part in other areas of exercise.
3. Early workout (feel better all day).
4. Input from instructor.

Participant's Response at Day Five:

I appreciate that we are staying with the class even though there are only a few of us. I like figuring out what I need to have fun working toward my goal.

I feel sick every morning and need to be sure to get a good work out in the time we have and still get to work.

SECOND CLASS SUMMARY - DAY 7

Participant's Response:

It feels good enough; I don't want to build, I just want to be able to use what I have now without being stiff and sore.

I find one thing I don't like is leaving home to exercise and giving up my morning quite time for this.

I would like to develop a program I can do in the quite at home.

Participant's Response:

Activities are fine, I need to increase "intensity" (duration) to feel like I have done something.

Participant's Response:

It is worth it to come here; but I do not like it. I'm not sure I would even do this except in this class, but I am glad to be trying it and working at it. I would like to learn to play racquetball.

Participant's Response:

I seem to tolerate the bikes more now that I am listening to tapes while riding.

I have seen some increase in my exercise time on the bikes.

Would like to try other forms of exercise.

# APPENDIX J

## ATTENDANCE RECORDS

# ATTENDANCE RECORDS

KEY X-present A- unexcused absence E-excused absence

Spring Sampler

PARTICIPANT

| DAY | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | X | E | X | X |
| 2 | X | X | X | X |
| 3 | X | X | X | X |
| 4 | X | X | X | X |
| 5 | X | X | X | A |
| 6 | X | X | X | A |
| 7 | X | X | X | X |
| 8 | X | A | X | X |
| 9 | A | X | X | X |
| 10 | X | X | X | X |
| 11 | X | X | X | A |
| 12 | X | X | A | A |
| 13 | X | X | X | A |
| 14 | X | X | X | A |
| 15 | X | A | X | A |
| 16 | X | X | X | A |
| 17 | A | X | X | A |
| 18 | X | A | A | A |
| 19 | X | X | X | A |
| 20 | X | X | X | A |

Attendance rate- 83%
Adherence rate- 75%

Summer Sampler

PARTICIPANT

| DAY | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | X | E | X | X | X | X | X |
| 2 | X | E | X | X | X | X | X |
| 3 | X | E | X | E | X | X | X |
| 4 | X | X | X | E | E | X | X |
| 5 | E | X | A | E | X | X | X |
| 6 | E | X | X | E | E | A | A |
| 7 | E | E | X | E | X | A | X |
| 8 | X | E | X | E | E | A | X |
| 9 | X | A | A | E | E | A | A |
| 10 | E | X | A | E | X | A | A |
| 11 | E | E | A | E | X | A | A |

Attendance rate- 80%
Adherence rate- 71%

Weight Training

PARTICIPANTS

| DAY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | X | X | X | X | E | X | X | X | X | X | E | E |
| 2 | X | E | X | E | X | X | X | X | E | E | E | E |
| 3 | X | X | A | X | A | X | E | E | X | X | E | X |
| 4 | X | A | X | E | X | X | E | E | X | E | X | X |
| 5 | A | E | X | E | E | X | X | X | X | E | X | X |
| 6 | X | X | X | E | X | A | X | X | E | E | X | A |
| 7 | A | X | X | E | X | X | A | X | X | X | A | A |
| 8 | X | E | X | X | X | E | A | X | X | X | A | A |
| 9 | A | X | X | X | X | X | A | X | X | X | A | A |
| 10 | X | E | X | X | X | X | A | X | X | X | A | A |
| 11 | A | X | X | E | X | X | A | X | X | X | A | A |
| 12 | X | X | X | X | X | X | A | X | X | X | A | A |

Attendance rate- 81%
Adherence rate- 75%

# APPENDIX K

## MULTIDIMENTIONAL HEALTH LOCUS OF CONTROL RESULTS

VANDERBILT UNIVERSITY

NASHVILLE, TENNESSEE 37240 TELEPHONE (615) 322-7311

*Health Care Research Project • School of Nursing • Direct phone 322-2520*

Dear Colleague:

Thank you for your interest in the Health Locus of Control Scales. Please excuse this form response, but I have so many inquiries requiring similar replies that I have found this to be an efficient means of disseminating information.

You have my permission to utilize the scales in any health related research you are doing. My only request is that you keep me informed of any results you obtain using the scales. In that way I hope to continue to serve as a clearinghouse for information about the scales.

I recommend using the more recently developed Multidimensional Health Locus of Control Scales (Health Education Monographs, 6, Spring, 1978, pp. 160-170) over the earlier, unidimensional HLC Scale (Journal of Consulting and Clinical Psychology, 1976, 44, 580-585), since the newer measures are psychometrically superior and potentially more useful.

If you wish to be added to our mailing list or want additional material, please complete the enclosed interest questionnaire and we will be happy to send it to you. I hope to periodically send additional material related to the use of these scales as it becomes available.

If you have more specific questions, don't hesitate to contact me. Please remember to send me information on any use you make of these scales. I have included a usage questionnaire to facilitate your doing so. I look forward to hearing from you.

Sincerely,

Kenneth A. Wallston, Ph.D.
Professor of Psychology
in Nursing

MHLC Form A

is is a questionnaire designed to determine the way in which different people view certain important health-related issues. Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (6). For each item we would like you to circle the number that represents the extent to which you disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement, then the lower will be the number you circle. Please make sure that you answer every item and that you circle only one number per item. This is a measure of your personal beliefs; obviously, there are no right or wrong answers.

Please answer these items carefully, but do not spend too much time on any one item. As much as you can, try to respond to each item independently. When making your choice, do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe or how you think we want you to believe.

| | | Strongly Disagree | Moderately Disagree | Slightly Disagree | Slightly Agree | Moderately Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| 1. | If I get sick, it is my own behavior which determines how soon I get well again. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. | No matter what I do, if I am going to get sick, I will get sick. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. | Having regular contact with my physician is the best way for me to avoid illness. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. | Most things that affect my health happen to me by accident. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. | Whenever I don't feel well, I should consult a medically trained professional. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. | I am in control of my health. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. | My family has a lot to do with my becoming sick or staying healthy. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. | When I get sick, I am to blame. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. | Luck plays a big part in determining how soon I will recover from an illness. | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. | Health professionals control my health. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. | My good health is largely a matter of good fortune. | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. | The main thing which affects my health is what I myself do. | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. | If I take care of myself, I can avoid illness. | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. | When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me. | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. | No matter what I do, I'm likely to get sick. | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. | If it's meant to be, I will stay healthy. | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. | If I take the right actions, I can stay healthy. | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. | Regarding my health, I can only do what my doctor tells me to do. | 1 | 2 | 3 | 4 | 5 | 6 |

Scoring Instructions MHLC Scales

Form A or B

The score on each subscale is the sum of the values circled for each item in that subscale.

| | |
|---|---|
| Internal Items: | 1, 6, 8, 12, 13, 17 |
| Chance Items: | 2, 4, 9, 11, 15, 16 |
| Powerful Others Items: | 3, 5, 7, 10, 14, 18 |

MEAN SCORES FOR MHLC SCALES SUMMARIZED ACROSS TYPES OF SUBJECTS

| SAMPLE | N | IHLC | CHLC | PHLC |
|---|---|---|---|---|
| CHRONIC PATIENTS | 609 | 25.78 | 17.64 | 22.54 |
| COLLEGE STUDENTS | 749 | 26.68 | 16.72 | 17.87 |
| HEALTHY ADULTS | 1287 | 25.55 | 16.21 | 19.16 |
| PERSONS ENGAGED IN PREVENTIVE HEALTH BEHAVIORS | 720 | 27.38 | 15.52 | 18.44 |

# MULTIDIMENTIONAL HEALTH LOCUS OF CONTROL RESULTS

## Spring Sampler Pre-test Results

### INTERNAL HEALTH LOCUS OF CONTROL SCALE

| PARTICIPANT | RAW SCORES FOR THE IHLC SCALE | TOTAL |
|---|---|---|
| 1 | 6, 6, 1, 6, 3, 6 | 28 |
| 2 | 5, 6, 5, 6, 4, 6 | 32 |
| 3 | 4, 5, 5, 6, 6, 5 | 31 |
| 4 | 4, 5, 4, 6, 3, 6 | 28 |

Class mean- 29.75

### CHANCE HEALTH LOCUS OF CONTROL

| PARTICIPANT | RAW SCORES FOR THE CHLC SCALE | TOTAL |
|---|---|---|
| 1 | 1, 1, 2, 1, 2, 2 | 7 |
| 2 | 2, 2, 4, 2, 3, 2 | 15 |
| 3 | 3, 1, 3, 2, 2, 1 | 12 |
| 4 | 2, 2, 2, 1, 3, 4 | 14 |

Class mean- 12

### POWERFUL OTHER HEALTH LOCUS OF CONTOL

| PRTICIPANT | RAW SCORES FOR THE PHLC SCALE | TOTAL |
|---|---|---|
| 1 | 2, 1, 1, 2, 2, 2 | 10 |
| 2 | 2, 1, 4, 1, 2, 3 | 13 |
| 3 | 2, 3, 3, 4, 5, 4 | 21 |
| 4 | 3, 2, 4, 1, 1, 5 | 14 |

Class mean- 17.5

Spring Sampler Post-Test Results

INTERNAL HEALTH LOCUS OF CONTROL SCALE

| PARTICIPANT | RAW SCORES FOR THE IHLC SCALE | TOTAL |
|---|---|---|
| 1 | 6, 6, 1, 6, 5, 6 | 30 |
| 2 | 6, 6, 2, 4, 3, 5 | 26 |
| 3 | 5, 6, 5, 6, 6, 6 | 34 |
| 4 | - - - - - - | - |

Class mean- 30

CHANCE HEALTH LOCUS OF CONTROL

| PARTICIPANT | RAW SCORES FOR THE CHLC SCALE | TOTAL |
|---|---|---|
| 1 | 1, 1, 2, 1, 1, 1 | 7 |
| 2 | 1, 5, 3, 2, 1, 3 | 15 |
| 3 | 1, 2, 4, 6, 3, 1 | 17 |
| 4 | - - - - - - | - |

Class mean- 13

POWERFUL OTHER HEALTH LOCUS OF CONTROL

| PARTICIPANT | RAW SCORES FOR THE PHLC SCALE | TOTAL |
|---|---|---|
| 1 | 3, 1, 1, 1, 1, 1 | 8 |
| 2 | 2, 2, 1, 3, 1, 3 | 12 |
| 3 | 3, 2, 5, 2, 2, 3 | 17 |
| 4 | - - - - - - | - |

Class mean- 12.3

Summer Sampler Pre-test Results

INTERNAL HEALTH LOCUS OF CONTROL SCALE

| PARTICIPANT | RAW SCORES FOR THE IHLC SCALE | TOTAL |
|---|---|---|
| 1 | 5, 6, 5, 5, 4, 6 | 31 |
| 2 | 5, 6, 3, 5, 5, 4 | 28 |
| 3 | 5, 6, 4, 6, 5, 6 | 32 |
| 4 | 6, 6, 4, 6, 5, 6 | 33 |
| 5 | 1, 6, 5, 6, 5, 5 | 28 |
| 6 | 1, 6, 5, 6, 5, 5 | 28 |
| 7 | 5, 5, 5, 6, 6, 5 | 32 |

Class mean- 30.28

CHANCE HEALTH LOCUS OF CONTROL SCALE

| PARTICIPANT | RAW SCORES FOR THE CHLC SCALE | TOTAL |
|---|---|---|
| 1 | 1, 2, 4, 3, 3, 2 | 15 |
| 2 | 3, 1, 1, 1, 4, 1 | 11 |
| 3 | 5, 3, 4, 2, 4, 1 | 19 |
| 4 | 1, 1, 3, 1, 2, 1 | 9 |
| 5 | 2, 1, 2, 1, 1, 2 | 9 |
| 6 | 1, 1, 2, 1, 2, 1 | 8 |
| 7 | 5, 1, 3, 2, 3, 2 | 16 |

Class mean- 12.42

POWERFUL OTHER HEALTH LOCUS OF CONTROL

| PARTICIPANT | RAW SCORES FOR THE PHLC SCALE | TOTAL |
|---|---|---|
| 1 | 2, 1, 2, 2, 2, 3 | 12 |
| 2 | 4, 1, 1, 1, 1, 1 | 9 |
| 3 | 4, 2, 4, 3, 2, 4 | 19 |
| 4 | 3, 1, 4, 2, 2, 2 | 14 |
| 5 | 1, 1, 1, 1, 1, 2 | 7 |
| 6 | 1, 1, 1, 1, 1, 1 | 6 |
| 7 | 1, 1, 1, 1, 1, 6 | 11 |

Class mean- 11.14

Weight Training Pre-test Results

INTERNAL HEALTH LOCUS OF CONTROL

| PARTICIPANT | RAW SCORES FOR THE IHLC SCALE | TOTAL |
|---|---|---|
| 1 | 5, 5, 2, 6, 3, 6 | 27 |
| 2 | 5, 6, 4, 6, 4, 5 | 30 |
| 3 | 6, 6, 3, 6, 5, 6 | 32 |
| 4 | 6, 6, 5, 6, 4, 5 | 32 |
| 5 | 6, 6, 1, 6, 2, 1 | 22 |
| 6 | 4, 6, 4, 6, 5, 5 | 30 |
| 7 | 6, 6, 1, 6, 5, 6 | 30 |
| 8 | 5, 6, 4, 6, 4, 5 | 30 |
| 9 | 5, 6, 5, 6, 5, 6 | 33 |
| 10 | 5, 6, 4, 5, 2, 5 | 27 |
| 11 | 6, 6, 4, 6, 5, 6 | 33 |
| 12 | 6, 6, 2, 5, 2, 6 | 27 |

Class mean- 29.4

CHANCE HEALTH LOCUS OF CONTROL

| PARTICIPANT | RAW SCORES FOR THE CHLC SCALE | TOTAL |
|---|---|---|
| 1 | 2, 2, 4, 1, 2, 3 | 14 |
| 2 | 1, 1, 4, 2, 2, 1 | 11 |
| 3 | 1, 4, 3, 2, 2, 2 | 14 |
| 4 | 2, 2, 1, 2, 2, 2 | 11 |
| 5 | 1, 1, 5, 1, 2, 1 | 11 |
| 6 | 6, 4, 4, 1, 5, 1 | 21 |
| 7 | 1, 1, 1, 1, 1, 1 | 6 |
| 8 | 1, 3, 2, 1, 2, 2 | 11 |
| 9 | 1, 1, 5, 1, 1, 4 | 13 |
| 10 | 1, 5, 2, 2, 1, 1 | 12 |
| 11 | 2, 4, 4, 3, 5, 5 | 23 |
| 12 | 4, 4, 6, 4, 4, 4 | 26 |

Class mean- 14.41

POWERFUL OTHER HEALTH LOCUS OF CONTROL

| PARTICIPANT | RAW SCORES FOR THE PHLC SCALE | TOTAL |
|---|---|---|
| 1 | 1, 1, 1, 4, 1, 2 | 10 |
| 2 | 1, 1, 2, 1, 1, 4 | 10 |
| 3 | 3, 3, 4, 4, 3, 3 | 20 |
| 4 | 2, 1, 1, 4, 3, 4 | 15 |
| 5 | 1, 1, 1, 1, 1, 1 | 6 |
| 6 | 1, 1, 6, 3, 4, 5 | 20 |
| 7 | 1, 1, 1, 1, 1, 1 | 6 |
| 8 | 2, 2, 1, 6, 2, 3 | 11 |
| 9 | 1, 1, 1, 1, 2, 4 | 10 |
| 10 | 5, 1, 4, 4, 2, 3 | 19 |
| 11 | 1, 1, 5, 1, 5, 2 | 15 |
| 12 | 1, 2, 2, 1, 2, 3 | 11 |

Class mean- 13.16

Weight training Post-test Results

INTERNAL HEALTH LOCUS OF CONTROL

| PARTICIPANTS | RAW SCORES FOR THE IHLC SCALE | TOTAL |
|---|---|---|
| 1 | 5, 4, 2, 4, 4, 4 | 23 |
| 2 | 5, 6, 2, 5, 4, 5 | 27 |
| 3 | 6, 5, 4, 5, 6, 6 | 32 |
| 4 | 6, 6, 4, 6, 2, 6 | 30 |
| 5 | 5, 6, 5, 5, 1, 6 | 28 |
| 6 | 5, 6, 2, 6, 5, 6 | 30 |
| 7 | - - - - - - | - |
| 8 | 5, 6, 5, 6, 4, 6 | 32 |
| 9 | 6, 6, 4, 6, 4, 6 | 32 |
| 10 | 4, 5, 2, 5, 4, 5 | 26 |
| 11 | - - - - - - | - |
| 12 | 6, 6, 1, 6, 2, 6 | 27 |
| 13 | 4, 5, 4, 4, 2, 4 | 23 |

Class mean- 28.18

CHANCE HEALTH LOCUS OF CONTROL

| PARTICIPANT | RAW CCORES FOR THE CHLC SCALE | TOTAL |
|---|---|---|
| 1 | 4, 2, 4, 2, 3, 3 | 18 |
| 2 | 3, 4, 3, 2, 1, 1 | 14 |
| 3 | 1, 3, 4, 3, 1, 2 | 8 |
| 4 | 1, 2, 2, 1, 1, 1 | 10 |
| 5 | 1, 1, 5, 1, 1, 1 | 10 |
| 6 | 6, 3, 2, 1, 2, 1 | 15 |
| 7 | - - - - - - | - |
| 8 | 1, 1, 1, 1, 1, 1 | 6 |
| 9 | 1, 5, 5, 1, 1, 1 | 14 |
| 10 | 2, 5, 2, 4, 2, 1 | 11 |
| 11 | - - - - - - | - |
| 12 | 5, 4, 5, 4, 4, 4 | 26 |
| 13 | 5, 1, 4, 4, 4, 4 | 22 |

Class mean- 14.3

POWERFUL OTHER HELTH LOCUS OF CONTROL

| PARTICIPANT | RAW SCORES FOR THE PHLC SCALE | TOTAL |
|---|---|---|
| 1 | 2, 2, 2, 2, 3, 2 | 13 |
| 2 | 5, 3, 1, 4, 2, 4 | 19 |
| 3 | 2, 3, 4, 4, 2, 4 | 19 |
| 4 | 2, 1, 1, 5, 2, 5 | 16 |
| 5 | 4, 1, 1, 2, 1, 1 | 10 |
| 6 | 2, 1, 6, 2, 2, 3 | 16 |
| 7 | - - - - - - | - |
| 8 | 3, 1, 1, 1, 5, 3 | - |
| 9 | 4, 1, 1, 2, 1, 1 | 17 |
| 10 | 4, 1, 2, 2, 2, 2 | 13 |
| 11 | - - - - - - | - |
| 12 | 1, 2, 2, 1, 2, 3 | 11 |
| 13 | 4, 1, 1, 1, 1, 4 | 12 |

Class mean- 14.54

# APPENDIX L

## ACTIVITY SELECTION LIST

# ACTIVITY SELECTION LISTS

The activity list was prioritized according to the activities the class felt that they would enjoy the most (the first activity being the number one choice). This list is a summary of the class results.

## Spring Sampler

1. Weight training
2. Racquetball
3. Tennis
4. Cycle ergometer
5. Volleyball
6. Walk/jog
7. Basic exercise
8. Aerobic Dance
9. Fly fishing
10. Hiking
11. Outdoor photography
12. Badminton

The activity decisions were based on two decisions were based on two considerations; enjoyment and health related needs. This listing is a summary of the class results.

Summer

1.Weight training
2.Basic Exercise
3.Volleyball
4.Racquetball
5.Tennis
6.Cycle ergometer
7.Badminton
8.Dance aerobics
9.Walk/jog
10.Basic exercise
11.Fly fishing
12.Soccer

# APPENDIX M

## BARRIER LIST

## BARRIER LIST

The participants were asked which factors contributed most in preventing the participants from exercising on a regular basis. The number one was placed next to the strongest factor, the number two next to the next strongest factor, as shown in the participant responses listed below. Any factor(s) that did not apply to the participants was left blank. The class results are prioritized below under barriers to exercise in order of relative importance (the first factor being the most significant barrier).

### Spring Sampler Class

| BARRIERS TO EXERCISE | PARTICIPANT RESPONSES |
|---|---|
| 1.Lack of time | 1 1 1 1 1 |
| 2.Family Responsibilities | 3 2 6 6 |
| 3.Too much work | 2 - - - |
| 4.More important things to do | - - 2 2 |
| 5.Lack of skill | - - 3 3 |
| 6.Inaccessible facilities | - - 4 4 |
| 7.Too tired | 4 - - - |
| 8.Cost | - - 5 5 |
| 9.Poor facilities | - - - - |
| 10.No one to exercise with | - - - - |
| 11.Lacking spousal support | - - - - |
| 12.Injuries | - - - - |

Summer Sampler Class Barrier List

| BARRIERS TO EXERCISE | PARTICIPANT RESPONSES |
|---|---|
| 1.Lack of time | 4 3 3 1 1 2 4 2 |
| 2.More important things to do | 3 4 2 5 2 3 5 - |
| 3.Faily responsibilities | 2 1 7 3 - 1 11 1 |
| 4.Too much work | 1 9 9 4 3 6 8 7 |
| 5.Too tried | - 6 5 2 - 4 3 4 |
| 6.No one to exercise with | - 7 107 - 7 1 9 |
| 7.Cost | - 2 4 10 - 12 12 3 |
| 8.Inaccessable facilities | - 5 6 9 - 10 9 6 |
| 9.Poor facilities | - 10 8 11 - 11 10 8 |
| 10.Lacking spousal support | - 8 - 6 - 8 2 - |
| 11.Lack of skill | - 11 - 8 - 9 7 5 |
| 12.Injuries | - 12 - 12 - 5 - - |

Weight Training Class Barrier List

| BARRIERS TO EXERCISE | PARTICIPANT RESPONSES |
|---|---|
| 1.Lack of time | 1 1 1 - 1 2 2 - |
| 2.Family responsibilities | - - 2 - - 1 1 2 |
| 3.Too much work | - 2 - - 2 3 - - |
| 4.More important things to do | - - - 1 - - - - |
| 5.Injuries | - - - - 3 - - - |
| 6.Cost | - - 3 - - - - - |
| 7.Lacking spousal support | - - - - - - - - |
| 8.Poor facilities | - - - - - - - - |
| 9.Too tired | - - - - - - - - |
| 10.Lack of skill | - - - - - - - - |
| 11.Inaccessible facilities | - - - - - - - - |
| 12.No one to exercise with | - - - - - - - - |

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