Self Motivation, Compliance, and Reasons For Attending the La Crosse Exercise and Health Program - Adult Fitness Unit

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ABSTRACT

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This study examined factors such as self - motivation and exercise habits (compliance or noncompliance) as well as participant reasons for attending the La Crosse Exercise and Health Program Adult Fitness Unit. Participants were categorized as compliant (C) or noncompliant (NCOMP), a.m. or p.m., and male or female. Self - Motivation Scores were determined by the Self Motivation Inventory (SMI) and participants were categorized into Low Self Motivators (LSM), Medium Self Motivators (MSM) or High Self Motivators (HSM). In addition, an Evaluation Questionnaire was developed by the researcher which addressed many of the factors relating to program compliance. The two instruments were administered to 79 Adult Fitness Ss, with a return rate of 77.2%. A chi - square test revealed no significant differences between SMI scores and each of the participant groupings. Further, no significant difference was found between exercise habits and each of the groups addressed. The C Ss were more likely to participate in aerobic exercise sessions outside of the program than the NCOMP. More C Ss strongly agreed that their graded exercise test (gxt) was clearly explained to them. A.M. and male Ss joined upon the recommendation of their physician, while p.m. and female Ss joined because of family or spousal influence. A larger percentage of the a.m. Ss believed the exercise sessions did not interfere with daily activities and that the facilities were easily accessible to home and / or work. A larger percentage of the female Ss believed the exercise facilities were clean and pleasant compared to the male Ss.

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CHAPTER I

INTRODUCTION

Americans are choosing to spend more time participating in leisure activity (Powell & Paffenbarger, 1985). Unfortunately, it appears that the activities selected during this leisure time are not those that involve physical activity. Only twenty percent of the United States population exercise to a level that would produce cardiovascular benefit (Stephens, Jacobs, & White, 1985). This is far below the 1990 Department Of Human Services objective of at least sixty percent participation in vigorous physical activity (Department Of Health and Human Services, 1980). At the same time, a shift in mortality has occurred over the years from infectious diseases to that of chronic diseases such as arteriosclerosis and heart disease, according to Rosenstein (1987). It is further suggested, however, that fifty to eighty percent of the deaths due to these diseases can be prevented. Aerobic exercise in the form of a structured, supervised training and nutritional awareness program, may be one way of prevention. These programs have been found to improve functional capacity, exercise tolerance, and quality of life (Oldridge, et al, 1983) The key to the participants' success in a structured, supervised program such as this lies, for the most part, on the participant. Particularly in middle aged exercisers and older, improvements in cardiovascular fitness and body composition were found to be directly related to the frequency of conditioning (Gettman, Pollock, Durstine, Ward, Ayres, & Linnerud,

1976). While this has been well documented, problems dealing with non-compliance have prevailed, and yet they have been largely unexplored, as stated by Oja, Teraslinn, Partanen, and Karava in 1974.

Levels of attendance and compliance have been shown to improve with certain incentives developed by fitness leaders (Wankel, Yardley, & Graham, 1985). It was this author's intention to determine whether or not a relationship existed between self-motivation and compliance within an adult fitness program. Of particular interest was whether those who scored low on a self-motivation questionnaire were less compliant than those who scored higher. The question of whether or not noncompliants had different reasons for attendance than did the compliants would also be addressed. If this question is answered, perhaps future noncompliants could be identified, based on their self motivation score results. Furthermore, attention could be directed towards these individuals, making it possible to increase motivation levels and attendance rate.

Background Information

The La Crosse Exercise and Health Program (LEHP) - Adult Fitness Unit has been in existence since January of 1977. Members are those people who are apparently healthy with no evidence of coronary heart disease and with limited risk factors (such as smoking and diabetes). Participants meet on Monday, Wednesday, and Friday at 5:30 a.m. (called the early bird group), and also at 6:00 a.m. until 7:00 a.m. If this is inconvenient, another session is available to the participants from 4:00 p.m. until 6:00 p.m., on Monday, Wednesday, and Friday. Exercise

sessions are supervised by faculty and graduate staff leaders in the LEHP - Adult Fitness Unit, and also by undergraduates at the University of Wisconsin - La Crosse. A wide variety of exercise modalities are available. Participants are able to choose from running, stationary bicycling, weight training (using free weights, as well as Universal and OEI Equipment), and swimming.

Prior to entering, or within the first three months of membership into the program, those participants 45 years of age or older (as suggested in the guidelines of the American College of Sports Medicine, 1986) receive a functional graded exercise test (fGXT), administered by the LEHP or by their own preferred medical center. Also available to each participant is a dietary assessment and nutritional counseling by a registered dietician. A fifteen minute warmup session precedes the aerobic portion of each workout, lead by a graduate student or an undergraduate student at the University of Wisconsin - La Crosse.

Statement of the Problem

The problem in this study was whether or not a relationship existed between self motivation and exercise habits (compliance versus noncompliance) among current members of the LEHP - Adult Fitness Unit. In order to solve this problem it was necessary to address these subproblems:

1. To determine whether or not there was a relationship between compliants' and noncompliants' reasons for attendance.
2. To compare a.m. versus p.m. self motivation levels.
3. To determine whether or not there was a difference in the

compliance rates of a.m. versus p.m. participants.

4. To compare male versus female self-motivation levels.

5. To determine whether or not there was a difference in the compliance rates of male versus female participants.

Null Hypotheses

The following null hypotheses were tested:

1. There will be no significant difference in the Self Motivation Index (SMI) scores of the compliant and noncompliant participants.

2. There will be no significant difference in the compliants' and noncompliants' reasons for attending the LEHP - Adult Fitness Unit exercise sessions.

3. There will be no significant difference between SMI scores of a.m. and p.m. participants.

4. There will be no significant difference between a.m. and p.m. compliance rates.

5. There will be no significant difference in a.m. participants and p.m. participants reasons for attending a.m. or p.m. exercise sessions.

6. There will be no significant difference between male and female SMI scores.

7. There will be no significant difference between male and female compliance rates.

8. There will be no significant difference between male and female reasons for attending exercise sessions.

Assumptions

1. Subjects answered the questions of both surveys truthfully and accurately.
2. The participants used in this study were a representative sample of all participants in the LEHP - Adult Fitness Unit.

Delimitations

1. Subjects were currently enrolled participants in the LEHP - Adult Fitness Unit who had begun their membership on June 1, 1987 or before.
2. Attendance records of the subjects used in the study were from June 1, 1987 until December 1, 1987 (6 months).
3. Participants in both the a.m. and p.m. water aerobics program were considered to be a separate entity from the LEHP - Adult Fitness Unit and were excluded from the study.

Definition of Terms

1. Compliance - adherence to direct prescription or medical advice for a period of time to ultimately relieve or prevent symptoms (Oldridge, 1987). Persons were considered compliant if after six months they had at least a 50% rate of attendance.
2. Noncompliance - deviation from direct prescriprtion or medical advice. Persons were considered noncompliant if after six months they had less than a 50% rate of attendance.
3. High self-motivators (HSM) - persons were considered high self-

motivators if they scored 160 or higher on the SMI.

4. Medium self-motivators (MSM) - persons were considered medium self-motivators if they scored between 135 and 159 on the SMI.

5. Low self-motivators (LSM) - persons were considered low self-motivators if they scored less than or equal to 134 on the SMI.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The problem of adherence to exercise programs still prevails in the United States (Dishman, 1987). It has been reported that only about one third of adult Americans exercise regularly (Harris, 1979). Furthermore, although studies revealing the benefits of exercise are extensive, there is still a demand for concrete evidence supporting the long term effects of prolonged exercise (Haynes, 1984). This author suggested that increased examination into the question of compliance is essential, in order to definitively reveal the efficacy of exercise and its relationship with health.

This chapter summarizes the literature related to the benefits of prolonged exercise, as well as the factors relating to exercise compliance. Topics discussed are: 1) the benefits of prolonged exercise; 2) participant characteristics related to exercise attendance; 3) program features related to participant attendance; 4) motivation and exercise attendance; 5) self-motivation and the Self Motivation Inventory (SMI); 6) Other considerations related to noncompliance and dropout; and 7) typical program attendance rates.

The Benefits of Prolonged Exercise

Research supporting the enhancement of psychological and

physiological development have been well documented.

Psychological behavior change A general increase in well being appeared to be the most common psychological benefit derived from long term exercise (Gillum & Barsky, 1974; Heinzelmann & Bagley, 1970; Massie & Shephard, 1971; Rhodes & Dunwoody, 1980). With regard to work performance, however, Heinzelmann and Bagley (1970) reported improved attitudes towards the subjects' tasks, a general need for less sleep, and more nutritional eating habits in those who exercised. Similarly, Gillum and Barsky (1974) obtained results such as higher motivation levels and stamina, and an increased ability to cope with stress. Finally, factors such as an enhanced ability to concentrate, an improved job outlook, and increased self confidence have been reported (Rhodes & Dunwoody, 1980).

Physiological benefits of prolonged exercise A direct correlation, as determined by Gettman, Pollock, and Ward (1983), has been found to exist between the frequency of days exercised and cardiovascular improvement. They further noted that when five day per week trainers were compared to one and three day per week trainers, the first group was able to reduce skinfold fat percentages while the latter two were not. This is in accord with the results obtained by Linnerud and Ward (1974) in a four day per week exercise study among middle aged men. One recent follow up study (Paffenbarger, Hyde, Wing, & Hsieh, 1986) has even discovered an inverse relationship between Harvard Alumni who expended 2000 or more calories per week and mortality rates.

Several studies have been conducted that relate to changes in coronary risk factors as a result of exercise. Cooper, et al (1976)

examined 3000 males (mean age of 44.6 years) and found positive changes in several cororonary risk factors, including serum levels of cholesterol, triglycerides, glucose, percent body fat, and systolic blood pressure with training. This supported the study by Morris, et al (1973) in which the leisure time habits of 16000 male civil servants from 40 to 64 years of age were examined. These authors concluded that those who participated in vigorous exercise had been protected against sudden fatal heart attacks and other severe consequences of coronary heart disease. Additionally, improvements in VO_2 max have been reported in several studies (Gettman, et al, 1983; Hertanu, Davis, & Focseneanu, 1986; Oja, Teraslinna, Partanen, & Karava, 1974) as a result of a training program. In a twenty year longitudinal study by Kasch, Wallace, VanCamp, and Verity (1986), the normally occuring decline in VO_2 max with age was shown to be forstalled with exercise.

Finally, from the corporate fitness standpoint, absenteeism has been shown to decline even after one year of moderate intensity exercise (Song, Shephard, & Cox, 1982). Rhodes and Dunwoody (1980) reported a decrease in overall body weight and resting heart rate as a result of an employee fitness program.

Participant Characteristics Related to Exercise Attendance

The relationship between participant characteristics and adherence was typically cited in the literature rather than noncompliance. Trying to predict who the noncompliant may be based upon their characteristics has been unsuccessful simply because the methods used up to this point have been inaccurate or unreliable (Gillum & Barsky, 1974).

Teraslinna, Partanen, Koskela, and Oja (1969) typified the adherent participant as someone who: 1) lived near the facility; 2) tended to be younger in age (<50); and 3) was less physically fit. The literature also suggested that there were distinct differences among the characteristics that described the adherent male as opposed to the adherent female (Shephard, Morgan, Funicane, & Schimmelfing, 1980). These authors described the adherent male as a middle aged non-smoker who used to be physically active but has become overweight, while the female was a bit leaner, lighter, and relatively overweight. Dishman (1981) examined male adherence to exercise prescription over a five year period. Individuals with greater adherence were leaner, lighter, less fit, and were more symptomatic with regard to coronary heart disease at program entry. He suggested that pre-exercise screening may provide statistically meaningful assistance in predicting participants' length of stay in a preventive medicine exercise program. Similarly, Oldridge (1982) suggested that observations of participant health behaviors (ie smoking, weight reduction, and physical activity patterns), when used with reasons given for attendance, may be a useful technique in the improvement of compliance. Smoking and blue - collar occupation were two statistically significant ($p<.05$) characteristics that predicted dropout in a cardiac rehabilitation program in a later study by Oldridge (1983).

Determining participant attitudes and beliefs about exercise in order to improve compliance was another area studied. Those determined to have negative beliefs about activity received more attention and education to promote behavior change and ultimately increase compliance

(Noland & Feldman, 1985; Riddle, 1980; & Slenker, 1984). Riddle (1980) concluded that joggers were more likely to believe regular exercise had a more positive effect on health, and that being in good physical and mental condition meant more to them than the nonexercisers. In contrast, the nonexercisers thought that jogging would require too much discipline and time commitment, and it would make them too tired. Furthermore, the nonexercisers believed it was unlikely that their physicians supported regular jogging. Slenker (1984) found factors such as lack of time, a conflict in family or job responsibilities, and a lack of desire or interest to be the most predominant barriers to exercise among the nonparticipants in regards to activity. Shephard, et al (1980), however, found little relationship between beliefs about exercise and the reported health practices of their subjects. They suggested that encouraging attendance to a fitness program on a trial basis (and thus letting the program sell itself) may be more effective in increasing exercise participation than trying to shape the attitudes and values of skeptical persons beforehand. This supported Harris' (1970) study that suggested attitudes may be shaped by activity rather than the reverse. In contrast, studies by Dishman, Sallis, and Orenstein, (1985); and Oldridge, (1982) have suggested that this concept may be highly impractical when put to use. These authors have reported that those who may benefit the most from an exercise program designed to ultimately lower health risk, tended to be the most resistive to beginning or remaining in such a regime.

Program Features Related to Participant Attendance

The factors participants have reported to be the most favorable in a structured, group fitness program were: 1) the organization and leadership aspect; 2) the availability of recreation and games; and 3) the overall exercise in general (Heinzelmann & Bagley, 1970). Oldridge (1977) has suggested that of all the components making up a successful fitness program, probably the most important is the exercise leader. Therefore, they should be well trained, highly motivated, innovative, and enthusiastic (Franklin, 1984).

A correlation existed between the characteristics a group program possessed (such as socialization and peer support) and adherence to exercise (Massie & Shephard, 1971). One study by Gettman, et al (1983) appeared to contradict this, because the attrition rate was 35% among the individualized program, and 45% among the supervised, group program. However, the former group participated in a considerably lower frequency of workouts per week than did the latter (2.1 and 2.7, respectively). In other words, the dropout rate was lower, but the weekly compliance rate was also lower within the individual program. Group support and cohesiveness appeared to improve compliance. In a study by Heinzelmann and Bagley (1970), approximately 90% of the adult participants preferred a group type of program as oppposed to one in which the person exercised alone.

An emphasis on fun and variety should also be employed in a fitness program (Massie & Shephard, 1971; Stoedefalke, 1974). Similarly, Thompson and Wankel (1980) reported that after six weeks of

participation, the group that was given a choice of activities tended to exercise two times as often as those that were not given a choice.

Furthermore, it was found that setting realistic, future goals in conjuction with periodic fitness testing improved weekly adherence (Martin, et al 1984). Specifically, these authors concluded that those with long term goals (6 weeks or more) had greater mean program attendance than those with short term (weekly) goals. Two ways in which long term goals have been successfully accomplished, according to Oldridge (1983), were: 1) setting up contracts that clearly define the goals of the participant prior to program entry; and 2) charging the paricipant a nominal fee that is fully refundable once their goals have been achieved. Clearly, the exercise leader can have a tremendous impact on participant compliance.

Finally, the distance to the facility appears to be another factor related to compliance. Among the dropouts of an industrial fitness program in a study by Wanzel (1978), approximately 42% reported that the program was located too far from home.

Motivation and Exercise Attendance

Wilmore (1974) has suggested that an exercise program, to be successful, must accomplish two main goals. The first goal is to educate their participants as to how and why they should be physically active, and the second goal is to motivate these people to ensure prolonged physical activity. Increased compliance has been reported in programs which emphasized the reasons behind lifestyle modification (Heinzelmann, 1973).

McHenry (1974) has attributed successful motivation to program effectiveness, safety, and long term compliance. He cautioned, however, that over-motivating to the point of muscle soreness and orthopedic injury may be just as influential to participant dropout as under motivating them. Furthermore, one study incorporating positive motivational techniques has reported reduced dropout, however, participant compliance still remained low (Wankel & Thompson, 1977). These authors suggested that additional research should be conducted using a combination of motivational techniques in order to increase compliance over an extended period of time. In a later study by Wankel, Yardley, and Graham (1985), several motivational techniques were used in an adult fitness program, and an overall improvement in participant attendance was reported, but no significant effect was due to self-motivation.

Self-Motivation and the SMI

Self-motivation and compliance have been examined in several studies. Dishman and Gettman (1980) reported self motivation as the most important factor in predicting who will be successful in an exercise program. Similarly, Dishman and Ickes (1981) and Morgan (1984) found that those who were self-motivated tended to be more likely to remain exercising in clinical and adult fitness type settings. In another study by Dishman (1982), it was determined that self-motivated persons tended to be less sensitive to activity barriers, such as inconvenience or competing lifestyle behaviors. Finally, Dishman (1985) has suggested that further research should be conducted regarding the

behavioral significance of perceived barriers to activity, as well as participant excuses for inactivity, so that continued participation can be enhanced.

The SMI An instrument used for measuring self-motivation has been developed by Dishman and his colleagues (Dishman, Ickes, & Morgan, 1980). Called the Self Motivation Inventory (SMI), this 40 item survey was originally used with college female athletes and was found to correlate significantly with self reports of exercise frequency ($r=.23$; $p<.001$). Other researchers have used the SMI for various reasons, and many have obtained significant results. Snyder, Franklin, Foss, and Rubenfire (1982) found that the poorest compliers also had the lowest SMI scores in a cardiac exercise therapy program ($p<.05$). Dishman (1981) significantly ($p<.05$) predicted the number of sessions and minutes of participation in a twelve week walk / run program based upon the participants' SMI scores. Finally, Palmer (1985) submitted the SMI to the same individuals during two different time periods, and obtained a significant correlation between the two results.

A response of 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me) is given to each item on the survey. Based upon a possible 200 points, cutoffs cited in the literature were: 160 and above, high motivation; 135 to 159, medium self motivation; and 134 and below, low self motivation (Wankel, et al, 1985).

Other Considerations Related to Noncompliance and Dropout

Another factor found to influence attendance has been spousal support of an exercise program. Heinzelmann and Bagley (1970)

discovered a direct relationship between participants who had spousal support and the participants' overall compliance. Eighty percent of the participants with greater than sixty percent compliance reported having positive spousal support for the program. Additionally, Andrew, et al (1981) reported three times as many dropouts from an exercise program in which the participants had little or no spousal support.

Franklin (1984) has reported that the encouragement of family, friends, and co-workers has the same impact on compliance as spousal support. However, Dishman (1985) stated that research regarding these influences (other than spousal support) has been insufficient.

Typical Exercise Program Attendance Figures

With regard to both men and women who begin adult fitness programs, participation rates generally decrease within the initial three to six months of attendance, followed by a less dramatic, gradual decline during the next twelve to twenty four months (Oldridge, 1982). Specifically, Dishman (1981) reported that approximately 50% of the participants will drop out within the first six months. However, participants who remained active beyond six months were more likely to remain active one year later (Dishman, 1981; Oldridge, 1982). Typical long term compliance rates have been 50% to 55% among adult fitness programs (Franklin, 1984). Compliance rates have been reported in several different ways, such as: 1) the percentage of possible sessions actually attended; 2) the number of sessions or weeks missed; and 3) the meeting of certain physiological or other kinds of objectives (Oldridge, 1987). Despite this, the same author stated that

the rates tended to follow the same pattern of compliance.

Brunner (1969) examined personality and motivating factors that influence participation in adult fitness programs. He described participants as those that exercised three times per week or more, and non-participants as those that exercised less than three times per week. The participants' main reason for compliance was to keep physically fit, whereas the non-participants main reason for lack of attendance was a lack of time due to business reasons.

In another study by Gale, Eckhoff, Mogel, and Rodnick (1984), subjects were categorized by different adherence patterns in a six month program. Early dropouts were those that attended less than 10% of the time, nonadherers were those that attended between 10% and 49% of the classes, and adherers were those that attended 50% or more of the sessions. The overall adherance rate (those attending 50% or more) was 42% after six months. In addition, the SMI was used in this study, and those with the lowest SMI scores tended to be the early dropouts.

Conclusion

Compliance and non-compliance - improving strategies involve several different techniques employed by the program leader. It has been thought of as the result of many complex and difficult to distinguish characteristics as well as the environment (Gale, et al, 1984). Also, no set characteristic can be used to accurately predict compliance (Ward & Morgan, 1984). Findings have been obtained, however, regarding participant reasons for dropping out (Gettman, et al, 1983). These included: 1) too long of a time commitment; 2) an interference with

job responsibilities; 3) family illnesses; and 4) a lack of interest. Of these, "lack of interest" appeared to be the most controllable by fitness leaders.

It was this author's intention to: 1) identify the complier in an adult fitness program; and 2) determine whether or not a relationship existed between the complier and specific features within an adult fitness program which were of interest to them. Based upon the factors cited in this literature review, and also a similar master's thesis by Palmer (1985), the SMI was used, and a questionnaire pertaining to the features of an adult fitness program was submitted.

CHAPTER III

METHODS

Introduction

Current participants in the LaCrosse Exercise and Health Program - Adult Fitness (LEHP - A/F) Unit were surveyed. The primary purpose of this study was to determine if a relationship existed between a participant's self-motivation and their exercise habits (compliance or noncompliance). Whether or not a relationship existed between compliance or noncompliance and reasons for attendance was also examined.

The following topics are discussed: 1) subject selection; 2) development of instruments; 3) administration of instruments and 4) statistical analysis of the data.

Subject Selection

Since the beginning of the A/F Unit in 1977, there have been 345 dropouts. As of February 1, 1988, there were 147 members. Current participants in the A/F Unit were surveyed, providing they had been a member since June 1, 1987 (so that a six month time span could be observed). However, members in the a.m. and p.m. water aerobics classes were excluded from the study because other factors (such as the aerobics leader failing to attend) were involved. Therefore a total of 79 subjects were involved in the survey. Of these 79 subjects, 66 participated in a.m. sessions and 13 participated in the p.m. session.

With regard to sex, 57 were males and 22 were females (see Table 1).

Table 1

Distribution of subjects surveyed in the A/F Unit

Subject grouping	# in group
A.M. Participants	66
P.M. Participants	13
A.M. and P.M. Participants	79
Male Participants	57
Female Particpants	22
Male and Female Participants	79

The attendance rates of these subjects were then calculated, based upon a six month time span of June 1, 1987 until December 1, 1987. Participants were categorized as follows: 1) compliant, based upon a 50% attendance rate or higher; and 2) noncompliant, based upon an attendance rate of 49% or less.

Development of Instrumentation

The Self Motivation Inventory The development, refinement, and test for validity of the Self Motivation Inventory (SMI) is described in two studies (Dishman & Ickes, 1981; and Dishman, Ickes, & Morgan, 1980). The SMI was submitted originally to 401 female undergraduates at the University of Wisconsin - Madison. Responses to the 60 item, 5 point scale assessing characteristics of each person's behavior was correlated with the total score. The items that correlated by less than .30 were deleted. As a result, 48 items were them submitted to alpha factor analysis using a minimum loading of .30 on a single factor as the criterion. The 40 item scale was thus derived, consisting of 19 positively-keyed and 21 negatively-keyed items. Scores could range from 40 to 200.

The items were then tested for internal consistency using Cronbach's alpha coefficient. Exceptionally high internal consistency was obtained (reliability coefficient = .91; S.E.M. = 5.84). The inventory was then cross validated using a second independent variable of 48 undergraduates, resulting in a similar index of internal consistency (reliability coefficient = .86). A one month time interval, test - retest of .92 ($p < .001$) was obtained.

The inventory was then tested for construct validity. Separation of low motivated individuals from high motivated individuals was performed by a median split of the SMI scores. The percentage of adherers was only 40.6% for subjects with low motivation, but was 78.1% for subjects with high motivation ($p < 0.0005$).

A test of discriminant validity was also performed. Self-motivation demonstrated a significantly higher positive relationship with performance than did achievement motivation ($p < .05$); approval motivation (social desireability - $p < .05$); and health locus of control ($p < .05$).

Finally, since the SMI was administered to two rather divergent samples for test - retest analysis (using middle aged adults in a therapeutic exercise program, as well as college - aged athletes), it demonstrated substantial external validity as well. A copy of this instrument may be examined in Appendix A.

The Evaluation Questionnaire The second portion of the survey was a questionnaire submitted to all of the subjects in the study (see Appendix B). It was developed in part by the researcher, based upon the literature pertaining to reasons for noncompliance. Some of the questions, however, were selected by permission from a previous study by Palmer (1985) on noncompliance among cardiac rehabilitation participants. The intent of the questionnaire was to determine reasons for attending the Adult Fitness Unit among different groups It consisted of questions concerning current physical condition, exercise habits, daily living habits (smoking / nonsmoking), spousal support of physical activity, and features within the A/F Unit that the participant likes or dislikes. The questionnaire was evaluated by a panel of experts to assure content validity and clarity of the questions (see appendix E).

Administration of Instruments

A list of all the participants who met the criterion for the study was obtained. Both parts of the survey were administered to all of the subjects in the study. The SMI was administered first, as described by Dishman (1980). At the end of the exercise session, subjects were asked to complete the SMI, and return it to the researcher before leaving.

The second questionnaire could be filled out at the subjects' leisure. To facilitate the distribution process of the second questionnaire, many of the surveys were given to the subjects personally, at the time of the A/F Program. Once they had received the survey their name was crossed off the subject list. The survey was mailed to the remaining subjects on the list, along with a self-addressed, stamped envelope and cover letter (see appendix C). Approximately two weeks were allowed for response to the initial mailing, and after this time a second cover letter and survey were sent. Those who had received the survey personally were more frequently reminded to promptly return it to the researcher. Clear, concise instructions were given to all of the subjects, and confidentiality was ensured.

Statistical Analysis of the Data

A chi-square analysis was used to examine differences between the SMI scores of the participants. A chi-square analysis was also used to determine if differences existed in reasons for attending exercise sessions. The .05 level of significance was used to accept or reject the null hypotheses.

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

The purpose of this study was to survey the participants in the LaCrosse Exercise and Health Program (LEHP) - Adult Fitness Unit to determine whether a relationship existed between those that scored low (134 or below), medium (135-159), and high (160 or above) on the Self Motivation Inventory (SMI) and exercise their compliance rates A comparison was also made between the SMI scores of a.m. versus p.m. participants, and male versus female participants. In addition, the compliance rates of male versus female and a.m. versus p.m. participants were compared. Further, an Evaluation Questionnaire (EQ) was used to examine differences in reasons for attending the LEHP - Adult Fitness Unit. Subject groupings for the EQ comparisons were compliants and noncompliants, a.m. and p.m. participants, and male and female participants. A chi-square analysis was utilized to make between group comparisons for each of these variables. The results are presented in six sections: 1) discussion of the rate of questionnaire return; 2) presentation of the SMI; 3) group comparisons of the SMI scores; 4) compliance results; 5) discussion of SMI and compliance results; and 6) significant EQ results and discussion.

There were no significant differences ($p<.05$) with regard to the SMI between each of the groups described above. Likewise, no significant

difference was found between the rate of compliance and each of the groups examined. However, in each of the group comparisons with the EQ, significant ($p<.05$) differences were found with regard to certain questions. Therefore, only the significant data will be discussed in the sixth section, while the nonsignificant results of the EQ will be presented in Appendix D.

Rate of Questionnaire Return

A total of 79 questionnaires were mailed or hand distributed to the LEHP - Adult Fitness Participants that met the criteria as described in Chapter III. Sixty-one questionnaires (77.2%) were returned. Twelve individuals (15.2%) did not respond to first or second mailing of the questionnaire or to a follow-up phone call. These individuals were classified as "No Returns." Of the "No Returns" group,eight subjects (66%) were considered compliant (greater than or equal to 50% attendance), while four subjects (33%) considered noncompliant (less than 50% attendance). There were two individuals (2.5%) that could not be reached by phone or mail. These individuals were classified as "Unable to Contact." Of the "Unable to Contact" group, both individuals were considered noncompliant. Finally, four individuals (5.1%) refused to answer either of the questionnaires. Two of the four individuals who refused to answer the questionnaire were considered compliant, while the other two were considered noncompliant. Some of the reasons given for not answering the questionnaires were: 1) they had no time to complete the questionnaire; 2) they were not interested

in completing the questionnaire; and 3) the questionnaire (particularly the SMI) was too difficult to complete. Table 2 summarizes the questionnaire return rate.

Table 2

Summary Of Returns

Subject Grouping	# In Group
Returns	61
No Returns	12
Unable to Contact	2
Refused to Answer	4
Total	79

Self Motivation Inventory

The scores of the subjects on the SMI ranged from 95 to 194 with an overall mean of 153.79 (61 subjects). The participants were then grouped into the three categories described above according to their raw SMI score. These categories are based on previous studies by Dishman, Ickes, and Morgan (1980) as well as Wankel and Yardley (1985). Scores in group one, the Low Self-Motivators (LSM), ranged from 95 to 133 (mean = 121.31), and consisted of 13 participants. Scores in group two, the Medium Self-Motivators (MSM), ranged from 139 to 159 (mean = 149.43) and consisted of 23 participants. Finally, scores in group three, the High Self-Motivators (HSM), ranged from 161 to 194 (mean = 173.12) and

consisted of 25 participants. Table 3 summarizes the SMI score results.

Table 3

SMI Scores

Group	Range	Mean	Std Dev.	Cases
LSM	95-135	121.31	10.5460	13
MSM	139-159	149.43	5.9835	23
HSM	161-194	173.12	10.0097	25
Total				61

Group Comparisons of SMI Scores

Mean comparisons of raw SMI scores were made between compliers and noncompliers, a.m. and p.m. participants, and male and female participants.

Complier versus noncomplier SMI scores Forty-three compliers and eighteen noncompliers (as defined in Chapter III) completed the SMI. The mean raw score for the compliers was 155.37, while the mean raw score for the noncompliers was 150.00. When broken down into the SMI categories, eight compliers fell into the LSM category, 16 into the MSM category, and 19 into the HSM category. In the noncomplier grouping, 5 were categorized as an LSM, 7 as an MSM, and 6 as an HSM (see Table 4).

A.M. versus p.m. SMI scores Fifty a.m. and eleven p.m. participants obtained a mean raw score of 155.04 and 148.09, respectively. Eight a.m. participants were classified into the LSM

category, twenty-one into the MSM category, and twenty-one into the HSM category. P.M. self-motivation groupings consisted of five participants categorized as an LSM, two as an MSM , and four as an HSM (see Table 5).

Table 4

Compliance and SMI Scores

Group	Overall Group Mean	S.D.	SMI Grouping LSM	MSM	HSM	T
Compliers	155.37	17.94	8	16	19	43
Noncompliers	150.00	26.27	5	7	6	18
Totals			13	23	25	61

Chi-Square	D.F.	Significance
.87514	2	.6456

Male versus female SMI scores Forty-two male and nineteen female participants completed the SMI. Means obtained for the male and female groups were 157.05 and 146.58, respectively. Eight males were considered low self-motivators, while 14 were medium self-motivators, and twenty were high self-motivators. The distribution of female scores into low, medium, and high groupings resulted in five females categorized as LSM, nine females categorized as MSM, and 5 females categorized as HSM. Table 6 provides a breakdown of each of the group scores.

Table 5

Time of Day and SMI Scores

Group	Overall Group Mean	S.D	SMI Grouping LSM	MSM	HSM	T
A.M.	155.04	20.06	8	21	21	50
P.M.	148.09	23.39	5	2	4	11
Totals			13	23	25	61

Chi-Square	D.F.	Significance
5.09698	2	.0782

Table 6

Sex and SMI Scores

Group	Overall Group Mean	S.D.	SMI Grouping LSM	MSM	HSM	T
Male	157.05	19.52	8	14	20	42
Female	146.58	21.80	5	9	5	19
Totals			13	23	25	61

Chi-Square	D.F.	Significance
2.45634	2	.2928

Compliance Results

A total of forty-three out of sixty-one subjects were considered compliant, while eighteen out of sixty-one were considered noncompliant.

A.M. versus p.m. attendance rates Of the forty-three compliants, there were thirty-seven out of fifty a.m. participants (74.0%) and six out of eleven p.m. participants (54.5%). The noncomplier grouping consisted of thirteen out of fifty a.m. participants (26.0%) and five out of eleven p.m. participants (45.5%). Table 7 summarizes the attendance rates for the two groups.

Table 7

Summary of Attendance Rates

Group	Compliant	Noncompliant	Total
A.M.	37	13	50
P.M.	6	5	11
Totals	43	18	61

Chi-Square	D.F.	Significance
1.64057	1	.2002

Male versus female attendance rates Thirty-one out of forty-two male participants were considered compliant (73.8%), while twelve out of nineteen female participants (63.2%) fell into the compliant category. In the noncompliant grouping there were eleven out of a possible forty-two male subjects (26.2%), and seven out of a possible eighteen female subjects (36.8% - see Table 8).

Table 8

Summary of Attendance Rates

Group	Compliant	Noncompliant	Total
Male	31	11	42
Female	12	7	19
Totals	43	18	61

Chi-Square	D.F.	Significance
.71355	1	.3983

Discussion of SMI Scores and Compliance Rates

SMI Results and Compliance As indicated in Chapter II, the SMI has been found to correlate directly with self reports of exercise frequency (Dishman, Ickes, & Morgan, 1980), low compliance (Dishman & Ickes, 1981; and Snyder, Franklin, & Rubenfire, 1982), and in the prediction of exercise participation (Ward & Morgan, 1984). One might assume then that there would be a significantly lower SMI score for the noncompliers than the compliers in this study. This was not the case, however, as a chi-square analysis revealed no significant difference between these two groups. There may be several reasons for this. First, though the SMI has been successful in distinguishing adherents from dropouts after a 20-week exercise program (Dishman & Gettman, 1980), recent findings suggest it is more useful in the prediction of adherence to exercise at program entry (Ward & Morgan, 1984). Second, the SMI has been found to

be useful at program entry in determining those individuals who may be prone to dropout. Perhaps the SMI could be distributed to new participants and those that scored lower could be given more individualized attention. Further, strategies aimed at improving compliance could be incorporated into these participants' program. Finally, attendance records during extended time periods (ie 32 weeks) may be tried with a larger sample size to obtain significant results.

SMI Results, Time of Participation, and Compliance Very little research has been performed that examines differences in SMI scores and time of participation. Franklin (1984) reported increased compliance with a.m. participants compared to p.m. participants. One would, therefore, conclude that the a.m. participants in this study would have significantly higher SMI scores than the p.m. participants. Likewise, one would expect the a.m. participants to be significantly more compliant than the p.m. participants. Although the a.m. participants did score higher than the p.m. participants (see Table 5), the results were only marginally significant ($p = .0782$). Further, a comparison of compliance rates between the two groups revealed that the a.m. and p.m. participants were not significantly different. Perhaps a larger sample size would have produced significant results.

SMI Results, Sex, and Compliance The SMI has been used in the prediction of adherence with regard to male and female participation, however, it did not predict male participation beyond an early period in the program, and it was ineffective in the prediction of female participation (Gale, Eckhoff, Mogel, & Rodnick, 1984). Further, it was unsuccessful in distinguishing between occasional attenders,

nonadherers, and adherers with regard to both sexes. Ward and Morgan (1984) were able to predict both male and female adherents with an eighty-three and ninety-one percent accuracy (respectively), but they failed to predict the dropouts. In this study, the SMI scores and compliance rates of the males were not significantly different than the females indicating that self-motivation and the particular adherence patterns of the LEHP participants are not significantly influenced by sex. This can be explained by the fact that exercise adherence records with regard to sex have still today been vastly unexplored, yet many researchers believe noncompliance patterns are comparable for men and women (Oldridge, 1982). Again, however, perhaps a larger sample size may have revealed significance among the two groups.

Significant EQ Results and Discussion

With respect to each question on the EQ, comparisons were made between the complier and noncomplier groups, the a.m. and p.m. groups, and the male and female groups. The significant data between each of the groups will be presented as follows: 1) complier versus noncomplier; 2) a.m. versus p.m.; and 3) male versus female.

Complier versus noncomplier EQ results

2. Do you currently participate in **aerobic** exercise sessions that are not conducted by the LEHP - Adult Fitness Unit (i.e., on your own)?

(a) yes, over three times per week. (c) yes, about 2 times per week.
(b) yes, at least 3 times per week. (d) yes, about 1 time per week.
(e) no, the LEHP-AFU provides sufficient aerobic activity per week.

As can be seen from Table 9, approximately half (48.8%) of

participants from the compliant group exercise at least two times per week outside of the LEHP (as indicated by responses C, B, or A). In contrast, over half of the noncompliers (55.7%) do not exercise at all outside of the LEHP (38.9%), or they exercise only one time per week outside of the LEHP (16.7%). As described in the Guidelines of the American College of Sports Medicine (ACSM, 1986), cardiovascular benefits from aerobic exercise will be derived only if the frequency of conditioning is three days per week or more. It is quite apparent that many of the noncompliant participants fall short of the ACSM recommendation.

Table 9

Participation in Aerobic Exercise Sessions On Own

Group Response	Compliant (%)		NComp (%)	Total
A	4	(9.3)	2 (11.1)	6
B	7	(16.2)	3 (16.7)	10
C	10	(23.3)	3 (16.7)	13
D	19	(44.2)	3 (16.7)	22
E	3	(7.0)	7 (38.9)	10
Totals	43		18	61

Chi-Square	D.F.	Significance
10.84854	4	.0283

There are many reasons cited in the literature for nonattendance in adult fitness programs, but the most discouraging reasons are perhaps

the most controllable. Reasons given such as "too busy" (Brunner, 1967) and "lack of interest" (Gettman, 1983) should be examined more carefully by our fitness leaders. In this study, though the question was nonsignificant, fifty-eight out of sixty-one participants (95.1% - see Appendix D, Table 30) gave reasons such as work schedule conflicts (75.4%) and personal schedule conflicts (19.7%) most commonly. Reasons such as these, though they may occur, should not ultimately lead to noncompliance (Brunner, 1967). There is an apparent need within the LEHP - Adult Fitness Unit to: 1) develop strategies that will lead to life-long acceptance of consistent exercise habits; 2) determine the psychological and physiological benefits derived by the LEHP - Adult Fitness compliants; and 3) develop time scheduling strategies which can improve exercise compliance. These types of behavior strategies offer a sound potential for exercise program compliance (Oldridge, 1982). The ultimate goal of these strategies is to make exercise habit-forming. Once accomplished, the impact of stressful events (such as work schedule conflicts and personal schedule conflicts) have been shown to diminish (Dishman, 1982).

20. The purpose of the gxt was clearly explained to me.

    (a) strongly agree

    (b) agree

    (c) undecided

    (d) disagree

    (e) strongly disagree

    As seen in Table 10, sixty-one percent of all the participants who

responded strongly agree (24.1%) or agree (37.1%) with this statement. A larger percentage of the compliers strongly agree (32.5%) with the statement compared to the noncompliers (0%).

Very little research has been conducted with regards to compliance and feedback on gxt results. Franklin (1984) has suggested to improve compliance and motivation in adult fitness programs, periodic testing should be conducted as an incentive to improve compliance. Without proper feedback in regards to the results, however, periodic testing is meaningless as far as the participants are concerned. Perhaps an extra effort should be made to ensure all of the participants receive their gxt results.

Table 10

Purpose of GXT Clearly Explained

Group Response	Compliant	(%)	NComp	(%)	Total
A	13	(32.5)	0	(0.0)	13
B	11	(27.5)	9	(64.3)	20
C	3	(7.5)	3	(21.4)	6
D	8	(20.0)	2	(14.3)	10
E	5	(12.5)	0	(0.0)	5
Total	40		14		54

Chi-Square	D.F.	Significance
12.08250	4	.0167

A.M. versus p.m. EQ results

11. The major reason for joining the LEHP - Adult Fitness Unit was:

(a) recommended by a physician.

(b) family / spouse felt it was important.

(c) to improve cardiovascular endurance.

(d) to socialize with other participants.

(e) to gain self - esteem.

The majority of respondents from both groups joined the program either because it was recommended by a physician (40.9%) or because their family or spouse felt it was important (37.7%). A much larger percentage of the a.m. participants (48%) joined because their physician felt it was important relative to the p.m. (9.1%). Further, a greater percentage of the p.m. subjects (72.2%) joined because their family or spouse felt it was important, compared to the a.m. (30%). Table 11 provides a breakdown of a.m and p.m. results.

One explanation for these results may be because (though not significant) the a.m. group had more compliant participants (74%) compared to the p.m. participants (54.5%). Dishman (1981) reported greater adherence in those individuals who were more symptommatic with regard to coronary artery disease at program entry. Perhaps the a.m. participants have more individuals who are at high risk for coronary artery disease, and joined upon the recommendation of their physician, as opposed to the p.m. participants. Regardless of the reason, it

Table 11

Major Reason for Joining the Program

Group Response	A.M. (%)	P.M. (%)	Total
A	24 (48.0)	1 (9.1)	25
B	15 (30.0)	8 (72.7)	23
C	7 (14.0)	2 (18.2)	9
D	4 (8.0)	0 (0.0)	4
Totals	50	11	61

Chi-Square	D.F.	Significance
8.68310	3	.0338

appears that the majority of participants who join the LEHP - Adult Fitness Unit do so because they were influenced by someone to join (as indicated by responding A or B), and not because they perceived it as a benefit to them at program entry (as indicated by responding C, D, or E).

14. The time of the LEHP - Adult Fitness Unit exercise sessions did not interfere with daily activities.

    (a) strongly agree

    (b) agree

    (c) undecided

    (d) disagree

    (e) strongly disagree

As can be seen from Table 12, ninety-three percent of the respondents either strongly agree (68.9%) or agree (24.5%) with the

above statement indicating that the times of the exercise sessions are appropriate. A larger percentage of the a.m. participants indicated that the time of the exercise sessions did not interfere with daily activities (98%) compared to the p.m. group (72.7%).

Comparisons were also made between the compliant a.m. participants and the compliant p.m. participants in regards to the same question. Of the 37 a.m. compliants, one-hundred percent strongly agree (73%) or agree (27%) with the statement. Eighty-three percent of the p.m. compliants strongly agree (66.7%) or agree (16.7%). Again, a higher percentage of the a.m. participants believe that the LEHP - Adult Fitness Program <u>does not</u> interfere with daily activities (see Table 13).

Table 12

Time of the LEHP Did Not Interfere With Daily Activities

Group Response	A.M. (%)	P.M. (%)	Total
A	35 (70.0)	7 (64.0)	42
B	14 (28.0)	1 (9.0)	15
C	1 (2.0)	3 (27.0)	4
D	0 (0.0)	0 (0.0)	0
E	0 (0.0)	0 (0.0)	0
Totals	50	11	61

Chi-Square	D.F.	Significance
10.14633	2	.0063

The results shown in Table 12 and 13 are similar to the findings reported by Franklin (1984) in which increased compliance was found

among those individuals who exercised in the morning. Advantages to morning exercise sessions reported by Franklin (1984) included fewer work or personal interruptions, less frequent schedule conflicts, and reduced heat stress on hot and humid days. The high percentage of agreement with this statement by both groups examined, however, indicates that the times offered by the LEHP - Adult Fitness Unit accomodate the majority of the participants and should remain the same.

Table 13

Time of the LEHP Did Not Interfere With Daily Activities

Group Response	A.M. Compliant	(%)	P.M. Compliant	(%)	Total
A	27	(73.0)	4	(66.7)	31
B	10	(27.0)	1	(16.7)	11
C	0	(0.0)	1	(16.7)	1
D	0	(0.0)	0	(0.0)	0
E	0	(0.0)	0	(0.0)	0
Totals	37		6		43

Chi-Square	D.F.	Significance
6.41177	2	.0405

15. The exercise facilities were easily accessible to / from home and / or work.

(a) strongly agree

(b) agree

(c) undecided

(d) disagree

(e) strongly disagree

In a study by Wanzel (1978), the distance to the facility accounted for forty-two percent of the reasons for dropout in an industrial fitness facility. In this study 97% of the participants strongly agree or agree to the above statement indicating that the location of the LEHP - Adult Fitness Unit is easily accessible to / from home and / or work. One hundred percent of the a.m. participants either strongly agree (70%) or agree (30%) to the statement. A lower percentage of the p.m. participants responded in the same fashion. Only 36.4% strongly agree and 45.4% agree to the statement. Table 14 is a breakdown of these results.

Similar findings were obtained from the compliant a.m. and compliant p.m. groups. One-hundred percent of the compliant a.m. participants strongly agree (73%) or agree (27%) with this statement. In comparison, eighty-three percent of the compliant p.m. participants strongly agree (50%) or agree (33%) with the statement, while seventeen percent disagree (see Table 15).

It is more likely that the p.m. participants are coming to the program from work. Perhaps those p.m. participants that responded "undecided" (9.1%) or "disagree" (9.1%) with the statement were about to

Table 14

Accessibility of the Facilities to / from Home and / or Work

Group Response	A.M. (%)	P.M. (%)	Total
A	35 (70.0)	4 (36.4)	39
B	15 (30.0)	5 (45.4)	20
C	0 (0.0)	1 (9.1)	1
D	0 (0.0)	1 (9.1)	1
E	0 (0.0)	0 (0.0)	0
Totals	50	11	61

Chi-Square	D.F.	Significance
11.34330	3	.0100

Table 15

Accessibility of the Facilities to / from Home and / or Work

Group Response	Compliant A.M. (%)		Compliant P.M. (%)		Total
A	27	(73.0)	3	(50.0)	30
B	10	(27.0)	2	(33.3)	12
C	0	(0.0)	0	(0.0)	0
D	0	(0.0)	1	(16.7)	1
E	0	(0.0)	0	(0.0)	0
Totals	37		6		43

Chi-Square	D.F.	Significance
6.63078	2	.0363

change the location of their work (or home) and were unsure as to how the location would work out. These participants were by far the minority, however, indicating that the location is convenient, and perhaps the program could be promoted as such.

Male Versus female EQ results 11. The major reason for joining the LEHP - Adult Fitness Unit was:

(a) recommended by a physician

(b) family / spouse felt it was important

(c) to improve fitness

(d) to socialize with other participants

(e) to gain self - esteem

Seventy-nine percent of all participants responded A (41%) or B (38%) to the above question. A much larger percentage of the males (52.4%) joined because their physician recommended it compared to the females (15.8%). Shephard, Ward, Funicane, and Schimmelfing (1980) have typified the adherent male as a middle-aged nonsmoker who used to be physically active but has become overweight, while the adherent female was leaner, lighter, and relatively overweight. Further, Dishman (1980) examined male adherence to exercise prescription over a five year period. Some cheracteristics of the adherent male included a tendency to be: 1) less fit; and 2) more symptomatic with regard to coronary heart disease at program entry. These descriptions may explain why the males in this study reported joining upon the advice of their physician more frequently than did the females. The females tended to join because their family or spouse felt it was important (response B = 63.2%) compared to the males (response B = 26.2%). Table 16 summarizes

these results.

Table 16

Major Reason For Joining Program

Group Response	Male	(%)	Female	(%)	Total
A	22	(52.4)	3	(15.8)	25
B	11	(26.2)	12	(63.2)	23
C	5	(11.9)	4	(21.0)	9
D	4	(9.5)	0	(0.0)	4
Totals	42		19		61

Chi-Square	D.F.	Significance
11.56687	3	.0090

When comparisons were made between the compliant males and the compliant females, similar results were found. Seventy - four percent of all the compliant participants responded A or B. Further, a much higher percentage of the compliant males (51.6%) joined upon the recommendation of their physician compared to the compliant females (8.3%). In contrast, the majority of compliant females (66.7%) joined because of family or spousal support, while only 22.6% of the males joined for this same reason (see Table 17).

Family and spousal support has been reported to have a direct relationship on compliance (Andrew, et al, 1981; Franklin, 1984; and Heinzelmann & Bagley, 1970). Eighty percent of those with greater than

sixty percent compliance reported having positive spousal support for an exercise program (Heinzelmann & Bagley, 1970). This may account for the high number of participants who joined because of the support of their family or spouse.

Table 17

Major Reason For Joining Program

Group Response	Compliant Male	(%)	Compliant Female	(%)	Total
A	16	(51.6)	1	(8.3)	17
B	7	(22.6)	8	(66.7)	15
C	5	(16.1)	3	(25.0)	8
D	3	(9.7)	0	(0.0)	3
E	0	(0.0)	0	(0.0)	0
Totals	31		12		43

Chi-Square	D.F.	Significance
10.44612	3	.0151

16. The exercise facilities are clean and pleasant.

(a) strongly agree (d) disagree

(b) agree (e) strongly disagree

(c) undecided

As seen in Table 18, 95.1% of all the participants chose either A (52.4.%) or B (42.6%) which indicates that the facilities are clean and pleasant. A much higher percentage of the female participants

(73.7%) chose A (strongly agree) compared to the males (42.9%). These results may be related to the results of a study by Dishman, Sallis, and Orenstein (1985) in which women reported perceived discomfort during an exercise program, regardless of exertion levels, as a reason for dropout. In this study, the women may have been more receptive to the exercise surroundings, and therefore they chose a response that indicated more certainty.

Table 18

Exercise Facilities Clean and Pleasant

Group Response	Male	(%)	Female	(%)	Total
A	18	(42.9)	14	(73.7)	32
B	22	(52.4)	4	(21.1)	26
C	2	(4.7)	0	(0.0)	2
D	0	(0.0)	1	(0.0)	1
E	0	(0.0)	0	(0.0)	0
Totals	42		19		61

Chi-Square	D.F.	Significance
8.49746	3	.0368

21. Follow-up on gxt results were provided to me.

(a) strongly agree
(b) agree
(c) undecided
(d) disagree
(e) strongly disagree

Eighty-five percent of all the participants strongly agree (39%) or agree (46%) to the question indicating that follow-up on gxt results were provided. A much higher percentage of the women (68.4%) compared to the men (26.2%) strongly agreed however. Table 19 provides a breakdown of the responses for question twenty - one.

Similarly, a high percentage of the compliant males and females responded A or B (84%). Seventy - five percent of the compliant women strongly agreed to the question, compared to only nineteen percent of the men (see Table 20).

Table 19

Follow-up on gxt Results Were Provided

Group Response	Male	(%)	Female	(%)	Total
A	11	(26.2)	13	(68.4)	24
B	23	(54.8)	5	(26.3)	28
C	8	(19.0)	1	(5.3)	9
D	0	(0.0)	0	(0.0)	0
E	0	(0.0)	0	(0.0)	0
Totals	42		19		61

Chi-Square	D.F.	Significance
9.92081	2	.0070

Table 20

Follow-up on gxt Results Were Provided

Group Response	Compliant Male	(%)	Compliant Female	(%)	Total
A	6	(19.4)	9	(75.0)	15
B	18	(58.1)	3	(25.0)	21
C	7	(22.5)	0	(0.0)	7
D	0	(0.0)	0	(0.0)	0
E	0	(0.0)	0	(0.0)	0
Totals	31		12		43

Chi-Square	D.F.	Significance
12.32534	2	.0021

These results may be explained by the fact that a much higher percentage of overall participants in this study were male (68.9%). Only 31.1% of all participants were female, which may make it easier to locate the females when they attended to discuss their results. It is clear, however, that more effort must placed to ensure everyone who has a gxt receives follow-up on the results.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was threefold. The first objective was to determine if a relationship existed between Self Motivation Inventory (SMI) scores and various groups of participants within the LaCrosse Exercise and Health Program (LEHP) Adult Fitness Unit. The second objective was to determine if significant differences were found among participant exercise habits (compliance versus noncompliance). The third objective was to determine if differences existed in reasons for attending the LEHP among the participants.

Participants were divided into three categories based upon their SMI score: High Self Motivators (HSM), those scoring 160 or above on the SMI; Medium Self Motivators (MSM), those scoring 135 to 159 on the SMI; and Low Self Motivators, those scoring 134 or below on the SMI. Based upon six month attendance records, participants attending greater than or equal to fifty percent of the time were considered compliant, and those people attending less than fifty percent of the time were considered noncompliant. Finally, a.m. and p.m. participants and male and female participants were compared.

A questionnaire was developed by the researcher which contained items to measure many of the factors cited in the literature relative to compliance and participant attitudes toward various program features.

Some of the questions were similar to the questions developed by Palmer (1985) seeking to measure to reasons for participation. The questionnaire and the SMI were hand distributed or mailed out to 79 participants in the adult fitness program. A return rate of 77.2% was obtained. A chi- square analysis was used to analyze group comparisons.

Conclusions

On the basis of the data obtained from this study the following conclusions can be drawn:

1. Null hypothesis number one, which stated that there would be no significant difference among the SMI scores of compliant and noncompliant participants, was accepted.
2. Null hypothesis number two, which stated that there would be no significant difference between the compliants' and noncompliants' reasons for attending the LEHP - Adult Fitness Unit exercise sessions, was accepted for twenty-three factors (based upon the Evaluation Questionnaire) and rejected for two factors. A chi-square analysis revealed significant differences ($p<.05$) among the compliant and noncompliant views of the following aspects of the program:
   A. There was a significant difference in the amount of aerobic exercise the compliants and noncompliants participated in outside of the LEHP.
   B. There was a significant difference among the compliants' and noncompliants' view of how clearly their graded exercise test was test was explained to them.

3. Null hypothesis number three, which stated that there would be no significant difference between the SMI scores of a.m. and p.m. participants, was accepted.
4. Null hypothesis number four, which stated that there would be no significant difference between a.m. and p.m. compliance rates, was accepted.
5. Null hypothesis number five, which stated that there would be no significant difference in a.m. and p.m. reasons for attending LEHP Adult Fitness exercise sessions, was accepted for twenty-two factors and rejected for three factors. A chi-square analysis revealed significant differences ($p<.05$) among the a.m. and p.m. groups in their views of the following aspects of the program:
   A. There was a significant difference ~~the among a.m. and p.m.~~ participants' major reasons for joining the LEHP - Adult Fitness Unit.
   B. There was a significant difference among a.m. and p.m. participants (as well as compliant a.m. participants and compliant p.m. participants) in their belief of whether or not the LEHP - Adult Fitness Unit interfered with daily activities.
   C. There was a significant difference in how a.m. and p.m. (as well as compliant a.m. and compliant p.m.) participants favored the location of the LEHP - Adult Fitness Unit.
6. Null hypothesis number six, which stated that there would be no significant difference between the SMI scores of the male and

female participants, was accepted.

7. Null hypothesis number seven, which stated that there would be no significant difference between male and female compliance rates, was accepted.

8. Null hypothesis number eight, which stated that there would be no significant difference between male and female reasons for attending the LEHP - Adult Fitness Program, was accepted for twenty - three factors and rejected for two factors. A chi - square test revealed significant differences ($p<.05$) among the male and female groups in their views of the following aspects of the program:

   A. There was a significant difference in the male and female (as well as the compliant male and compliant female) participants' major reason for joining the LEHP - Adult Fitness Unit.

   B. There was a significant difference in how the male and female (as well as how the compliant male and compliant female) participants believed the LEHP - Adult Fitness Unit interfered with daily activities.

Recommendations

The following recommendations are made with regard to the LEHP - Adult Fitness Unit and to future studies:

1. Increase current participant education according to the American College of Sports Medicine Guidelines regarding intensity, frequency, duration, and progression of activity

to promote compliance.

2. Develop time schedule strategies with participants that score low on the SMI at program entry to improve compliance.
3. Determine the psychological as well as the physiological benefits derived by the compliant participants of the LEHP - Adult Fitness Unit.
4. Examine the internal as well as the external factors which influence the compliant participants to comply.
5. Determine the perceived barriers to activity among those who score low on the SMI.
6. Administer the SMI to all new participants to determine its success in the prediction of compliance and / or dropout.
7. Develop a way to ensure the graded exercise test results are provided to all participants in the Adult Fitness Program who had a test.
8. Continue to offer morning and afternoon exercise sessions to accommodate the wide range of participant schedules.
9. Use the LEHP's convenient times and location in advertisements and brochures to obtain new members.
10. Target new member markets towards families, married couples, and those with significant others to increase compliance.
11. Continue to offer incentives such as the "Winter Diehards Program" in an effort to improve compliance.
12. Determine the effects incentives have on long and short term compliance.

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APPENDIX A

SELF EVALUATION INVENTORY - PART I

Read each of the following statements and fill in the letter of the alternative which best describes how characteristic the statement is when applied to you. The alternatives are:

(a) extremely uncharacteristic of me
(b) somewhat uncharacteristic of me
(c) neither characteristic nor uncharacteristic of me
(d) somewhat characteristic of me
(e) extremely characteristic of me

Please be sure to answer every item and try to be as honest as possible in your responses. Your answers will be kept in the strictest confidence.

_____ 1. I'm not very good at committing myself to do things.

_____ 2. Whenever I get bored with projects I start, I drop them to do something else.

_____ 3. I can persevere at stressful tasks, even when they are physically tiring or painful.

_____ 4. If something gets to be too much of an effort to do, I'm likely to just forget it.

_____ 5. I'm really concerned about developing and maintaining self-discipline.

_____ 6. I'm good at keeping promises, especially the ones I make to myself.

_____ 7. I don't work any harder than I have to.

_____ 8. I seldom work to my full capacity.

_____ 9. I'm just not the goal-setting type.

____ 10. When I take on a difficult job, I make a point of sticking with it until it's completed.

____ 11. I'm willing to work for things I want as long as it's not a big hassle for me.

(a) extremely uncharacteristic of me
(b) somewhat uncharacteristic of me
(c) neither characteristic nor uncharacteristic of me
(d) somewhat characteristic of me
(e) extremely characteristic of me

____ 12. I have a lot of self-motivation.

____ 13. I'm good at making decisions and standing by them.

____ 14. I generally take a path of least resistance.

____ 15. I get discouraged easily.

____ 16. If I tell somebody I'll do something, you can depend on it being done.

____ 17. I don't like to overextend myself.

____ 18. I'm basically lazy.

____ 19. I have a very hard-driving, aggressive personality.

____ 20. I work harder than most of my friends.

____ 21. I can persist in spite of pain or discomfort.

____ 22. I like to set goals and work toward them.

____ 23. Sometimes I push myself harder than I should.

____ 24. I tend to be overly apathetic.

____ 25. I seldom, if ever, let myself down.

____ 26. I'm not very reliable.

____ 27. I like to take on jobs that challenge me.

____ 28. I change my mind about things quite easily.

____ 29. I have a lot of willpower.

____ 30. I'm not likely to put myself out if I don't have to.

____ 31. Things just don't matter much to me.

____ 32. I avoid stressful situations.

____ 33. I often work to the point of exhaustion.

(a) extremely uncharacteristic of me
(b) somewhat uncharacteristic of me
(c) neither characteristic nor uncharacteristic of me
(d) somewhat characteristic of me
(e) extremely characteristic of me

____ 34. I don't impose much structure on my activities.

____ 35. I never force myself to do things I don't feel like doing.

____ 36. It takes a lot to get me going.

____ 37. Whenever I reach a goal, I set a higher one.

____ 38. I can persist in spite of failure.

____ 39. I have a strong desire to achieve.

____ 40. I don't have much self-discipline.

APPENDIX B

EVALUATION QUESTIONNAIRE - PART II

Read each of the following and darken in the most appropriate response on the answer sheet. **Use a # 2 pencil.**

DEFINITION: **AEROBIC**: Any continuous, endurance type of activity lasting at least 15 minutes in duration with an increase in resting heart rate (examples: walking, jogging, swimming, bicycling, and cross-country skiing). **Note**: This <u>does not</u> include weight training.

1. Before entering the Adult-Fitness Unit, how would you describe your **aerobic** activity?

   (a) inactive

   (b) some aerobic activity, but less than the intensity level performed when participating in the LaCrosse Exercise and Health Program (LEHP).

   (c) aerobic activity equal to the intensity level performed when participating in the LEHP.

   (d) aerobic activity greater than the intensity level performed when participating in the LEHP.

2. Do you currently participate in **aerobic** exercise sessions that are not conducted by the LEHP - Adult Fitness Unit (ie on your own)?

   (a) yes, over 3 times per week.

   (b) yes, at least 3 times per week.

   (c) yes, about 1 to 2 times per week.

   (d) no, I believe my participation in the LEHP exercise sessions each week provides me with enough **aerobic** activity.

   (e) no, I do not have time to participate in more **aerobic** activity than what I receive while participating in the LEHP.

3. Which of the following would you consider to be the <u>most beneficial</u> component of the LEHP - Adult Fitness Unit?

   (a) to improve fitness.

   (b) to gain knowledge of safe exercise habits and nutrition.

   (c) to relieve tension and stress.

   (d) to be able to socialize with peers.

   (e) to lose weight.

4. The exercise prescription heart rate (10 second count) is:

   (a) too high and I seldom reach it.

   (b) just right and I almost always reach it.

   (c) too low and I am frequently over it.

   (d) I don't know my exercise prescription heart rate.

5. Please rate on a scale of 1 to 5 the intensity level you feel your usual exercise session is:

   (1) very, very light

   (2) very light

   (3) somewhat hard

   (4) hard

   (5) very, very hard

6. (If married) My spouse's support for my own involvement in aerobic activity sessions is:

   (a) not married

   (b) not favorable

   (c) neutral

   (d) supportive

   (e) fully suportive

7. Are you currently a smoker (smoking the equivalent of at least 1/2 pack of cigarettes a day)?

   (a) yes (b) no

8. If you are (or were) a smoker, has the desire to smoke occurred less frequently as a result of exercising with the LEHP?

   (a) yes

   (b) no

   (c) never smoked while enrolled in the LEHP.

9. How would you describe the intensity level of your present occupation? (Note: If retired, how would you describe the intensity level of your past occupation?)

   (a) sedentary (ie desk work)

   (b) moderately active (ie floor supervisor, doctor, nurse)

   (c) very active (ie deliverer, postal worker)

   (d) heavy work (construction worker)

10. Whenever absent from the LEHP exercise sessions, what would you consider to be the MOST COMMON REASON for nonattendance?

   (a) work schedule conflicts

   (b) personal schedule conflicts

   (c) sick

   (d) did not feel like attending

11. Which of the following would you consider to be the MAJOR reason for joining the LEHP - Adult Fitness Unit:

   (a) recommended by a physician

   (b) family / spouse felt it was important

   (c) to improve fitness

   (d) to socialize with other participants

   (e) to gain self - esteem

please go to the next page...

For questions 12 - 25, please fill in the appropriate answer according to the following key:

a) strongly agree
b) agree
c) undecided
d) disagree
e) strongly disagree

12. The time of the LEHP - Adult Fitness exercise sessions was suitable to my needs. (5:30 - 7:00 a.m., 4:00 - 6:00 p.m.)

13. The cost of the LEHP - Adult Fitness Unit (evaluations and exercise sessions) is reasonable.

14. The time of the LEHP - Adult Fitness exercise sessions did not interfere with daily activities.

15. The exercise facilities were easily accessible to/from home and/or work.

16. The exercise facilities are clean and pleasant.

17. The type of activity offered in the LEHP - Adult Fitness Unit is suitable to my needs (running, stationary cycling, swimming, weight training, and land and water aerobics).

18. Graded exercise tests (GXT's) are conducted at reasonable time intervals. (**NOTE**: If your GXT's are **NOT** conducted at the University of Wisconsin - LaCrosse Laboratory, go on to question # 20, if you **never had** a GXT before, go on to question # 21)

19. The LEHP Laboratory procedures are conducted professionally.

20. The purpose of the GXT was clearly explained to me.

21. Follow-up on GXT results were provided to me within 2 weeks of having my GXT.

22. The exercise leaders are helpful, concerned, and attentive to my questions regarding exercise and health.

23. Warmup sessions are beneficial.

24. My physician supports my attendance in the LEHP - Adult Fitness Unit.

25. I generally feel comfortable (socially) attending the LEHP - Adult Fitness Unit.

APPENDIX C

La Crosse Exercise and Health Program

lege of Health, Physical Education and Recreation • University of Wisconsin-La Crosse • 1725 State Street, La Crosse, WI 54601-9959

July 5, 1988

Dear Adult Fitness Participant:

As you may know, I am a graduate assistant at the University of Wisconsin - LaCrosse in the Adult Fitness / Cardiac Rehabilitation Master's Degree Program. I am currently working on my thesis which has to do with ways in which the Adult Fitness Program can be changed to better fit your needs.

Please take time to answer both of the enclosed surveys (part I first, and then part II) so that an accurate evaluation of the program can be made. For confidentiality, you are not required to put your name on the answer sheet, however, each questionnaire was numbered so that statistical analyses can be made easily on a computer.

Please darken in completely the appropriate circle on the enclosed pink ob-scan answer sheets. Answer all questions using a # 2 pencil and only fill in the circles with a corresponding question (not all numbers will be used on both answer sheets). If you plan on attending the Adult Fitness Program in the next couple of days please bring the completed survey along with you. Otherwise, I will be by in the next week to pick up your completed surveys. Your cooperation is very much appreciated. Thank you for your time.

Sincerely,

Thomas F. Kowalski

TFK:mm

Enclosures

APPENDIX D

APPENDIX D

NONSIGNIFICANT EQ RESULTS

Table 21

Q1 AEROBIC ACTIVITY BEFORE ENTERING THE LEHP - ADULT FITNESS UNIT

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIANT	21	18	3	1	0	43			
NCOMP.	7	9	1	1	0	18			
TOTAL	28	27	4	2	0	61	.90633	4	.8239
A.M.	24	21	3	2	0	50			
P.M.	4	6	1	0	0	11			
TOTAL	28	27	4	2	0	61	1.15794	3	.7631
MALE	16	22	3	1	0	42			
FEMALE	12	5	1	1	0	19			
TOTAL	28	27	4	2	0	61	4.20011	3	.2407
COMP. A.M.	18	15	3	1	0	37			
COMP. P.M.	3	3	0	0	0	6			
TOTAL	21	18	3	1	0	43	.76094	3	.8588
COMP. MALE	12	15	3	1	0	31			
COMP. FMLE	9	3	0	0	0	12			
TOTAL	21	18	3	1	0	43	5.01171	3	.1709

Table 22
Q2 CURRENT AEROBIC ACTIVITY OUTSIDE OF THE LEHP - ADULT FITNESS UNIT

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
A.M.	6	7	0	18	6	50			
P.M.	0	3	0	4	4	11			
TOTAL	6	10	0	22	10	61	8.41397	4	.0775
MALE	6	5	5	17	6	42			
FEMALE	0	5	5	5	4	19			
TOTAL	6	10	10	22	10	61	5.78857	4	.2155
COMP. A.M.	4	5	10	16	2	37			
COMP. P.M.	0	2	0	3	1	6			
TOTAL	4	7	10	19	3	43	4.50787	4	.3416
COMP. MALE	4	4	6	15	2	31			
COMP. FMLE	0	3	4	4	1	12			
TOTAL	4	7	10	19	3	43	3.54052	4	.4717

Table 23
Q3 MOST BENEFICIAL COMPONENT OF THE LEHP - ADULT FITNESS UNIT

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIANT	33	5	4	1	0	43			
NONCOMP.	14	1	1	0	2	18			
TOTAL	47	6	5	1	2	61	5.89112	4	.2074
A.M.	38	5	5	1	1	50			
P.M.	9	1	0	0	1	11			
TOTAL	47	6	5	1	2	61	2.74992	4	.6005
MALE	33	3	4	1	1	42			
FEMALE	14	3	1	0	1	19			
TOTAL	47	6	5	1	2	61	2.10847	4	.7158
COMP. A.M.	27	5	4	8	1	37			
COMP. P.M.	6	0	0	0	0	6			
TOTAL	33	5	4	8	1	43	2.11302	3	.5493
COMP. MALE	24	3	3	1	0	31			
COMP. FMLE	9	2	1	0	0	12			
TOTAL	33	5	4	1	0	43	.77394	3	.8557

Table 24
Q4 EXERCISE PRESCRIPTION HEART RATE (10 SECOND COUNT)

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIANT	5	30	5	3	0	43			
NONCOMP.	1	13	4	0	0	18			
TOTAL	6	33	9	3	0	61	2.70759	3	.4389
A.M.	5	35	7	3	0	50			
P.M.	1	8	2	0	0	11			
TOTAL	6	43	9	3	0	61	.78396	3	.8533
MALE	4	28	7	3	0	42			
FEMALE	2	15	2	0	0	19			
TOTAL	6	43	9	3	0	61	1.98470	3	.5756
COMP. A.M.	4	26	4	3	0	37			
COMP. P.M.	1	4	1	0	0	6			
TOTAL	5	30	5	3	0	43	.80060	3	.8493
COMP. MALE	3	21	4	3	0	31			
COMP. FMLE	2	9	1	0	0	12			
TOTAL	5	30	5	3	0	43	1.74543	3	.6269

Table 25
Q5 INTENSITY OF USUAL EXERCISE SESSION

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	1	3	32	7	0	43			
NONCOMP.	0	1	11	6	0	18			
TOTAL	1	4	43	13	0	61	2.50811	3	.4738
A.M.	1	4	36	9	0	50			
P.M.	0	0	7	4	0	11			
TOTAL	1	4	43	13	0	61	2.61618	3	.4547
MALE	1	3	28	10	0	42			
FEMALE	0	1	15	3	0	19			
TOTAL	1	4	43	13	0	61	1.19759	3	.7536
COMP. A.M.	1	3	28	5	0	37			
COMP. P.M.	0	0	4	2	0	6			
TOTAL	1	3	32	7	0	43	1.95077	3	.5827
COMP. MALE	1	3	22	5	0	31			
COMP. FMLE	0	0	10	2	0	12			
TOTAL	1	3	22	7	0	43	1.72768	3	.6308

Table 26
Q6 SPOUSE'S SUPPORT FOR OWN INVOLVEMENT IN PHYSICAL ACTIVITY

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANC
COMPLIER	0	0	7	8	22	37			
NONCOMP.	0	1	0	5	10	16			
TOTAL	0	1	7	13	32	53	5.77880	3	.1229
A.M.	0	1	7	9	25	42			
P.M.	0	0	0	4	7	11			
TOTAL	0	1	7	13	32	53	2.91236	3	.4053
MALE	0	1	6	11	20	38			
FEMALE	0	0	1	2	12	15			
TOTAL	0	1	7	13	32	53	3.47560	3	.3239
COMP. A.M.	0	0	7	6	18	31			
COMP. P.M.	0	0	0	2	4	6			
TOTAL	0	0	7	8	22	37	1.87170	3	.3923
COMP. MALE	0	0	6	7	16	29			
COMP. FMLE	0	0	1	1	6	8			
TOTAL	0	0	7	8	22	37	1.02965	3	.5976

Table 27
Q7 CURRENTLY A SMOKER

GROUP	A	B	TOTAL	CHI-SQ	D.F.	SIGNIFICAN
COMPLIER	1	42	43			
NONCOMP.	1	17	18			
TOTAL	2	59	61	.41743	1	.5182
A.M.	2	48	50			
P.M.	0	11	11			
TOTAL	2	59	61	.45492	1	.5000
MALE	2	40	42			
FEMALE	0	19	19			
TOTAL	2	59	61	.93543	1	.3335
COMP. A.M.	1	36	37			
COMP. P.M.	0	6	6			
TOTAL	1	42	43	.16602	1	.6837
COMP. MALE	1	30	31			
COMP. FMLE	0	12	12			
TOTAL	1	42	43	.39631	1	.5290

Table 28
Q8 DESIRE TO SMOKE SINCE ENTERING THE LEHP ADULT FITNESS UNIT

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	6	4	33	0	0	43			
NONCOMP.	3	1	13	1	0	18			
TOTAL	9	5	43	1	0	61	2.70392	3	.4396
A.M.	6	4	39	1	0	50			
P.M.	3	1	7	0	0	11			
TOTAL	9	5	46	1	0	61	1.90523	3	.5923
MALE	5	4	33	0	0	42			
FEMALE	4	1	13	1	0	19			
TOTAL	9	5	43	1	0	61	3.42098	3	.3312
COMP. A.M.	5	3	29	0	0	37			
COMP. P.M.	1	1	4	0	0	6			
TOTAL	6	4	33	0	0	43	.53559	2	.7651
COMP. MALE	4	3	24	0	0	31			
COMP. FMLE	2	1	9	0	0	12			
TOTAL	6	4	33	0	0	43	.11121	2	.9459

Table 29
Q9 INTENSITY LEVEL OF PRESENT OCCUPATION

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	19	19	5	0	0	43			
NONCOMP.	6	10	2	0	0	18			
TOTAL	25	29	7	0	0	61	.71261	2	.7003
A.M.	21	25	4	0	0	50			
P.M.	4	4	3	0	0	11			
TOTAL	25	29	7	0	0	61	3.3410	2	.1882
MALE	18	19	5	0	0	42			
FEMALE	7	10	2	0	0	19			
TOTAL	25	29	7	0	0	61	.28757	2	.8661
COMP. A.M.	17	17	3	0	0	37			
COMP. P.M.	2	2	2	0	0	6			
TOTAL	19	19	5	0	0	43	3.19697	2	.2022
COMP. MALE	15	12	4	0	0	31			
COMP. FMLE	4	7	1	0	0	12			
TOTAL	19	19	5	0	0	43	1.35303	2	.5084

Table 30
Q10 MOST COMMON REASON FOR NONATTENDANCE

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	4	2	37	0	0	43			
NONCOMP.	1	0	17	0	0	18			
TOTAL	5	2	54	0	0	61	1.15561	2	.5611
A.M.	5	1	44	0	0	50			
P.M.	0	1	10	0	0	11			
TOTAL	5	2	54	0	0	61	2.49135	2	.2877
MALE	3	1	38	0	0	42			
FEMALE	2	1	16	0	0	19			
TOTAL	5	2	54	0	0	61	.57218	2	.7512
COMP. A.M.	4	1	32	0	0	37			
COMP. P.M.	0	1	5	0	0	6			
TOTAL	4	2	37	0	0	43	2.8190	2	.2443
COMP. MALE	3	1	27	0	0	31			
COMP. FMLE	1	1	10	0	0	12			
TOTAL	4	2	37	0	0	43	.51626	2	.7725

Table 31
Q11 MAJOR REASON FOR JOINING

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	17	15	8	3	0	43			
NONCOMP.	8	8	1	1	0	18			
TOTAL	25	23	9	4	0	61	1.88571	3	.5965
COMP. A.M.	16	11	7	3	0	37			
COMP. P.M.	1	4	1	0	0	6			
TOTAL	17	15	8	3	0	43	3.44215	3	.3283

Table 32
Q12 TIME OF LEHP SUITABLE TO NEEDS

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	33	9	0	1	0	43			
NONCOMP.	13	3	1	1	0	18			
TOTAL	46	12	1	2	0	61	2.94429	3	.4003
A.M.	38	9	1	2	0	50			
P.M.	8	3	0	0	0	11			
TOTAL	46	12	1	2	0	61	1.06690	3	.7851
MALE	31	8	1	2	0	42			
FEMALE	15	4	0	0	0	19			
TOTAL	46	12	1	2	0	61	1.42967	3	.6986
COMP. A.M.	29	7	1	0	0	37			
COMP. P.M.	4	2	0	0	0	6			
TOTAL	33	9	1	0	0	43	.76695	2	.6815
COMP. MALE	24	6	0	1	0	31			
COMP. FMLE	9	3	0	0	0	12			
TOTAL	33	9	0	1	0	43	.52542	2	.7690

Table 33
Q13 COST OF THE LEHP WAS REASONABLE

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	26	16	0	1	0	43			
NONCOMP.	10	6	1	1	0	18			
TOTAL	36	22	1	2	0	61	2.89731	3	.4077
A.M.	32	16	1	1	0	50			
P.M.	4	6	0	1	0	11			
TOTAL	36	22	1	2	0	61	4.04034	3	.2571
MALE	23	17	1	1	0	42			
FEMALE	13	5	0	1	0	19			
TOTAL	36	22	1	2	0	61	1.92473	3	.5882
COMP. A.M.	23	13	1	0	0	37			
COMP. P.M.	3	3	0	0	0	6			
TOTAL	26	16	1	0	0	43	.59505	2	.7427
COMP. MALE	17	13	1	0	0	31			
COMP. FMLE	9	3	0	0	0	12			
TOTAL	26	16	1	0	0	43	1.63551	2	.4414

Table 34
Q14 TIME OF THE LEHP DID NOT INTERFERE WITH DAILY ACTIVITIES

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	31	11	1	0	0	43			
NONCOMP.	11	4	3	0	0	18			
TOTAL	42	15	4	1	0	61	4.26013	2	.1188
MALE	29	11	2	0	0	42			
FEMALE	13	4	2	0	0	19			
TOTAL	42	15	4	0	0	61	.80409	2	.6690
COMP. MALE	23	8	0	0	0	31			
COMP. FMLE	8	3	1	0	0	12			
TOTAL	31	11	1	0	0	43	2.65352	2	.2653

Table 35
Q15 EXERCISE FACILITIES EASILY ACCESSIBLE TO / FROM HOME AND / OR WORK

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	30	12	0	1	0	43			
NONCOMP.	9	8	1	0	0	18			
TOTAL	39	20	1	1	0	61	4.64138	3	.2000
MALE	27	14	0	1	0	42			
FEMALE	12	6	1	0	0	19			
TOTAL	39	20	1	1	0	61	2.67779	3	.4440
COMP. MALE	21	9	1	0	0	31			
COMP. FMLE	9	3	0	0	0	12			
TOTAL	30	12	1	0	0	43	.50282	2	.7777

Table 36
Q16 EXERCISE FACILITIES CLEAN AND PLEASANT

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	22	20	1	0	0	43			
NONCOMP.	10	6	1	1	0	18			
TOTAL	32	26	2	1	0	61	3.35630	3	.3399
A.M.	24	23	2	1	0	50			
P.M.	8	3	0	0	0	11			
TOTAL	32	26	2	1	0	61	2.45280	3	.4839
COMP. A.M.	19	17	1	0	0	37			
COMP. P.M.	3	3	0	0	0	6			
TOTAL	22	20	1	0	0	43	.18225	2	.9129
COMP. MALE	13	17	1	0	0	31			
COMP. FMLE	9	3	0	0	0	12			
TOTAL	22	20	1	0	0	43	3.89175	2	.1429

Table 37
Q17 TYPES OF ACTIVITIES SUITABLE TO NEEDS

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	23	17	2	1	0	43			
NONCOMP.	11	7	0	0	0	18			
TOTAL	34	24	2	1	0	61	1.38944	3	.7080
A.M.	28	20	1	1	0	50			
P.M.	6	4	1	0	0	11			
TOTAL	34	24	2	1	0	61	1.63645	3	.6512
MALE	21	18	2	1	0	42			
FEMALE	13	6	0	0	0	19			
TOTAL	34	24	2	1	0	61	2.57651	3	.4616
COMP. A.M.	20	15	1	1	0	37			
COMP. P.M.	3	2	1	0	0	6			
TOTAL	23	17	2	1	0	43	2.41027	3	.4917
COMP. MALE	14	14	2	1	0	31			
COMP. FMLE	9	3	0	0	0	12			
TOTAL	23	17	2	1	0	43	3.49080	3	.3220

Table 38
Q18 GXT'S CONDUCTED AT REASONABLE TIME INTERVALS

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	10	15	18	0	0	43			
NONCOMP.	1	11	5	1	0	18			
TOTAL	11	26	23	1	0	61	7.30853	3	.0627
A.M.	11	21	17	1	0	50			
P.M.	0	5	6	0	0	11			
TOTAL	11	26	23	1	0	61	3.67465	3	.2988
MALE	6	19	16	1	0	42			
FEMALE	5	7	7	0	0	19			
TOTAL	11	26	23	1	0	61			.6316
COMP. A.M.	10	13	14	0	0	37			
COMP. P.M.	0	2	4	0	0	6			
TOTAL	10	15	18	0	0	43	2.65165	2	.2656
COMP. MALE	6	11	14	0	0	31			
COMP. FMLE	4	4	4	0	0	12			
TOTAL	10	15	18	0	0	43	1.02748	2	.5983

Table 39
Q19 LEHP LABORATORY PROCEDURES WERE CONDUCTED PROFESSIONALLY

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIER	8	14	3	1	0	26			
NONCOMP.	2	7	0	0	0	9			
TOTAL	10	21	3	1	0	35	2.19373	3	.5332
A.M.	10	20	3	1	0	34			
P.M.	0	1	0	0	0	1			
TOTAL	10	21	3	1	0	35	.68627	3	.8764
MALE	7	17	3	0	0	27			
FEMALE	3	4	0	1	0	8			
TOTAL	10	21	3	1	0	35	4.72608	3	.1930
COMP. A.M.	8	14	3	1	0	26			
COMP. P.M.	0	0	0	0	0	0			
TOTAL	8	14	3	1	0	26	---	-	---
COMP. MALE	6	11	3	0	0	20			
COMP. FMLE	2	3	0	1	0	6			
TOTAL	8	14	3	1	0	26	4.27143	3	.2336

Table 40
Q20 PURPOSE OF GXT CLEARLY EXPLAINED

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
A.M.	11	17	5	9	5	47			
P.M.	2	3	1	1	0	7			
TOTAL	13	20	6	10	5	54	1.03657	4	.9042
MALE	8	15	4	7	5	39			
FEMALE	5	5	2	3	0	15			
TOTAL	13	20	6	10	5	54	2.85657	4	.5821
COMP. A.M.	11	11	3	7	5	37			
COMP. P.M.	2	0	0	1	0	3			
TOTAL	13	11	3	8	5	40	2.99376	4	.5589
COMP. MALE	8	9	3	5	5	30			
COMP. FMLE	5	2	0	3	0	10			
TOTAL	13	11	3	8	5	40	4.86247	4	.3017

Table 41
Q21 FOLLOW UP ON GXT RESULTS WERE PROVIDED

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIANT	15	21	7	0	0	43			
NONCOMP.	9	7	2	0	0	18			
TOTAL	24	28	9	0	0	61	1.24018	2	.5379
A.M.	18	25	7	0	0	50			
P.M.	6	3	2	0	0	11			
TOTAL	24	28	9	0	0	61	1.90966	2	.3849
COMP. A.M.	12	20	5	0	0	37			
COMP. P.M.	3	1	2	0	0	6			
TOTAL	15	21	7	0	0	43	3.18027	2	.2039

Table 42
Q22 EXERCISE LEADERS HELPFUL, CONCERNED, AND ATTENIVE TO NEEDS

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIANT	20	19	3	1	0	43			
NONCOMP.	11	6	1	0	0	18			
TOTAL	31	25	4	1	0	61	1.24018	3	.5379
A.M.	25	21	3	1	0	50			
P.M.	6	4	1	0	0	11			
TOTAL	31	25	4	1	0	61	.45791	3	.9280
MALE	18	20	3	1	0	42			
FEMALE	13	5	1	0	0	19			
TOTAL	31	25	4	1	0	61	3.65376	3	.3014
COMP. A.M.	17	17	2	1	0	37			
COMP. P.M.	3	2	1	0	0	6			
TOTAL	20	19	3	1	0	43	1.30471	3	.7280
COMP. MALE	11	16	3	1	0	34			
COMP. FMLE	9	3	0	0	0	12			
TOTAL	20	19	3	1	0	43	5.83950	3	.1197

Table 43
Q23 EXERCISE SESSIONS ARE BENEFICIAL

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIANT	22	18	3	0	0	43			
NONCOMP.	12	5	1	0	0	18			
TOTAL	34	23	4	0	0	61	1.25367	2	.5343
A.M.	27	20	3	0	0	50			
P.M.	7	3	1	0	0	11			
TOTAL	34	23	4	0	0	61	.66893	2	.7157
MALE	23	16	3	0	0	42			
FEMALE	11	7	1	0	0	18			
TOTAL	34	23	4	0	0	61	.09897	2	.9517
COMP. A.M.	20	15	2	0	0	37			
COMP. P.M.	2	3	1	0	0	6			
TOTAL	22	18	3	0	0	43	1.48205	2	.9517
COMP. MALE	16	13	2	0	0	31			
COMP. FMLE	6	5	1	0	0	12			
TOTAL	22	16	3	0	0	43	.04846	2	.9761

Table 44
Q24 PHYSICIAN SUPPORTS ATTENDANCE

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIANT	22	20	1	0	0	43			
NONCOMP.	12	4	2	0	0	18			
TOTAL	34	24	3	0	0	61	4.4125	2	.1085
A.M.	26	21	3	0	0	50			
P.M.	8	3	0	0	0	11			
TOTAL	34	24	3	0	0	61	1.85202	2	.3961
MALE	21	18	3	0	0	42			
FEMALE	13	6	0	0	0	19			
TOTAL	34	24	3	0	0	61	2.57651	2	.2758
COMP. A.M.	18	18	1	0	0	37			
COMP. P.M.	4	2	0	0	0	6			
TOTAL	22	20	1	0	0	43	1.48205	2	.4766
COMP. MALE	15	15	1	0	0	31			
COMP. FMLE	7	5	0	0	0	12			
TOTAL	22	20	1	0	0	43	.63838	2	.7267

Table 45
Q25 FEEL COMFORTABLE (SOCIALLY) ATTENDING

GROUP	A	B	C	D	E	TOTAL	CHI-SQ	D.F.	SIGNIFICANCE
COMPLIANT	25	16	1	0	1	43			
NONCOMP.	11	6	1	0	0	18			
TOTAL	36	22	2	0	1	61	.89419	3	.8268
A.M.	28	20	1	0	1	50			
P.M.	8	2	1	0	0	11			
TOTAL	36	22	2	0	1	61	3.22028	3	.3589
MALE	24	17	1	0	0	42			
FEMALE	12	5	1	0	1	19			
TOTAL	36	22	2	0	1	61	3.34951	3	.3408
COMP. A.M	20	15	1	0	1	37			
COMP. P.M.	5	1	0	0	0	6			
TOTAL	25	16	1	0	1	43	1.87641	3	.5985
COMP. MALE	17	13	1	0	0	31			
COMP. FMLE	8	3	0	0	1	12			
TOTAL	25	16	1	0	1	43	3.84544	3	.2786

APPENDIX E

APPENDIX E

PANEL OF EXPERTS

DR. TERRY BOLAND, M.D.	GUNDERSON CLINIC LACROSSE, WI 54601
DR. NANCY BUTTS / AF/CR CLASS OF '88 - '89	AF/CR U OF W - LACROSSE LACROSSE, WI 54601
DR. GEORGE DAVIES	PHYSICAL THERAPY U OF W - LACROSSE LACROSSE, WI 54601
DR. JAMES GOULD	PHYSICAL THERAPY U OF W - LACROSSE LACROSSE, WI 54601