# INFLUENCES OF FITNESS ASSESSMENT PROGRAMS ON FEMALE UNDERGRADUATE EXERCISE AND SPORTS SCIENCE MAJORS

By

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# INFLUENCES OF FITNESS ASSESSMENT PROGRAMS ON FEMALE UNDERGRADUATE EXERCISE AND SPORTS SCIENCE MAJORS

## ABSTRACT

Fitness assessment programs are often used to determine an individual's health-related fitness. Knowledge of one's health-related fitness can help in determining risk factors of various diseases and to establish goals for improvement (Jorgensen, Anderson, Froberg, Maeder, Smith, & Aadahl, 2009). Setting specific goals for oneself is the most efficient way towards making improvements (Latham, 2004).

The purpose of this study was to analyze how effective goal setting is for female college undergraduates in making improvements to their health-related fitness as measured by the Individual Assessment and Fitness Planning (IFAP) program. This study consisted of seventeen (17) Exercise and Sports Science major participants who had previously completed the IFAP, which included fitness testing, setting goals, and establishing a fitness plan for themselves. The changes to health-related fitness made by each participant were analyzed through the use of a survey that addressed five (5) components: overall health-related fitness, cardiovascular endurance, muscular endurance, flexibility, and body composition. The survey was used as an attempt to establish a relationship that may exist between improvements and goal setting.

Results show a majority of participants who improved in any of the five (5) components analyzed attributed this success to having improved personal health-related fitness in comparison to the previous year. Studies have shown that if a high, but reasonable, goal is set and a high level of commitment is able to be maintained, participants are likely to reach their goals (Dishman, Vandenberg, Motl, Wilson, DeJoy, 2010). All participants reported that they felt comfortable establishing goals for themselves, but only approximately half believed that the goal setting methods established by IFAP was effective.

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# REVIEW OF LITERATURE

Fitness assessments are often used as a way to measure an individual's physical activity level and their physical fitness. Various research has shown assessments to be important because inactivity is associated with developing various chronic diseases, which could later lead to death (Jorgensen, Anderson, Froberg, Maeder, Smith, & Aadahl, 2009). Jorgenson and colleagues (2009), looked to evaluate how physical activity and fitness are measured and whether or not these are effective tests. The measurements used in this study were various tests to determine health-related fitness through accelerometry and self-report questionnaires, both of which present their benefits and drawbacks.

Due to the rise of the obesity epidemic and the number of individuals living sedentary lifestyles, it is important to have a way to assess health-related fitness, as well as provide an opportunity for improvement. Fitness assessments allow of these measures. These tests typically look at the five components of health-related fitness, which include cardiovascular endurance, muscular endurance, muscular strength, flexibility, and body composition. The only way individuals are able to make changes and/or improvements is through setting realistic goals for themselves. Various individuals respond to goals setting differently, and also require different forms of motivation towards reaching their established goals. With proper understanding of fitness assessments and goal setting, individuals are able to analyze their results of testing and establish goals that are both effective and realistic in being able to achieve success.

## Fitness Testing

**Components.** Fitness tests typically look at the five components of health-related fitness, which include cardiovascular endurance, muscular endurance, muscular strength, flexibility, and body composition. Capersen and colleagues (1985) defined physical fitness as a set of attributes that people have or achieve that relates to the ability to perform physical activity. Further, the degree to which people have these attributes can be measured through specific tests.

Fitness testing can be performed within laboratory settings, as a self-assessment, or in combination depending on accuracy, availability, and cost restraints. Cardiovascular endurance can be measured by maximal oxygen uptake on a treadmill or at timed 1.5-mile run. Muscular endurance can be measured by isokinetic tests or sit-ups. Muscular strength can be measured by cable tensiometer and handgrip dynamometer. Flexibility can be measured by Leighton flexometer or the sit-and-reach test. The final component, body composition, can be measured by underwater hydrostatic weighing or with skinfold calipers at various sites on the body (Capersen, Powell, Christenson, 1995).

**Validity and reliability of testing.** In using fitness assessments to determine physical activity and fitness levels, high validity is necessary. A study performed by Castro-Pinero and colleagues (2010) tested many of the popular fitness assessments that are used in assessing the components of health-related fitness. Several tests of the health-related fitness components were determined to have strong validity: twenty meter shuttle run test for cardiorespiratory endurance, hand-grip dynamometer test for muscular strength, skinfold measures and body mass index (BMI) for body composition (Castro-Pinero, Artero, Espana-

Romero, Ortega, Sjostrom, & Suni, 2010). The study also found moderate evidence supporting the validity of a one-mile run/walk test for cardiovascular endurance.

As with any test used in testing physical fitness, it is important that it be reliable as well as valid. For the tests used to assess muscular strength and muscular endurance, a test-retest method is the best way to ensure the reliability of the test (Jorgensen, Anderson, Froberg, Maeder, Smith, & Aadahl, 2009). Jorgensen and colleagues (2009) determined hand grip dynamometer tests to be reliable for muscular strength testing and push-ups or sit-ups to be reliable for muscular endurance.

## Goal Setting

Goal setting is often used in conjunction with fitness testing in order to help the participants to make improvements in their health-related fitness. By establishing realistic goals for oneself, improvements are often able to be made. In a study completed by Latham (2004), it was found that using specific goals are the most effective in making improvements to performance.

**General goal setting.** An investigation was completed by Dishman and colleagues (2010) that examined how goal setting affected an individual's outcomes. The study found that if a higher goal was set and high levels of commitment were maintained, the participants were more likely to achieve their goals. Latham (2004) looked to see what benefits could result from goal-setting and named three types of goals that could be set: specific hard goals, vague goals, and specific easy goals, with specific hard being the most beneficial to motivating participants towards making improvements. The study also examined the Goal-Setting Theory, which states that a goal is a standard set to assess a participant's satisfaction (Latham, 2004).

**Goal setting and exercise.** In order to make sensible goals, it is important for individuals to be familiar with previously established guidelines that outline the minimum requirements of recommended exercise. The American College of Sports Medicine (ACSM) is one organization that has produced widely accepted guidelines for this purpose. Garber and colleagues (2011) presented a review of guidelines and expressed why these guidelines were important to follow. The authors felt that if an individual sets exercise goals for themselves, the only way for it to be effective and attainable is if there are reasonable expectations presented.

The ACSM recommends at least thirty (30) minutes per day of moderate intensity cardiovascular exercise at least five (5) days a week, at least twenty (20) minutes per day of vigorous intensity cardiovascular exercise at least three (3) days a week, or a combination of moderate and vigorous intensity cardiovascular exercise to meet these requirements. It is also recommended to include resistance training exercises into an individual's exercise plan for two (2) to three (3) days per week. In order to maintain joint range of motion, it is recommended to include flexibility exercises at least two (2) days per week for each of the major muscle groups (Garber, Blissmer, Deschenes, Franklin, Lamonte, Nieman, & Swain, 2011).

**Goal setting studies.** Studies have been conducted to show when goal setting is beneficial and what actions should be taken in order to optimize the benefits of goals setting. A study completed by Strecher and colleagues (1995) shows that goal setting is helpful in making health behavior changes. It was also shown that in comparison to no goals at all or vague goals, setting a specific goal led to a higher ending performance (Strecher, Seijts, Kok, Latham, Glasgow, DeVellis, Meertens, & Bulger, 1995).

Sebire and colleagues (2011) looked at the effects that goal setting had on exercise, along with the motivation of the individual who had set the exercise goals. Each of the 101 participants reported their exercise goals and the motivation toward attaining their goals. They then were provided with an accelerometer to wear for seven (7) consecutive days to track their progress. The investigators found that setting the goals and having a high motivation level led to following through with being physically active (Sebire, Standage, & Vansteenkiste, 2011).

## Motivation

Motivation is often a component of exercise programming. Individuals with high motivation levels are much more likely to begin an exercise plan and to follow-through with their plan consistently. While some individuals are able to create this motivation for themselves, others rely to outside sources to provide them with motivation. In a study completed by Brickell and colleagues (2010), it was found that adding motivational counseling to an exercise program is an effective way help increase exercise participation. A low level of motivation often leads to an individual dropping out of an exercise program. In a study completed by Boyd and colleagues, it was found that nearly half of all individuals who began a new program would end participation within just six (6) months (Boyd, Weinmann, Zenong, 2002). It is believed that in order to increase exercise levels of individuals, it is important to have both behavior and psychological components within a program (Capdevila, Niñerola, Cruz, Losilla, Parrado, Pinatanel, Valero, & Vives, 2007).

**Extrinsic versus intrinsic.** The two main types of motivation used in exercise are intrinsic motivation and extrinsic motivation. A person who exhibits external motivation is someone who only focuses on rewards and certain results as their motivation, whereas

someone who possesses internal motivation does not have to rely on rewards system as a form of motivation (Lei, 2010). An individual's background or lifestyle can sometimes play a role in determining which type of exercise is more effective. Egli and colleagues (2011) found that males tend to be more motivated by intrinsic factors, while females tend to rely more on extrinsic factors (Egli, Bland, Melton, Czech, 2011). Extrinsic motivation is often necessary during the beginning of a program, especially for sedentary individuals, but intrinsic motivation is helpful in making movements towards maintaining an exercise program (Capdevila, et al., 2007).

**Motivation and exercise.** With motivation and encouragement present in an exercise program, individuals are often able to be much more successful than without, and are also usually able to maintain commitment to the program for a longer time. In a study completed by Capdevila and colleagues (2007), it was shown that the lower an individual's exercise level, the greater need there is for extrinsic motivating factors. Inversely, the higher exercise level an individual possesses, the fewer barriers they are faced with in relation to intrinsic motivation (Capdevila, et al., 2007).

## Fitness Assessments

Fitness assessments are often used to assess fitness levels, but they can also be used to determine risk factors. Each of the components of health-related fitness allow for a variety of risk factors to be assessed. Cardiovascular fitness is often referred to as an important component in identifying and preventing any cardiovascular problems that may exist (Lakoski, Barlow, Farrell, Berry, Morrow, and Haskell, 2011). This study by Lakoski and collegues (2011) determined that age, gender, and body mass index (BMI) were the most important factors when it came to determining the cardiovascular fitness of an individual.

**Fitness behaviors of college-age students.** Buckworth and Nigg (2004) studied college students who were enrolled in activity classes to see the relationships that existed between physical activity, exercise, and sedentary behavior. Each of the students filled out a questionnaire regarding their activity level and lifestyle. The study showed that of those studied, the men reported more exercise time than women, but men also reported engaging in more screen time (Buckworth & Nigg, 2004).

In another study with college-age participants, Dunn and colleagues (1999) investigated the difference in a 24-month exercise intervention program on lifestyle physical activity and traditional exercise. Each of the groups were subjected to six (6) months of intense intervention, followed by eighteen (18) months of maintenance intervention. The authors found each of the programs to be effective in showing change. They measured the improvements mainly through maximal oxygen consumption ($VO_{2max}$) (Dunn, Marcus, Kampert, Garcia, Kohl, & Blair, 1999).

**Women and fitness.** In an investigation completed by Hendricks and Herbold (1998), behaviors that could be viewed as health-related in women of college age were studied. The authors found that they had very unbalanced diets that could lead to obesity. They also looked to see the willingness of participants to change their health-related behaviors, and found that women were much more likely to make changes in comparison to men (Hendricks & Herbold, 1998).

## Conclusion

Fitness assessments are used to determine a baseline fitness level. As shown in the studies investigated by Strecher and colleagues (1995) and Brickwell and colleagues (2010), the best way to make improvements to fitness is through goal setting while maintaining

motivation. For the goal setting to be effective, specific goals with specific timelines must be met. With proper goal setting and high levels of motivation, goals can be achieved and progress can be made towards attaining a better physical fitness level in each of the health-related fitness categories.

# METHODS

The purpose of this study was to examine the impact that a fitness assessment program has on undergraduate Exercise and Sports Science (ESS) majors. This study used two research questions to assess this purpose. The first question addressed in this study was: Do health-related fitness scores, as measured by the IFAP, change yearly? Secondly, this study analyzed the following question: Is there a relationship between an individual's IFAP fitness plan goals and health-related fitness scores?

## Participants

This study included seventeen (17) participants, all of which were female undergraduate Exercise and Sports Science majors, ages 19-23 (M=20.5), who had participated in the Individual Assessment and Fitness Planning (IFAP) testing the previous year (2010).

Before this study could be completed, it first had to be approved through the Institutional Review Board (IRB). This approval process assured that completing the study would be safe for all participants. Participants were provided with a Consent Form (Appendix A), which outlined why they were chosen as participants, what they would be doing if they chose to participate, and assured that their information would be stored securely at all times.

## Measures

**Fitness Testing.** Each participant's health-related fitness scores were assessed through the use of the Individual Assessment and Fitness Plan (IFAP) program. This

program allows for individuals to set goals for themselves based on the scores they receive in order to make improvements throughout the year before being tested again. The equipment used to measure fitness were 1.5-mile running course, yoga mat, Spree ball, sit-and-reach box, tape measure, skinfold calipers, scale with height measurement, and blood pressure machine. The participants completed the following tests: height and weight measurements, resting heart rate, resting blood pressure, waist circumference, 3-site skinfold, 1.5-mile run, maximal push-up, and Modified Sit-and-Reach.

**Survey.** In order to assess participants on how effective they believed their goal setting to be, a Participant Survey (Appendix B) was created. This was an original survey created for the use in this study. It began by addressing how long a participant followed through with their established plan from the previous year, if they were able to make improvements, and why they improved. After careful review, it was decided that the survey should also address the issue of participants not making improvements to their health-related fitness scores. This was done by adding questions to each of the components that allowed participants to provide a reason for not improving. The survey ended by allowing participants to provide feedback on what they thought would be most effective for helping them establish and succeed at reaching their goals.

## Procedures

The seventeen (17) participants completed the testing portion of this study during the scheduled Individual Assessment and Fitness Plan (IFAP) fitness test. The IFAP is a requirement of all Exercise and Sports Science majors. Following the completion of the IFAP, participants received their results via fitness testing software, MicroFit.

All participants were then provided with an Informed Consent (Appendix A) and a Participant Survey (Appendix B). The survey asked participants if they made improvements, in comparison to the previous year's (2010) IFAP, in overall health-related fitness and four of the five components of health related fitness, cardiovascular endurance, muscular endurance, flexibility, and body composition. The participants were then asked to provide reasoning as to why they did, or did not, make improvements from the previous year. The survey also addressed goal setting and the effectiveness of it in a fitness assessment program, such as the IFAP.

**Design and Analysis**

All data received from the participant surveys was coded by assigning each answer choice to a corresponding number (i.e., A-1, B-2, etc.). This data was then entered into a statistical analysis software program, Statistical Package for the Social Sciences (SPSS) in order to perform descriptive statistics.

Independent variables of this study were the participants, Exercise and Sports Science Majors who had previously participated in the IFAP testing. Dependent variables were the responses provided by participants through the participant survey.

The participants' responses to the portion of the survey regarding improvements made from 2010 IFAP to 2011 IFAP were qualitatively assessed to see in which components improvements were made. Descriptive statistics were then used to determine why improvements were made.

# RESULTS

Results of this study were reached using a survey assessing participants' behaviors regarding exercise and goal setting. The responses were coded by assigning numbers to the corresponding answers (i.e., A-1, B-2, etc.) and then entered into a statistical analysis software program, Statistical Package for the Social Sciences (SPSS). From this, descriptive statistics were produced, which helped to establish a relationship explaining why improvement was, or was not, made. The results are reported according to the research questions.

The first research question analyzed through this study addressed the changes of health-related fitness scores, as measured by the IFAP, from year to year. This question was addressed through the survey as forced response questions asking if improvements had been made. The results can be seen Table 1, combining all components and their rates of improvement. Overall health fitness scores and scores for the four components of health-related fitness that were assessed using IFAP were addressed in this study. The results of overall fitness score, cardiovascular endurance, and muscular endurance were all similar, finding that 52.9% reported an improvement and 47.1% reported no improvement. The body composition component showed similar results, with 47.1% of participants experiencing improvement and 52.9% having no improvement. With the flexibility component, much different results were reached with 35.3% reporting an improvement and 64.7% reporting no improvement.

The second research question used for this study was: Is there a relationship between an individual's IFAP fitness plan goals and health-related fitness scores? This portion of the study was addressed in two ways, focusing on both making improvements and not making improvements. In relation to making improvements, the options provided were: goals set as a result of last year's (2010) IFAP, training initiated just before the IFAP this year (2011), improved personal health-related fitness, experience from previously completing the IFAP (2010), and did not improve. To determine why improvements were not made, the following options were available: did not consistently follow through with my established plan, did not establish a realistic plan for improvement, lack of motivation in completing my plan, lack to time to complete my plan, and other, which provided an opportunity for a write-in answer.

For improvements made in overall fitness, which was 52.9%, 55.6% contributed this to "improved personal health-related fitness," 22.2% to "training initiated just before the IFAP this year, and 22.2% to "experience from previously completing the IFAP." Of the 47.1% that did not improve, 37.5% contributed this to "did not consistently follow through with my established plan," 37.5% to "lack of time to complete my plan," and 25.0% to "lack of motivation to complete my plan." The responses for overall fitness can be seen in Figures 3.1 and 3.2.

Each component of health-related fitness was then addressed individually and participants were provided with the same options as listed above for overall fitness. As with overall improvement in health-related fitness, cardiovascular endurance and muscular endurance each had reports of 52.9% of participants showing improvement and 47.1% not making improvements. However, the reasons attributed to improving, or not improving, differed for each of these categories. Figure 3.3 shows that for participants who improved in

cardiovascular endurance, 55.6% contributed this to "improved personal health-related fitness," 33.3% to "training initiated just before the IFAP this year," and 11.1% to "experience from previously completing the IFAP." Of the remaining 47.1% that did not improve, 50.0% contributed this to "lack of time to complete my plan," 37.5% to "lack of motivation to complete my plan," and 12.5% to "did not consistently follow through with my established plan," all of which can be seen in Figure 3.4.

For the muscular endurance component, improvement was contributed by 66.7% to "improved personal health-related fitness," 22.2% to "experience from previously completing the IFAP (2010)," and 11.1% to "training initiated just before the IFAP this year" (Figure 3.5). Of the 47.1% that did not improve, 25.0% contributed it to "did not consistently follow through with my established plan," 25.0% to "lack of motivation in completing my plan," and 50.0% to other factors not listed, which is shown in Figure 3.6.

With the flexibility component of health-related fitness, participants showed a much different rate of improvement in comparison to the other four components of this study. Figure 3.7 shows that of the 35.3% of participants who made improvements in the flexibility component of health-related fitness, 50.0% contributed their success to "improved personal health-related fitness," 33.3% to "experience from previously completing the IFAP," and 16.7% to "training initiated just before the IFAP this year." Of the remaining 64.7% that did not make improvements, which is represented in Figure 3.8, 36.4% reported it was due to "lack of motivation in completing my plan," 27.3% "did not consistently follow through with my established plan," and the final 36.4% contributed the lack of improvement to other factors.

The final component of body composition showed similar results to overall fitness, cardiovascular endurance and muscular endurance, with approximately half of participants making improvement and half of participants not making improvement. For this component, 47.1% of participants made improvements in their body composition, shown in Figure 3.9. This component was the only one to have attribution of success to "goals set as a result of last year's (2010) IFAP," with 12.5% reporting this reason. A remaining 75.0% contributed their success to "improved personal health-related fitness," the other 12.5% to "training initiated just before the IFAP this year." Figure 3.10 shows the remaining 52.9% that did not experience improvement, of which 44.4% of participants contributed this to "did not consistently follow through with my established plan," 22.2% to "lack of motivation to completing my plan," 11.1% to "lack of time to complete my plan," and 22.2% to other factors. A comparison all of responses for participants who made improvement can be seen in Table 2, and in Table 3 for participants who did not make improvement. For each of the categories, improvement was attributed to "improvement in personal health-related fitness" by more than 50.0% of the participants who improved.

The majority of participants (94.1%) stated that they did not consistently follow through with the fitness plan they had established for themselves as a result of the previous year's IFAP. In relation to how long established plans remained in effect, 41.2% reported 0-3 weeks, 11.8% reported 3-6 weeks, 5.9% reported 6-9 weeks, 11.8% reported 3-6 months, and 29.4% reported not following through at all, as seen in Figure 3.11. Many of the participants (64.7%) stated that being required to participant in the IFAP did not cause them to change their normal fitness routine. The majority of participants (88.2%) believe that the IFAP being required more than one time a year would result in them being more successful

in consistently following through with their fitness plans. While all participants reported they feel comfortable with establishing realistic goals for themselves for improvement, only 58.8% of participants believe that the goal-setting method established by the IFAP is an effective way to make improvements in their personal health-related fitness.

# DISCUSSION

The purpose of fitness assessment programs, such as the IFAP, is to assess individuals' levels of fitness in terms of the health-related fitness components. The scores obtained from fitness assessments can help determine the levels of risk an individual may have for various diseases (Jorgensen, Anderson, Froberg, Maeder, Smith, & Aadahl, 2009). It has been determined that cardiovascular fitness is one of the main indicators of heart disease risk (Lakoski, Barlow, Farrell, Berry, Morrow, Haskell, 2011). Through fitness assessments, people are able to see where improvements should be made, set goals for themselves, establish a plan to work towards improvement, and finally, implement their plan.

The results of this study confirmed that female undergraduate Exercise and Sports Science majors involved in this study did make improvements in their health-fitness scores over the course of a year. However, it also showed that majority of participants did not follow through with the established plan they set for themselves in order to make improvements. This is inconsistent to the findings of recent research, which found that setting goals and maintaining high motivation would lead to following through with an exercise program (Sebire, Standage, & Vansteenkiste, 2011). The findings of this were consistent with the original hypothesis, which stated that health-related fitness scores would improve over the course of a year.

It is important to note that while improvements were made in overall fitness and three of the four component categories, these improvements cannot necessarily be contributed to the plans each participant set for themselves the previous year. Interestingly, through this

study it was found that only one participant reported consistently following through with their plan established the year before. The majority of participants attributed their lack of improvement for all categories to either not consistently following through with their established plan, or lack of motivation in completing their plan. In looking for ways to make improvement for the following years of using the IFAP, participants were able to do write-in answers of what would be helpful for them. Many participants reported performing the fitness test more than one time a year or having some form of check-in around six months. Each of these options would hold participants more responsible for meeting their goals, providing them with more extrinsic motivation, rather than intrinsic of simply wanting to improve their health-related fitness for themselves, which has been seen as effective in beginning exercise programs (Capdevila, et al., 2007).

The results did match the original hypothesis of participants making improvements to their health-related fitness scores through the IFAP, with nearly half of participants making improvements in individual components and about half of participants not making improvements. One of the biggest limitations of this study was the small participant size that was available for testing. While it is believed that the results reached by this study would be somewhat consistent with those of a larger study, a larger and wider sample size would provide for a more accurate depiction. This study only focused on health-related fitness improvements of females. A study focusing on only males or one focusing on a population of mixed gender could produce different results. Other limitations to this study could be the type of population chosen. With this study consisting of only undergraduate Exercise and Sports Science majors, majority of the participants have an interest in exercise. However,

this study being completed on a group on athletes who are highly motivated or a group of sedentary individuals who are not motivated would produce very different results.

Fitness testing is beneficial to undergraduate Exercise and Sports Science majors in that it provides individuals with the knowledge of their level of health-related fitness. This knowledge can be used to establish goals and make improvements to an individual's fitness. With the proper instruction of established exercise guidelines and the guidance in using these guidelines to set individual goals, fitness testing can be a very beneficial tool to use in this field.

# APPENDIX A: INFORMED CONSENT

**Influences of Fitness Assessment Programs on Female Undergraduate Exercise and Sports Science Majors**

Investigator: Lydia King

Dear Meredith Student,

You are being invited to participate in a study that examines the Individual Assessment and Fitness Planning (IFAP) program for female undergraduate Exercise and Sports Science majors. I am asking for your participation because you are an Exercise and Sports Science major who has previously participated in the IFAP program.

Your participation will involve completing a brief questionnaire after you receive your current IFAP results. The questionnaire pertains to your IFAP planning from last year to this year.

Your name or identity will not be revealed as a result of participation. In order to maintain confidentiality of your records, I will assign you a number that will be used throughout the study. Your data will be secured and results will be disposed of safely at the conclusion of this study.

I will be available to answer any question you may have about this study. Questions may also be answered by Dr. Stephanie Little, supervisor of the study, at 105 Weatherspoon Annex, Meredith College, Raleigh, NC 27607; (910) 760-8176.

To participate in this study, please sign and date below after you have read the above information completely. Thank you for your consideration.

With kind regards,

*Lydia King*

Lydia King

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I have read the information contained in the consent letter that describes the study and have received answers to any questions I asked. I consent to take part in this research project.

**Subject's signature** _____ **Date** _____

**Subject's name (printed)** _____

## APPENDIX B: PARTICIPANT SURVEY

**Please fill out the following background information:**

**Participant #: _____ Age:_____ Class Year: _____**

**The purpose of this survey is to gather information from Exercise and Sports Science majors concerning the Individual Assessment and Fitness Planning (IFAP) program. Your answers will be kept confidential and will in no way affect completion credit for the IFAP assignment. Circle the answer that is most appropriate according to your fitness planning, and do not leave any questions unanswered. Thank you in advance for completing this survey.**

1. Did you follow through with the fitness plan you established last year (2010) following the IFAP?
   (a) Yes
   (b) No

2. Approximately how long did you follow through with your established plan?
   (a) 0-3 weeks
   (b) 3-6 weeks
   (c) 6-9 weeks
   (d) 3-6 months
   (e) 6-12 months
   (f) Did not follow through

3. Did your overall IFAP results improve this year?
   (a) Yes
   (b) No

4. What was this improvement due to?
    (a) Goals set as a result of last year's (2010) IFAP
    (b) Training initiated just before the IFAP this year (2011)
    (c) Improved personal health-related fitness
    (d) Experience from previously completing the IFAP (2010)
    (e) Did not improve

5. If you did not improve overall, what was this due to?
    (a) Did not consistently follow through with my established plan
    (b) Did not establish a realistic plan for improvement
    (c) Lack of motivation in completing my plan
    (d) Lack of time to complete my plan
    (e) Other: _____

6. Did you experience improvement in your cardiovascular endurance (1.5 mile run)?
    (a) Yes
    (b) No

7. What was this improvement due to?
    (a) Goals set as a result of last year's (2010) IFAP
    (b) Training initiated just before the IFAP this year (2011)
    (c) Improved personal health-related fitness
    (d) Experience from previously completing the IFAP (2010)
    (e) Did not improve

8. If you did not improve in cardiovascular fitnes, what was this due to?
    (a) Did not consistently follow through with my established plan
    (b) Did not establish a realistic plan for improvement
    (c) Lack of motivation in completing my plan
    (d) Lack of time to complete my plan
    (e) Other: _____

9. Did you experience improvement in your muscular endurance (push-up test)?
    (a) Yes
    (b) No

10. What was this improvement due to?
    (a) Goals set as a result of last year's (2010) IFAP
    (b) Training initiated just before the IFAP this year (2011)
    (c) Improved personal health-related fitness
    (d) Experience from previously completing the IFAP (2010)
    (e) Did not improve

11. If you did not improve in muscular endurance, what was this due to?
    (a) Did not consistently follow through with my established plan
    (b) Did not establish a realistic plan for improvement
    (c) Lack of motivation in completing my plan
    (d) Lack of time to complete my plan
    (e) Other: _____

12. Did you experience improvement in your flexibility (sit-and-reach)?
    (a) Yes
    (b) No

13. What was this improvement due to?
    (a) Goals set as a result of last year's (2010) IFAP
    (b) Training initiated just before the IFAP this year (2011)
    (c) Improved personal health-related fitness
    (d) Experience from previously completing the IFAP (2010)
    (e) Did not improve

14. If you did not improve in flexibility, what was this due to?
    (a) Did not consistently follow through with my established plan
    (b) Did not establish a realistic plan for improvement
    (c) Lack of motivation in completing my plan
    (d) Lack of time to complete my plan
    (e) Other: _____

15. Did you observe any improvement in your body composition measurements (skinfold measurements)?
    (a) Yes
    (b) No

16. What was this improvement due to?
    (a) Goals set as a result of last year's (2010) IFAP
    (b) Training initiated just before the IFAP this year (2011)
    (c) Improved personal health-related fitness
    (d) Experience from previously completing the IFAP (2010)
    (e) Did not improve

17. If you did not improve in body composition, what was this due to?
    (a) Did not consistently follow through with my established plan
    (b) Did not establish a realistic plan for improvement
    (c) Lack of motivation in completing my plan
    (d) Lack of time to complete my plan
    (e) Other: _____

18. Does the requirement of participating in the IFAP cause you to change your normal fitness routine prior to testing?
    (a) Yes
    (b) No

19. If the IFAP was required more than one time a year, would you be more consistent in following your plan or work harder to make improvements in your fitness?
    (a) Yes
    (b) No

20. Do you think the IFAP goal-setting method is an effective way to make improvements in personal health-related fitness?
    (a) Yes
    (b) No

21. Do you feel comfortable in establishing realistic goals for personal fitness improvement?
    (a) Yes
    (b) No

22. What would help you establish and follow through consistently with health-related fitness goals?
    (a) Grade on fitness level
    (b) Fitness scores affecting completion of degree
    (c) Individual consultation with faculty to discuss fitness goals progress
    (d) I already follow through consistently on my own to reach individual goals
    (e) Other: _____

# APPENDIX C: FIGURES AND TABLES

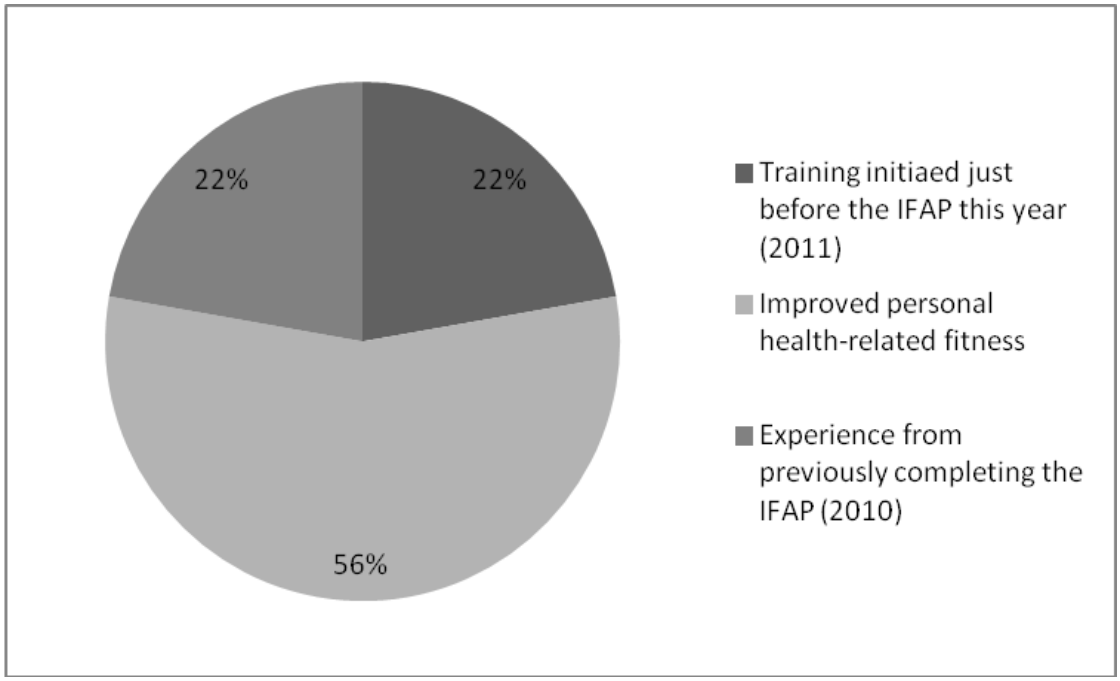


*Figure 3.1*: Improvement in Overall Health-Related Fitness (n=9). This figure shows the reasons for improvement as related to overall health-related fitness.

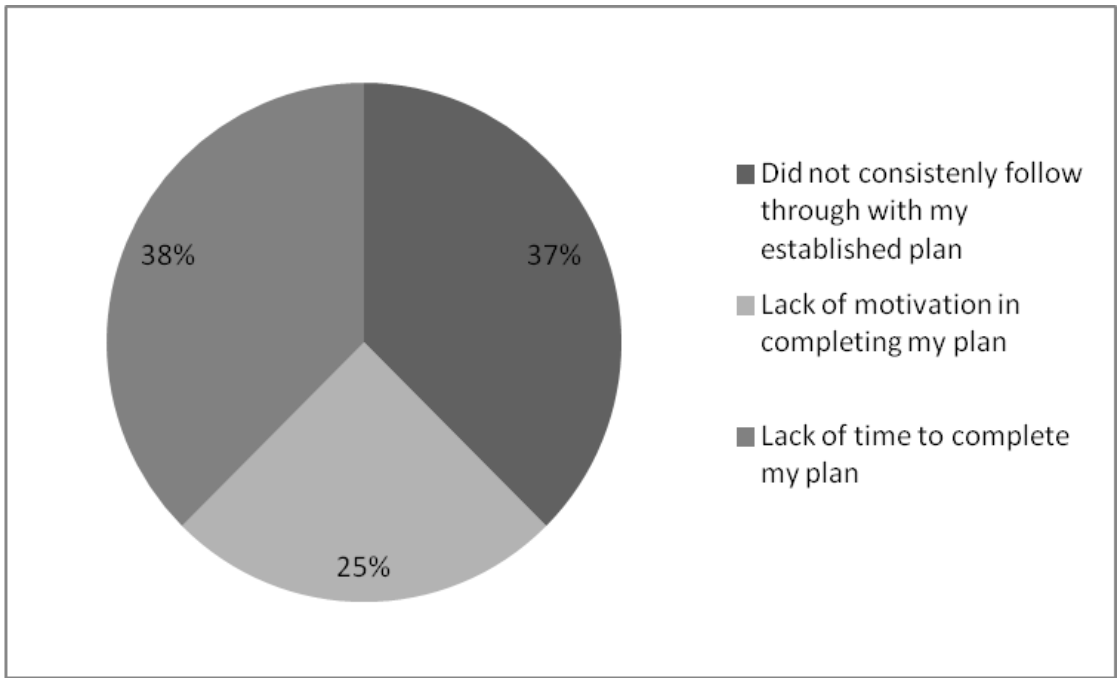


*Figure 3.2*: No Improvement in Overall Health-Related Fitness (n=8). This figure shows the distribution of reasoning for no improvement in overall health-related fitness.

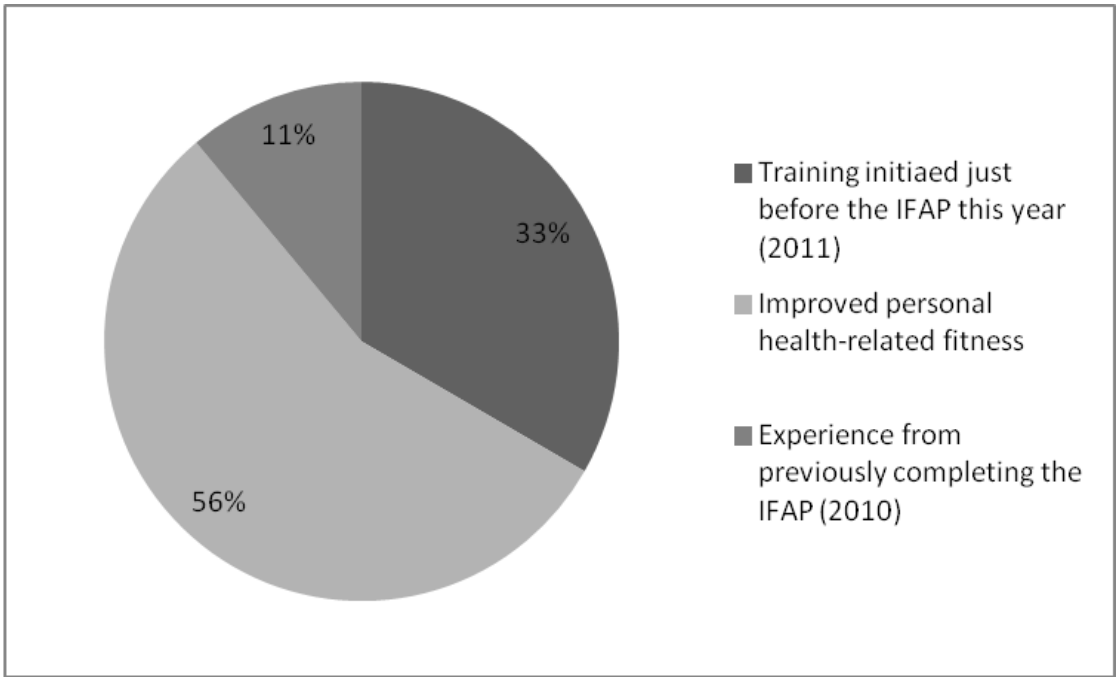


*Figure 3.3*: Improvement in Cardiovascular Endurance (n=9). This figure shows the reasons for improvement in relation to cardiovascular endurance.

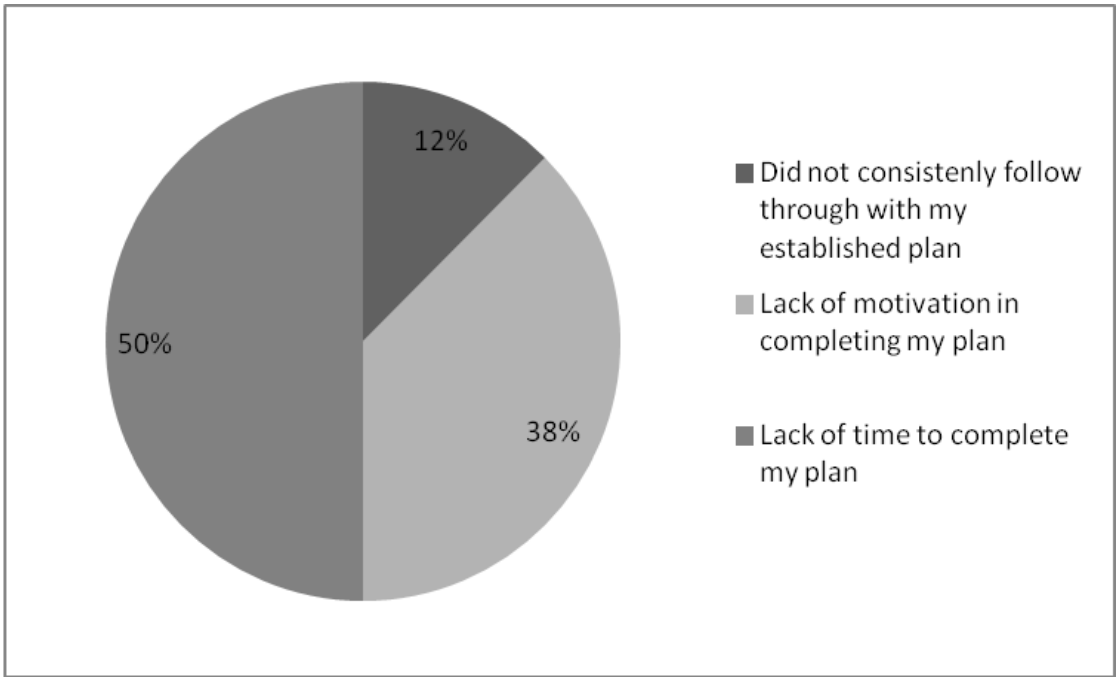


*Figure 3.4*: No Improvement in Cardiovascular Endurance (n=8). This figure illustrates the distribution of reasoning for no improvement in the cardiovascular endurance component.

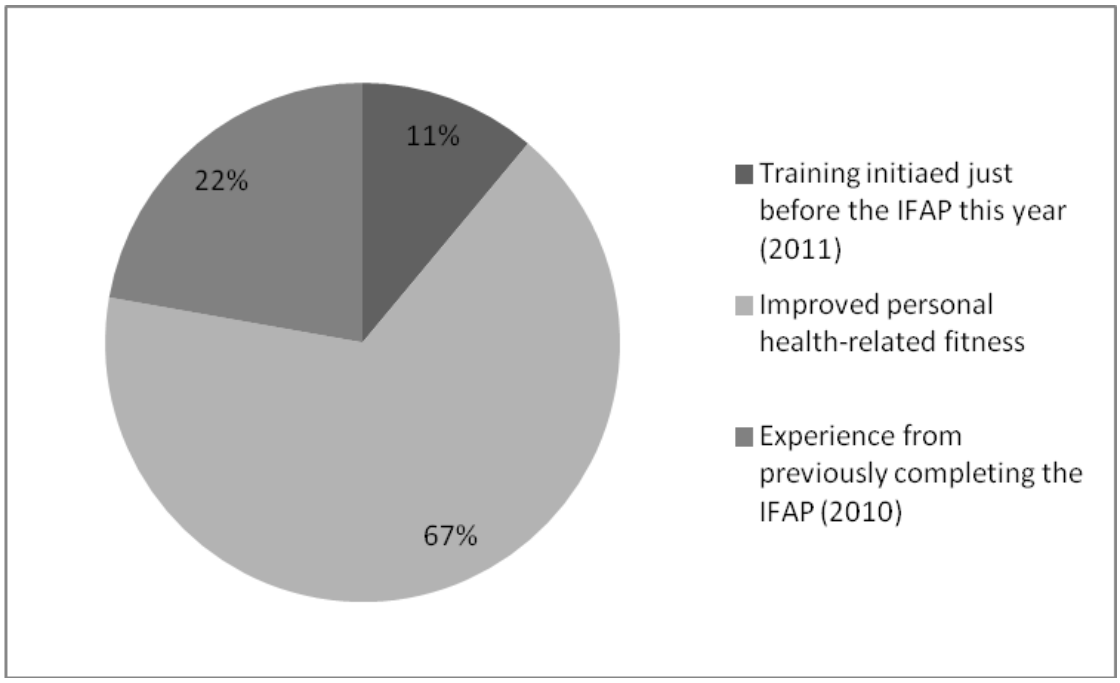


*Figure 3.5*: Improvement in Muscular Endurance (n=9). This figure shows the reasons for improvement in relation to muscular endurance.

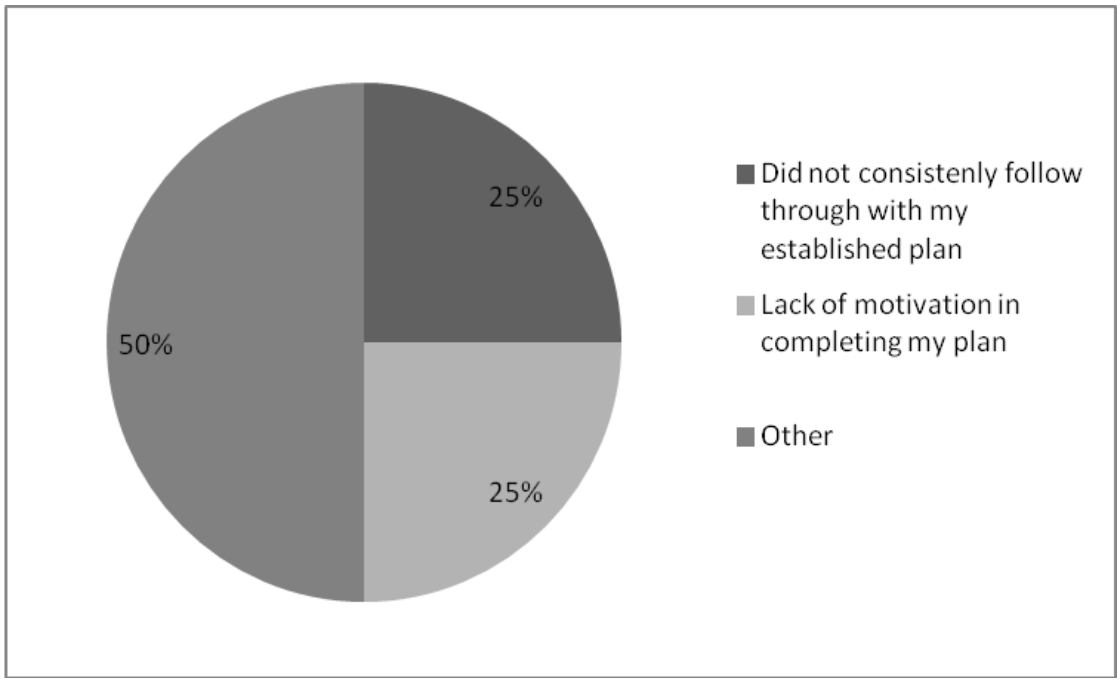


*Figure 3.6*: No Improvement in Muscular Endurance (n=8). This figure illustrates the distribution of responses for no improvement in the muscular endurance component.

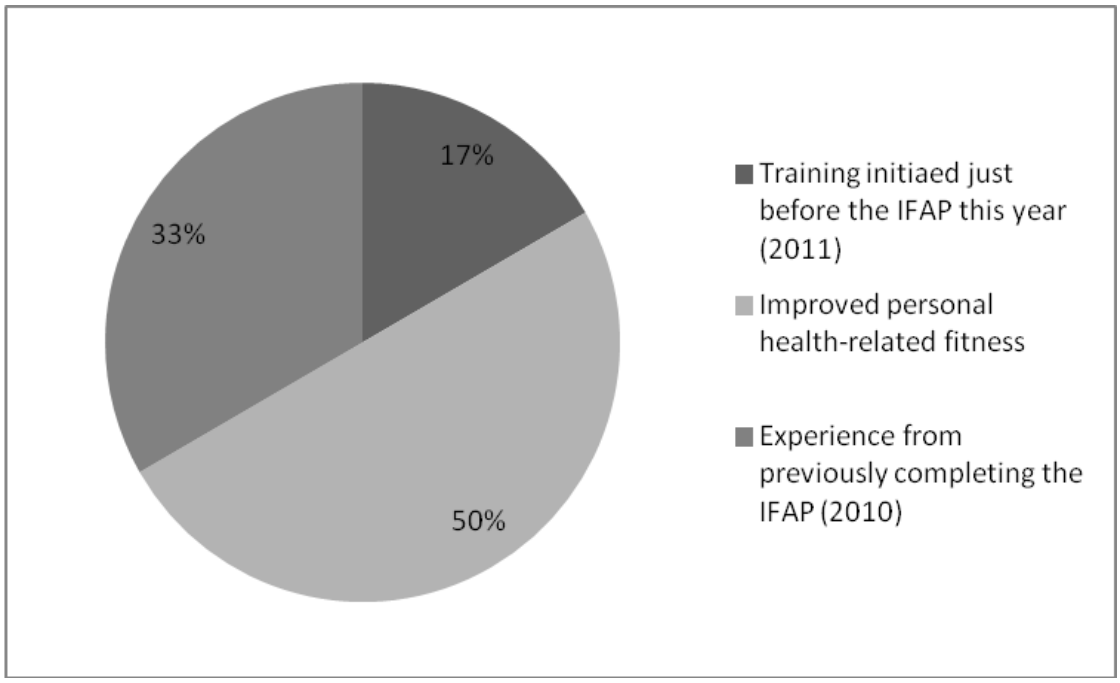


*Figure 3.7*: Improvement in Flexibility (n=6). This figure shows the responses provided for improvements in the flexibility component.

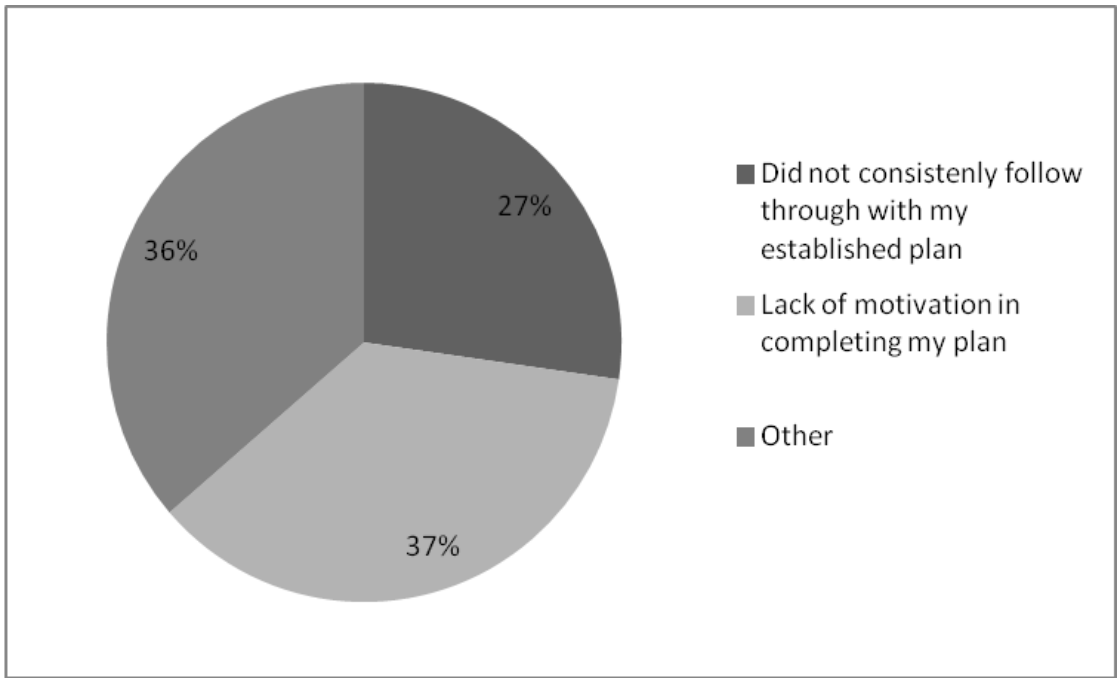


*Figure 3.8*: No Improvement in Flexibility (n=11). This figure illustrates the distribution of responses in relation to no improvement in the component of flexibility.

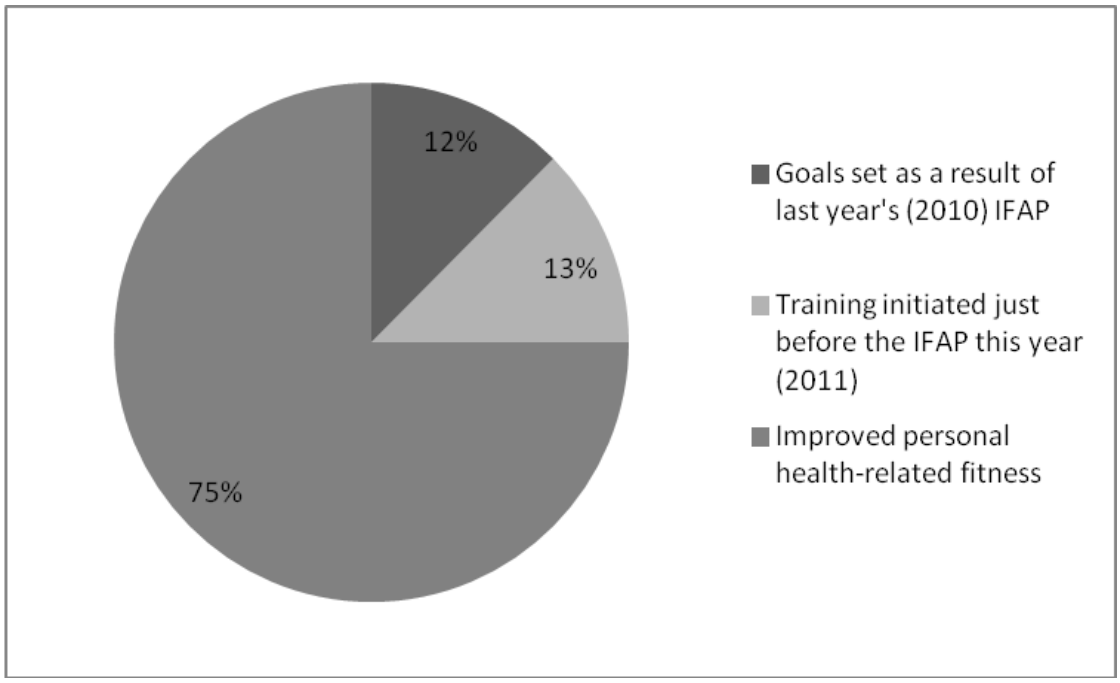


*Figure 3.9*: Improvement in Body Composition (n=8). This figure shows the responses in relation to the component of body composition.

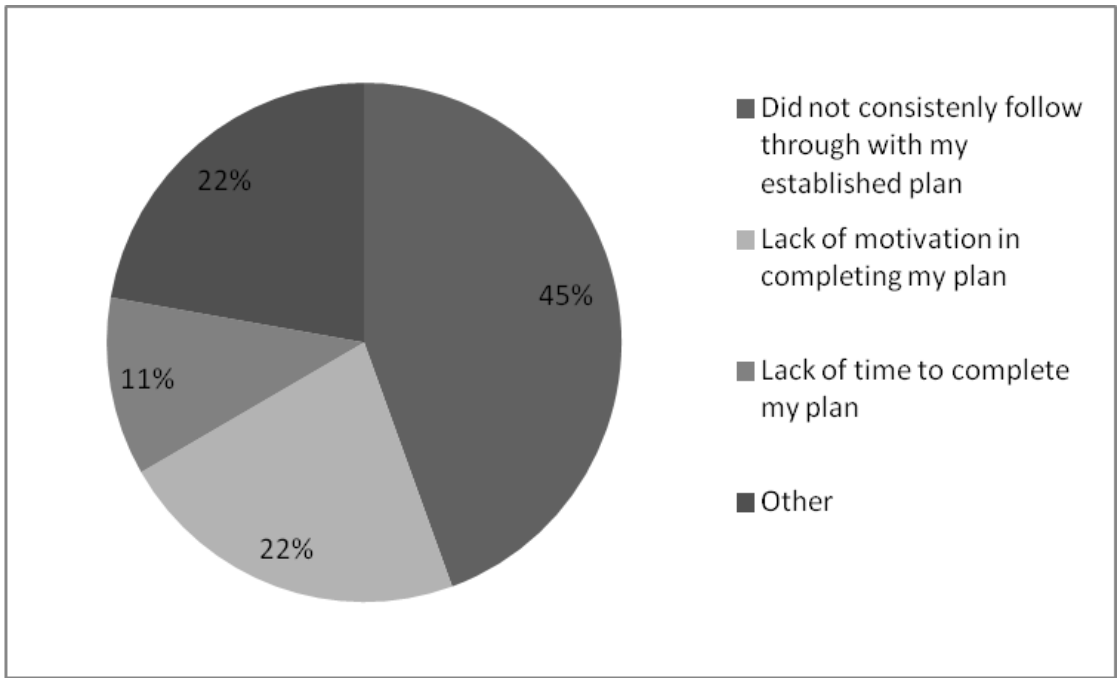


*Figure 3.10*: No Improvement in Body Composition (n=9). This figure illustrates the reasons for no improvement in the body composition component.

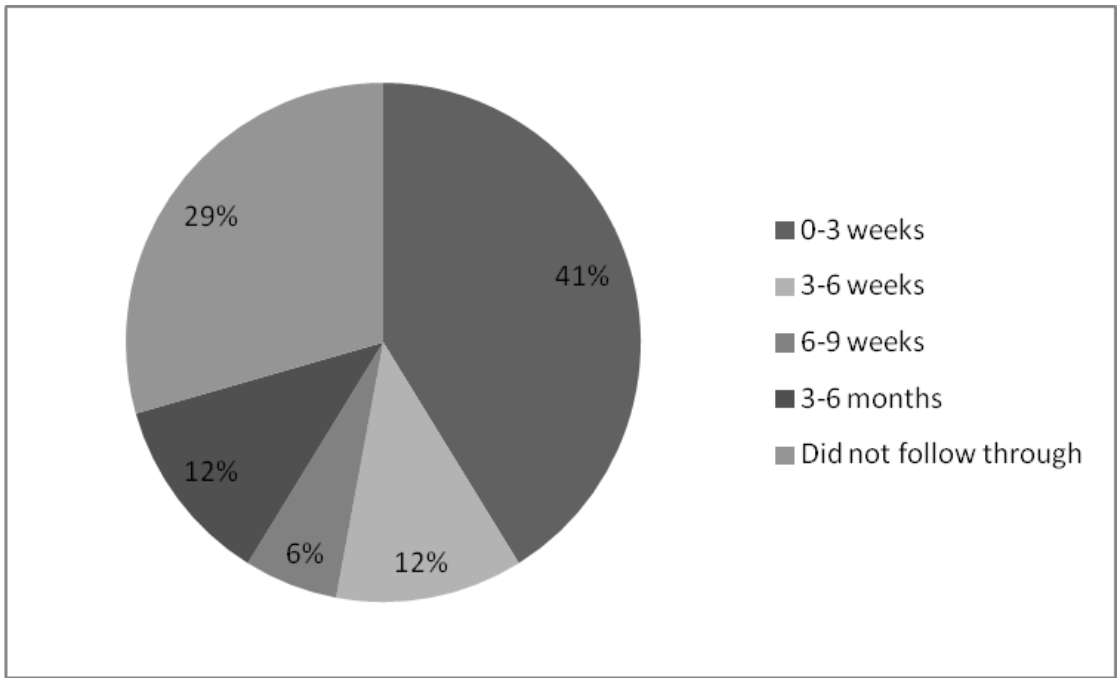


*Figure 3.11*: Follow-Through Time of Previously Established Plan (n=17). This figures shows the amount of time that participants consistenly followed through with the plan they established from the 2010 IFAP.

Table 1

Rate of Improvement for Components of Health-Related Fitness

| *Category* | *Improved* | *Not Improved* |
|---|---|---|
| Overall Fitness Score | 52.9% (n=9) | 47.1% (n=8) |
| Cardiovascular Endurance | 52.9% (n=9) | 47.1% (n=8) |
| Muscular Endurance | 52.9% (n=9) | 47.1% (n=8) |
| Flexibility | 35.3% (n=6) | 64.7% (n=11) |
| Body Composition | 47.1% (n=8) | 52.9% (n=9) |

**Table 2**

**Improvement in Components of Health-Related Fitness**

| *Response Option* | *Cardiovascular Endurance* | *Muscular Endurance* | *Flexibility* | *Body Composition* |
|---|---|---|---|---|
| Goals set as a result of last year's (2010) IFAP | 0% | 0% | 0% | 5.9% |
| Training initiated just before the IFAP this year (2011) | 17.6% | 5.9% | 5.9% | 5.9% |
| Improved personal health-related fitness | 29.4% | 35.3% | 17.6% | 35.3% |
| Experience from previously completing the IFAP (2010) | 5.9% | 11.8% | 11.8% | 0% |
| Did not improve | 47.1% | 47.1% | 64.7% | 52.9% |

**Table 3**

**No Improvement in Components of Health-Related Fitness**

| *Response Option* | *Cardiovascular Endurance* | *Muscular Endurance* | *Flexibility* | *Body Composition* |
|---|---|---|---|---|
| Did not consistently follow through with my established plan | 12.5% | 25.0% | 27.3% | 44.4% |
| Did not establish a realistic plan for improvement | 0% | 0% | 0% | 0% |
| Lack of motivation in completing my plan | 37.5% | 25.0% | 36.4% | 22.2% |
| Lack of time to complete my plan | 50.0% | 0% | 0% | 11.1% |
| Other | 0% | 50.0% | 36.4% | 22.2% |

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