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Experiences of Participants in an Introductory Weight Training Program

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EXPERIENCES OF PARTICIPANTS IN AN INTRODUCTORY WEIGHT TRAINING PROGRAM

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A Research Paper
Submitted in Partial Fulfillment of the Requirements for the
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TITLE: EXPERIENCES OF PARTICIPANTS IN AN INTRODUCTORY WEIGHT TRAINING PROGRAM

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The purpose of this investigation was to determine the effects of a 6-week structured introductory weight training program on individuals' efficacy using a mixed methods approach. Variables were assessed to examine psychological factors using a self-efficacy scale. Intrinsic Motivation Inventory (IMI) was used to access interest/enjoyment, perceived competence and value/usefulness of the intervention weight training program. In addition, post-intervention individual interviews were conducted to examine exercise history, intervention enjoyment, goals, motivation, adherence, and other various factors influencing exercise intervention involvement. Because the quantitative survey data was not able to be collected post-intervention, the focus of the discussion was on the qualitative results. Through qualitative research and data collection of in-depth interviews and surveys it was determined self-efficacy and motivation both increased following a 6-week exercise program and participants felt upon completing the 6-week weight training class they were confident enough to apply their knowledge outside of a class setting and continue their weight training on their own.

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CHAPTER ONE

INTRODUCTION

The burden of disease attributed to physical inactivity has an estimated cost of $24 billion in the U.S. and continues to rise as a majority of the population self-reports being insufficiently active (Duncan, Spence, & Mummery, 2005). Despite the ever-growing body of evidence that is associated with both physical and mental health benefits of regular physical activity, more than 80% of American adults do not meet the guidelines for both aerobic and muscle-strengthening activities (U.S. Department of Health and Human Services, 2020). For example, according to the World Health Organization (WHO), insufficient physical activity is one of the leading risk factors for death worldwide and insufficient physical activity is a key factor for non-communicable diseases such as cardiovascular, cancer, and diabetes (WHO, 2018). There are similar reports from the Centers of Disease Control (CDC) and thus, they recommends adults need two types of activity each week to improve their health; aerobic and muscular strengthening (CDC, 2020). Furthermore, during these unprecedented times surrounding the global pandemic of COVID-19 it is more important now than ever to engage in sufficient amounts of physical activity which is understood to help support the immune system and improve overall respiratory health. For example, acute exercise is now viewed as an important immune system adjuvant to stimulate the ongoing exchange of leukocytes between the circulation and tissues throughout the body (Adams as cited in Nieman et al., 2019).

While the physical implications of the lack of physical activity are significant they often receive more attention than the psychosocial concerns (e.g., decreased self-esteem, depression, body image related issues, motivation, and self-efficacy), which have a great impact on the emotional health of individuals. Considering the importance of physical exercise and health

improvement for overall well-being, it is essential to understand the motivating factors and barriers individuals face which keep them from attaining exercise recommendations. Furthermore, understanding said barriers and motivations can assist instructors and researchers alike can help determine ways to overcome barriers and encourage and motivate individuals to be more physically active and adopt healthy lifestyles.

Understanding Barriers

There are numerous barriers that hinder individuals from participating in physical activity. Previous research has divided such barriers for weight training, into four different categories (i.e., time-effort, physical, social, and specific), based on Myers and Roth's (1997) conceptualization of the benefits and barriers for exercise (as cited in Hurley et al., 2018). Perhaps not surprising time-effort is the most common barrier among individuals as we have all heard or given the excuse ourselves from time to time. The time –effort category includes barriers such as: being too busy, lacking discipline or desire, not enough time, and boredom of the mode of exercise.

The second category Myers and Roth (1997) cited was, *physical*, as pertaining to the physical aspect of weight training (e.g., how one might be perceived by others while engaging in the activity; not having the desire to sweat or not having an athletic physique, being uncoordinated, feeling uncomfortable or intimidated, and having a lack of knowledge), these are more often quoted barriers of women (as cited in Hurley et al., 2018).

Furthermore, Dworkin who noted that approximately 70% of patrons using cardiovascular machines in fitness centers tended to be female. Although ideology is evolving, there has been a stigma among many women that if they list weights they fear they will become, too big and bulky. In a study focusing on women who were considered non and moderate

weightlifters, Dworkin (2001) found it was common for women at fitness sites to express fears that they would engage in the "wrong" kind of resistance training and their bodies might develop "excessive" bodybuilders' musculature. She noted that the non-lifters sensed resistance training and bulk as masculine, while cardiovascular work was seen as feminine (Dworkin, 2001). Thus, such mismatches in perceptions pertaining to exercise modality present challenges toward fostering the benefits of resistance training throughout the lifespan (Dworkin, 2001). This is particularly discouraging knowing the impact weight training has on the aging process, particularly for women, as strength training helps prevent sarcopenia by increasing the strength, mass, power, and quality of skeletal muscle, and it may also help prevent age-related losses in bone mineral density (Hurley & Roth, 2000).

A third barrier, *social*, pertains to social factors such as, an individual's family is not supportive of their exercise engagement, their friends do not exercise, or perhaps they do not enjoy exercising alone (Myers and Roth, 1997). The social barrier can further be explained by El Ansari's study (2009) among adult women, he and his colleagues found among two groups; younger and older non-exercising women, the older women reported more family obligations, career commitments, and varying levels of support from spouse/partner which were labeled as barrier to their exercise adherence (El Ansari et al., 2013).

The final barrier labeled, *specific*, is related to a very specific reason an individual does not participate such as, a specific medical condition, family obligation, interference with school, lack of energy etc. In one study among traditional and nontraditional college students Kulavic (2013) found among the top three barriers for both traditional and nontraditional students lack of energy and willpower were among the highest (Kulavic et al., 2013).

Multiple studies have examined barrier to engagement in exercise so that practitioners

may gain a deeper understanding of these barriers and help individuals overcome them. It was reported in a study among adult men and women by Allender et al. (2006) that anxiety and lack of confidence about entering unfamiliar settings such as gyms were the main barriers to participation in physical activity. Furthermore, not knowing other people, poor body image and not fitting in with the 'gym' culture were the prime concerns of one participant group from their data collection (Allender et al., 2006, p. 829). These barriers often relate to individuals not feeling motivated to exercise or adopt new exercise routines, such as weight training.

Self-Determination Theory and Motivating Factors

Greater understanding of how barriers impact motivation is vital to practitioners and researchers to utilize motivational theory and help motivate clients. First, individuals may not be sufficiently interested in the exercise, or understand the value of its outcomes, thus not making time for it. Many individuals experience competing demands for their time from educational, career, and family obligations and therefore, may feel guilty and unmotivated to participate. Additionally if individuals do not feel competent at the specific weight training activities, feeling either not physically fit enough or skilled enough to exercise, that my also leave them feeling unmotivated (Teixeira et al., 2012).

Self-determination theory (SDT) is one of the most commonly-used theories surrounding motivation highlights the needs of personal goals and self-regulation. "Self-determination theory (SDT) is uniquely placed among theories of human motivation to examine the differential effects of qualitatively different types of motivation that can underlie behavior" (Teixeira et al., 2012, p. 2). SDT distinguishes two types of motivation, intrinsic and extrinsic motivation regulation of one's behavior. Intrinsic motivation is defined as doing an activity because of its inherent satisfactions. Furthermore, when intrinsically motivated the individuals experience feelings of

enjoyment, the exercise of their skills, personal accomplishment, and excitement. Conversely, extrinsic motivation is based on factors that are external to the individual (Teixeira et al., 2012). From the standpoint of SDT, physical activity can be an innately rewarding activity that contributes to both happiness and subjective vitality (Ryan & Frederick, 1997 as cited in Ryan et al., 2009). Ryan and Frederick further stated that individuals feel satisfy deep psychological needs that contribute to an overall sense of wellness. More specifically, a sense of competency, autonomy, and relatedness can be achieved as described by the SDT (Ryan & Frederick, 1997).

As explained by Ryan et al. (2009), in order for an individual to act upon engaging in an activity, such as, resistance training, the individual must experience some level of effectiveness and confidence to the skill in order to feel competent. When an individual attains a sense of competency their likelihood of becoming discouraged and disengaged in the activity decreases. The second primary psychological need, autonomy refers to the regulation of one's self for example, to feel in control in an internal state that the individual choices their actions to engage in an activity. The final psychological need identified by SDT states a sense of belongingness or relatedness is essential to wellbeing and to fully engage and be intrinsically motivated.

In 2006, Edmunds, Ntoumanis, and Duda explored how meeting the three psychological needs relates to the type of motivational regulations guided exercise behavior among an adult population engaging in either mild, moderate, or difficult exercise. They examined the extent to which psychological need satisfaction and motivational regulations could predict exercise behavior. The research sought to determine whether, as assumed in SDT (Deci & Ryan, 1985 as cited in Edmunds et al., 2006) if an autonomy-supportive experience provided by an exercise leader linked to greater intrinsic motivation and identified regulation via the support provided for the three basic psychological needs, competency, autonomy, and relatedness. Edmunds et al.

(2006) measured psychological need satisfaction using a 21-item scale adopted to be relevant for the exercise domain. The 21-item scale was based on a 15-item measure first developed by Kasser, Davey, and Ryan (1992) to tap reported autonomy, relatedness, and competence in the work domain, however to be adopted for exercise some items were taken from the Intrinsic Motivation Inventory (IMI; Ryan, 1982). Edmunds, Ntourmanis, and Duda found the following (2006):

> The 21-item scale utilized by Deci et al. (2001) included six items that measure competence (e.g., ‘‘Most days I feel a sense of accomplishment from exercising’’), eight items that measure relatedness (e.g., ‘‘People I exercise with take my feelings into consideration’’), and seven items that measure autonomy (e.g., ‘‘I feel like I am free to decide for myself how to exercise’’) need satisfaction. Following the stem ‘‘Please indicate how true each of the following statements is for you, given your experiences of exercise,’’ participants responded to each item on a 7-point scale ranging from 1 (not true for me) to 7 (very true for me) (Edmunds et al., 2006, p. 2245).

The results of the Edmonds et al. (2006) study indicated that autonomy was the highest satisfied need, followed by relatedness and competence. Furthermore, when comparing the types of motivation, intrinsic motivation was the most strongly endorsed exercise regulation, closely followed by identified regulation (i.e., motivation that is somewhat internal but based on conscious values). In order to fully understand some of the variability in self-reporting exercise behavior it is important to recognize the motivation-related variables. Overall, their findings indicated that the key constructs of SDT add to the prediction of exercise behaviors besides the demographic characteristics, such as age and gender. In agreement with SDT, psychological need satisfaction was derived from the exercise setting and were associated positively with more

self-determined motivational regulations. For example, satisfaction of the three psychological needs (introjected regulation, identified regulation, and intrinsic motivation) were all associated positively with strenuous and total exercise behaviors. Their regression analysis showed that, "as hypothesized, external regulation was a negative predictor of strenuous exercise behavior, introjected regulation positively predicted total exercise, and introjected and identified regulation were positive predictors of strenuous exercise behavior. Identified regulation also partially mediated the relationship between competence need satisfaction and strenuous exercise." (Edmunds et al., 2006, p. 2255). This was contrary to the authors' expectations; however, intrinsic motivation did not predict either dimension of exercise behavior significantly as other studies in exercise and sport has indicated otherwise. Additional examination of their study included, participants who engaged in regular organized exercise classes indicated that perceived autonomy support (PAS) provided by the exercise class leader was associated positively with psychological satisfaction and self-determined motivation.

Within the context of SDT and other motivation theories, there have been various studies examining the relationship between motivation and exercise. In a study from Biddle and Bailey (1985) examining motivation factors among adults ranging from 18 to 48 years and attitudes toward physical activity of male and female participants in fitness classes. Specifically, the study explored motivation for participation in fitness classes and questionnaires consisted of 12 questions, each referring to motive such as, release of tension, social experience, glamour and prestige, skill development, competition, development of physique/figure, etc. The study consisted of 41 adults, data examined by multivariate analysis showed men indicated more motivation for skill development while women expressed greater social orientation, combined with the feeling that exercise was valuable in releasing tension. Based on the results women felt

strong motives based on release of tension, social factors, and social experiences, whereas, men were more motivated by health, fitness level, and competition.

In a more recent study with college age students conducted by Kulavic et al., (2013) helps further examine motivation between traditional and nontraditional college students. This study found there were significant differences between the two groups in 8 out of 14 subscales of Exercise Motivations Inventory-2 (EMI-2) for physical activity motivation. Traditional students were more motivated by challenge, social recognition, affiliation, competition, appearance, and nimbleness, whereas nontraditional college students were more motivated by health pressure and ill health avoidance. Consistent with previous literature, Kulavicet's findings of college students' physical activity behaviors suggested that being healthy is not a main motivator for this population, but the researchers postulate that this may be due to the age and lack of concern of traditional college age student (Kulavicet al., 2013). Regardless of age or gender, in the domain of physical activity, particularly beginning weight training, support for all three basic needs helps to facilitate intrinsic motivation and will further internalize a sense of enjoyment and persistence of training (Ryan et al., 2009).

Self-Efficacy, Motivation, and Psychological States

An important psychological aspect of someone feeling motivated and persisting in an activity relies also on their self-efficacy. Self-efficacy refers to an individual's belief in their ability to perform a particular behavior (Bandura, 1986, as cited in Dionigi, 2007), and is a frequently studied exercise correlate. In 2005, a meta-analysis led by Netz et al., examined data from 36 studies linking physical activity to well-being in older adults. The analysis investigated whether changes in well-being in a treatment group and in a controlled group related to a variety of psychological well-being measured across studies. The effects were categorized into 11

measurement-types including the following; anger, anxiety, depression, energy, overall well-being, life satisfaction, self-efficacy, etc. The results indicated that physical activity had the strongest effects on anxiety and self-efficacy compared to the other measurements previously mentioned. Furthermore, improvements in cardiovascular health, strength, and functional ability were linked to significant levels of overall well-being improvement (Netz et al., 2005). That specific finding provided greater understanding for why a positive change in anxiety as a result of engaging in physical activity was also found in this meta-analysis. Their findings of the large effect of physical activity on self-efficacy and well-being, along with the moderating effect of improved fitness was a causal link between physical activity and well-being (specifically fitness related to daily functioning) (Netz et al., 2005) Therefore, having more positive self-efficacy feelings would decreases one's anxiety state. Overall these findings suggest a pronounced impact of physical activity on psychological well-being and life satisfaction.

Netz et al. (2005) meta-analysis also raised further questions, because previous research has shown conflicting results pertaining to the mode of exercise and impact on psychological well-being, meaning which mode of exercise has greater impact? Netz et al. (2005), found from their meta-analysis the moderating effect of mode of exercise was aerobic training, closely followed by resistance training, was most significant in affecting psychological well-being. Conversely, Arent et al. (2000) indicated that resistance exercise produced a significantly better effect on mood over aerobic training in older adults (Arent et al., 2000). However, there are fewer studies that have examined resistance training showing significant effects in reducing depressive symptoms thus leaving a need for future studies surrounding weight training.

Although there is conflicting data regarding which mode of exercise improves psychological factors most, what is consistent is the overall impact on self-efficacy and

connection to motivation among various modes of exercise. However in order to truly understand the connection between the two, it is important to understand which aspects of the exercise experience influence self-efficacy. Bandura (1986) identified four sources of self-efficacy: performance attainment, vicarious experience, verbal persuasion, and physiological state. Performance attainment is based on the experience of mastering the activity (Dionigi, 2007). For example if individuals experience success in their beginning weight training class their self-efficacy will increase; contrary, if they repeatedly feel unsuccessful during class and are unable to perform exercises, their repeated failure may lower their self-efficacy. The individual who experiences repeated success is likely to develop a strong sense of self-efficacy, in which case occasional failures are manageable and unlikely to have much effect on peoples' perception of their capabilities. Furthermore there are secondary affects, once established, increased self-efficacy typically translates to other aspects of life (Bandura, 1986 as cited in Dionigi, 2007).

Previous research has been clear in its findings that various modes of exercise have an effect on individuals' psychological states and how exercise experience may influences exercise performance. Despite the existing literature, little has been discussed regarding how psychological factors and motivation may change throughout interventions and how those factors might predict an individuals' future exercise adherence, particularly in strength training settings.

Purpose and Hypotheses

The purpose of this investigation was to determine the effects of a 6-week structured introductory weight training program on individuals' efficacy using a mixed methods approach. Variables were assessed to examine psychological factors using a self-efficacy scale. Intrinsic Motivation Inventory (IMI) was used to access interest/enjoyment, perceived competence and value/usefulness of the intervention weight training program. In addition, post intervention

individual interviews were conducted to examine exercise history, intervention enjoyment, goals, motivation, adherence, and other various factors influencing exercise intervention involvement.

CHAPTER TWO

METHOD

Participants

The sample for this study consisted of five participants (female = 4, male = 1) of a structured, introductory-level weight training program called the Saluki Resolution. All participants were older than 18 years old. The program was coordinated and managed by the student recreation center of a medium-sized, Midwestern university. Advertisements were placed around the student recreation center and on social media for the beginning weight training class (Saluki Resolutions); the class was free and open to both students and community members. The class was advertised as a beginner level weight training class to encourage individuals who were unfamiliar with weight training.

Approval for the study was obtained from Southern Illinois University's Institutional Human Subjects Committee prior to data collection. Approval was also received from the recreation center to collect data from the intervention class. Participants gave informed consent prior to conducting interviews and completing the surveys.

Intervention

The Saluki Resolution beginning weight training class met once a week on Tuesday evenings in the spring 2020 semester. The 6-week program consisted of a one-hour group exercise session per week. The class was a progression of weight training exercises starting with mostly body weight (e.g., pushups, planks, squats) and over the six weeks progressed to additional weight training using machines and free weights. The location and the physical space in which the class was held was closed to the public and only class participants were allowed in the physical space. The physical structure of the training room was very spacious with various

machines and free weights enabling the trainer to provide the participants with a wide range of exercises. The class was led by a certified group fitness instructor who led the group class in a circuit format of resistance training exercises. Each exercises lasted about one minute in total and then participants moved on to the next exercise in a circuit fashion. The instructor had an audio system and encouraging music in order to give instructions, cues, and feedback to the class in a timely manner.

Data Collection

The university's Human Subjects Committee approved this study prior to any data collection. Individuals' efficacy was assessed using a self-efficacy scale 0-100, 0 being cannot do at all and 100 being highly certain can do and was assessed within the first week of starting the program. The Intrinsic Motivation Inventory (IMI) was used to access interest/enjoyment, perceived competence and value/usefulness of the intervention weight training program. In addition post intervention individual interviews were conducted to elicit a more in-depth understanding of the participants' exercise history, intervention enjoyment, goals, motivation, adherence, and other various factors influencing exercise intervention involvement.

Measures

Intrinsic Motivation Inventory (IMI) The Intrinsic Motivation Inventory (IMI; see Appendix A) is a multidimensional measurement device intended to assess participants subjective experience related to a specific activity, in this case a 6-week beginning weight training intervention. The IMI has been used in several experiments related to intrinsic motivation and self-regulation (e.g., Deci, Eghrari, Patrick, & Leone, 1994; Plant & Ryan, 1985; Ryan, 1982; Ryan, Mims & Koestner, 1983; Ryan, Connell, & Plant, 1990; Ryan, Koestner & Deci, 1991). The instrument assesses participants' interest/enjoyment, perceived competence,

effort, value/usefulness, felt pressure and tension, and perceived choice while performing a given activity, thus yielding six subscale scores. The IMI Scale was used to assess levels of Interest/Enjoyment (7 items), Perceived Competence (9 items) and Value/Usefulness of Program (7 items). Participants assessed statements based on a 7-point Likert-type scale ranging from 1 (not at all true) to 7 (very true). Each subscale is calculated separately by finding the average score for the questions contained within that subscale. An example of an item from the IMI Scale-Interest/Enjoyment is, "I enjoyed doing this activity very much." An example of an item from the IMI perceived competence is, "After working at this activity for a while, I felt pretty competent." An example from the IMI Scale- value/usefulness of program is, "I think this is important to do because it can help me better understand weight training."

Self-Efficacy Scale The self-efficacy scale was used to examine perceived self-efficacy concerning an individual's belief in their capabilities to produce given attainments (Bandura, 1997). For this study, a self-efficacy scale was used to assess self-efficacy concerning their capabilities prior to beginning weight training intervention using the self-efficacy scale (see Appendix B). The self-efficacy scale is a 7-item inventory. Participants assessed statements based on a 100 point Likert-type scale ranging from 0 (cannot so at all) to 100 (Highly certain can do). Each subscale is calculated separately by finding the average score for the questions contained within that subscale. An example of an item from the IMI Scale-Interest/Enjoyment is, "I enjoyed doing this activity very much." An example of an item from the self-efficacy scale askes, "Rate your confidence in each of the following statements: That I can accomplish my physical activity and exercise goals that I set."

Interviews All interviews were conducted in a quiet room in the university's campus recreation center behind a divider wall to ensure confidentiality of the participants. Each

interview was conducted after the 6-week structured program. A semi-structured interview protocol was used. Interviews were recorded using a digital recorder app. The researcher transcribed all interviews verbatim. Interviews utilized semi-structured, open-ended questions to obtain information regarding participants' exercise history, intervention enjoyment, program goals, program motivation, competence, future adherence, and other various factors influencing exercise intervention involvement. A list of the probe questions can be found in Appendix C.

Procedures. All participants were solicited prior to the first night of the 6-week exercise program. About 10 individuals participated in the class over the course of the 6-weeks and five individuals agreed to participate in the research (female = 4, male = 1) between the ages of 18 and 40 years. The IMI and Self-efficacy questionnaires were completed after the first week of class and the interviews were conducted post the 6-week exercise program no more than a week after the program had ended. All five participants completed the post program interview.

CHAPTER THREE

RESULTS

A total of 5 participants completed both quantitative data collection (within the first week of the program) and also participated in qualitative post-program interviews.

Descriptive statistics.

Means and standard deviations of survey data were calculated for the IMI and the Self-Efficacy Scale. For the IMI, the range of possible scores ranged from 1-7, 1 being not at all true and 7 being very true. The means and standard deviations of the three subscales were as follows: Interest/Enjoyment subscale (M = 4.4; SD = .89); Perceived Competence subscale (M = 4.4; SD = .54); Value/Usefulness of Program subscale (M = 6.6; SD = .89). For the Self-Efficacy Scale, the possible rangers were 0-100, 0 being participant cannot do it at all and 100 participant highly certain they can do. The (M=71.33; SD = 3.032).

Due to the low number of participants and that the program structure of the class did not follow its original intent we were unable to complete a true pre- and post-comparison for the exercise intervention. Therefore, the results primarily focus on the qualitative data collected from the post program interview. Participants were interviewed and the interviews were recorded on a digital recording application on a smart phone device. The application was called voice recorder. These recordings were then transcribed verbatim and the content was inductively analyzed and three themes emerged: Self-confidence increased and participants explained how it related to various aspects of their life; Evolving motivations from the beginning to the end of program; Program outcomes for future exercise plans were often vague. These themes can be found in Table 1.

Qualitative Results - Post-Exercise Program Themes

Self-Confidence. According to Bandura (1997),

> "It should be noted that the construction of self-efficacy differs from the term confidence. Confidence is a nondescript term that refers to strength of belief but does not necessarily specify what the certainty is about. Perceived self-efficacy refers to belief in one's agentive capabilities that one can produce given level of attainment. (Bandura, 1997, p. 382)."

Although self-confidence and self-efficacy are separate constructs, they are related regarding one's self-belief. When asked, how would you describe how you feel about your self-confidence after participating in the program? One participant explained, "I feel more confident in specific exercises and overall in what I can do. I am not afraid to venture into the weight room as much and plan to do it more." Another expressed feeling, "I can push myself more and be more intense than I thought I could before." Each individual expressed some form of increased confidence in their abilities rather it was related directly to working out or indirectly to other areas of their life. A third participant describes how her new found confidence translated to other areas of her life, "I have had a spike in my confidence, and I feel like I am empowered and it has translated into my work environment and accomplishing my goals there and more confident in my abilities."

Evolving Motivation. All five participants reported having previously engaged in some form of weight training exercises at some point before signing up for this class, three individuals reported feeling they were successful on their own and others reported feeling unsuccessful and that they would fall back into familiar exercises of cardio training or yoga. The primary motivations influencing why the participants joined the Saluki Resolutions program were mostly

extrinsic in nature, however, one participant mentioned a shift in motivation to be more intrinsic. Participants' extrinsic motivations varied from integrated (i.e., self-identity, congruence with other values), identified (i.e., personal valuing a behavior or importance), and introjected (i.e., to avoid guilt or to boost the ego). Only one participant mentioned being motivated by introjected external motives explaining her boosted ego from noticing physical changes in her body. As described below you will find examples of integrated and identified external motivation from participants whom either valued, felted a sense of importance, or self-identified with the learning process which motivated them to join. Three participants expressed their desire to learn more exercises, feel more confident, and gain strength. One participant demonstrated identified extrinsic motivation when asked what motivated her to initially join the class, she replied, "I joined to learn more exercises. I usually would come to the gym with my boyfriend and just do cardio while he lifted weights but I wanted to learn more exercises to do so that I wouldn't be bored, but I continued to come back because each class I was able to do more and more, lift more weights and I started seeing small changes in my body." This particular individual shows the connection between her motivation and her sense of wanting to obtain competence from the program. As she explains being about to, "life more and more weight" we notice the desire to be more competent per the SDT. Another participant exemplifies introjected external motivation shifting to intrinsic motivation, citing her motivation started as, "I wanted to see visual results and gain muscular strength but over time I started to enjoy the exercises themselves and looked forward to class which motivated me more." These two responses were common themes for everyone that they each initially had a motivation for joining the program but overtime their initial motivation evolved and other factors began to motivate them as well.

Program Outcomes and Adherence. Participants expressed having a sense of accomplishment after each session and that they felt challenged and enjoyed the experience, this was attributed to the style in which the class was taught and the encouraging instructor. Multiple participants stated they feel more comfortable in doing weight training exercises after completing each session. One participant expressed, "After each class my goal was to feel like I had really done something and put in work and I felt that each time because the way the class was structured we were allowed to push ourselves and encouraged." All but one participant expressed feeling comfortable enough to do some weight training on their own and they each planned to continue some form or weight training to apply the knowledge they gained form the program.

Although participants didn't state formal or structured plans to maintain the exercise behavior in another class setting, their expression indicated that participants feel motivated to continue and adhere to these exercises in one way or another. One participant stated, "I plan to continue to build strength, work on my core and seek out a trainer and do some more research on my own." The knowledge participants gained during the program while learning new exercises and that seeing one another in class was cited by multiple participants as what made the experience positive for them. It is possible that this will help encourage adherence since individuals expressed having a positive experience overall and enjoying the program. Adherence may also be influenced by the identified motivation that many expressed their desire and importance placed on learning new exercises. For example, participants placed an importance on learning new exercises and all but one stated they felt comfortable after the program to exercise on their own. Furthermore, stating they have expressed competence and feeling more comfortable which might be interpreted to help adherence.

Table 1

Post-program themes

Themes	Sub-themes	Examples
Self-Confidence	Positive	Increased self-confidence in their belief of one's self and their abilities. Expressions were made regarding confidence in their abilities while working out and also indirect increase confidence in other aspects of life, such as, work
	Group leader	Social support & personal exercise knowledge
Evolving Motivation	Resulting Motivators	Gained knowledge, sense of accomplishment, encouragement, physical changes, other participants
Program Outcomes	Future exercise plans	Intentions to continue applied knowledge but vague plans
	Changes	Increased self-confidence, increase motivation, increased sense of accomplishment, increased energy, increase awareness of exercises
	Positives	Variety made the program enjoyable, enjoyed the circuit structure of the program, enjoyed the social influence of the group class, felt more comfortable

		with weight training exercises, increased knowledge, enjoyed the instructors encouragement
	Negatives	Vague response to future exercise plans & no concrete plans

CHAPTER FOUR

DISCUSSION

The purpose of this investigation was to determine the effects of a 6-week structured introductory weight training program on individuals' efficacy using a mixed methods approach. Variables were assessed to examine psychological factors using a self-efficacy scale. Intrinsic Motivation Inventory (IMI) was used to access interest/enjoyment, perceived competence and value/usefulness of the intervention weight training program. In addition post intervention individual interviews were conducted to examine exercise history, intervention enjoyment, goals, motivation, adherence, and other various factors influencing exercise intervention involvement. Because the quantitative survey data was not able to be collected post-intervention, the focus of the discussion is on the qualitative results.

Psychosocial Outcomes

Based on the interview responses we were able to draw conclusions that there were positive psychosocial outcomes that resulted from the Saluki Resolutions program, including increased self-confidence and changes to motivation. Participants reported increases in confidence to go to certain weight rooms within the Rec Center and others indicated that the confidence related to work tasks and they were able to be more confident at work due to their participation in the program because they felt more accomplished. These findings were consistent with the significant findings of Podlog and Dionigi (2009), participants in both investigations reported increase sense of accomplishment. A previous study conducted with both male and female older adults found that two different strength training groups reported significant improvements in their physical self-presentation confidence, compared to the non-exercising group, upon completing just one month of programming (Tsutsumi et al., 1997).

Although we were not able to complete post-intervention assessments, the surveys from each participant that were conducted upon completion of the first week of the Saluki Resolutions class stated that they felt they were moderately or highly confident they could be physically active and exercise without a trainer or group leader.

Motivation

Increased intrinsic motivation was supported by the responses made in post program interviews with multiple participants expressing their increased competence and enjoyment of each class. For example, one participant stated, “I am more confident and comfortable in the weight room since I have been doing this class and I now enjoy the process itself more than before.” Her statement of enjoying the process exemplifies her intrinsic motivation. These findings are consistent with previous research, including Bulley et al. (2009) who also observed higher levels of intrinsic motivation among 16 college aged women who reported experiencing improved competence. The example above exhibits the influence the program had on altering motivation for someone from extrinsic to intrinsic, perhaps due to the learning experience of the program and the knowledge gained through participation and the program delivery. Upon completion of the first week of Saluki Resolutions program, participants reported feeling they were moderately or highly certain that they could accomplish physical activity and exercise goals that they set.

Although some participants described feeling high levels of support, competence and intrinsic motivation upon completion of the program, there were still findings within the interviews that indicated external factors of motivation as well. Furthermore, a few participants mentioned how noticing small changes of their body motivated them and feeling stronger from week to week. This participant stated, “When I looked in the mirror I could see changes in my

body, it was slimmer and looked tighter. My body had started to adapt allowing me to do more each time." This demonstrates some changes of their motivation as time progressed considering many participants mentioned their initial interest in the program was due to the description of the class which caught their attention because they wanted to learn and become familiar with more weight training exercises.

To further state how motivation evolved based on participant interviews, their motivation seemed to be a mixed bag, at times coming from both intrinsic and extrinsic factors. It is important to make this connection with participant motivation because physical fitness is a process, rather than a destination. With all processes there are often co-existing forms of motivation which can all impact the concept of one's exercise self-determination. As explained by Ryan et al. (2009), in order for an individual to act upon engaging in an activity, such as resistance training, the individual must experience some level of effectiveness and confidence to the skill in order to feel competent. When an individual attains a sense of competency their likelihood of becoming discouraged and disengaged in the activity decreases. This particularly helps an individual with their adherence to an exercise program.

CHAPTER FIVE

LIMITATIONS AND SUMMARY

The findings of this study should be interpreted within the context of certain limitations. Given the small sample size the results should be interpreted as exploratory and further examination on larger sample sizes should be conducted before any generalizations are made to the larger population. Furthermore, the program structure of the class did not follow its original intent, as we were unable to complete a true pre- and post-test comparison for the exercise intervention and as a result we could not support our hypothesis that participants would display greater self-efficacy and motivation following the beginning weight training exercise intervention as well as express continuation of the exercise regimen. Lastly, although the Saluki Resolutions program was intended for individuals without experience in weight training exercises, so of the individuals who participated had taken part in weight training before, and this may have impacted our results.

Future studies should attempt to recruit more participants of a more balanced sample of males and females and conduct a true before and after of an intervention beginning weight training program. Participants of this study mentioned being enticed by the description of the Saluki Resolutions program and its focus on learning new skills of weight training while focusing on the healthier resolutions, therefore, this may have influenced the participants' initial motivation for joining the program causing it to be focused on aspect of learning. A future study might take a more neutral program description to not influence motivation for participation. The results of this study indicated moderate to high levels of self-confidence, increased competence, sense of accomplishment, and internal and external motivation post program intervention. For future studies an emphasis should be placed on true pre and post self-efficacy outcomes, clearly

stated motivational factors to determine changes pre and post intervention, and clear factors to predict adherence or a follow-up interview post intervention.

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APPENDICES

APPENDIX A

Rapport questions:

1. Are you enjoying your semester so far?
2. Did you have a good spring break? Did you do anything fun?
3. What is your major?
4. What year are you in school?
5. What is your favorite part of school?
6. What do you want to do once you graduate?

Probe questions:

1. Were you physically active as a child?
    a. If so, what activities (sport or other kinds) did you participate in as a child?

2. What types of exercise do your family members (significant others, parents, etc.) engage in?

3. What do you believe are the outcomes of weight training exercises?

4. What do you believe are outcomes of not participating in weight training exercises?

5. What is your experience with exercise prior to joining the beginner weight training program?
    a. Would you describe your overall experience with exercise in the past as mostly positive or negative?
    b. What made these positive (or negative) experiences?
    c. Did these experiences change anything about how you exercised? (Lead you to exercise or not exercise?)

6. Have you tried to do weight training before joining this program?
    a. How did you go about your training (exercise, etc.)?
    b. Where you successful? Why or why not?

7. How would you describe how you feel about weight training?
    a. Have those feelings ever impacted your participation in physical activity/exercise?
    b. In what way(s)?

8. How important is completing the beginning weight training program to you?

9. What are your goals for this yourself during this program?
    a. What do you hope to achieve from participating in the program?
    b. What do you think it will take to achieve your goals?

10. What motivated you to join this exercise program?
    a. Do you find weight training exercising enjoyable? If so, what do you enjoy about it?

11. How would you describe your experience with the beginner weight training program?
    a. Would you describe your overall experience with the program as mostly positive or negative?
    b. What made these positive (or negative) experiences?

12. Would you describe your experiences with beginner weight training program as successful or unsuccessful?
    a. Did you achieve your goals?
    b. What do you think is the reason(s) you were able/unable to achieve your goals?

13. How would you describe how you feel about your self-confidence after participating in the program?
    a. Have these feelings changed throughout the course of the beginner weight training program?
    b. If yes, what has changed?
    c. If no, why do you think they have stayed the same?

14. Do you plan on continuing to exercise regularly now that the program is over?
    a. If yes, do you think you would have similar intentions if not for the beginner weight training program?
    b. If no, why not?
    c. How do you feel about engaging in exercise on your own; outside of the beginner weight training program?
    d. Do you feel knowledgeable enough about weight training since completing the program?
        i. If yes, what knowledge have you gained?

15. Did your motivations for participating in the beginner weight training program change during the program?
    a. If yes, how did they change?

16. What was your favorite aspect of the beginning weight training program?

APPENDIX B

Intrinsic Motivation Inventory Scale

(Below are listed all 45 items that can be used depending on which are needed.) For each of the following statements, please indicate how true it is for you, using the following scale:

1 2 3 4 5 6 7

not at all true somewhat true very true

Interest/Enjoyment

I enjoyed doing this activity very much

This activity was fun to do.

I thought this was a boring activity. (R)

This activity did not hold my attention at all. (R)

I would describe this activity as very interesting.

I thought this activity was quite enjoyable.

While I was doing this activity, I was thinking about how much I enjoyed it.

Perceived Competence

I think I am pretty good at this activity.

I think I did pretty well at this activity, compared to other students.

After working at this activity for a while, I felt pretty competent.

I am satisfied with my performance at this task. I was pretty skilled at this activity.

This was an activity that I could not do very well. (R)

Effort/Importance I put a lot of effort into this.

I did not try very hard to do well at this activity. (R)

I tried very hard on this activity. It was important to me to do well at this task.

I did not put much energy into this. (R)

Value/Usefulness of Program

I believe this activity could be of some value to me.

I think that doing this activity is useful for future weight training plans.

I think this is important to do because it can help me better understand weight training.

I would be willing to do this again because it has some value to my knowledge of weight training.

I think doing this activity could help me to overall health.

I believe doing this activity could be beneficial to me.

I think this is an important activity.

APPENDIX C

Self-Efficacy Scale

Please rate your degree of confidence by circling a number from 0 to 100 for each of the following questions using the scale given below.

0	10	20	30	40	50	60	70	80	90	100
Cannot do at all				**Moderately can do**						**Highly certain can do**

Rate your confidence in each of the following statements:

That I can accomplish my physical activity and exercise goals that I set?

0 10 20 30 40 50 60 70 80 90 100

That when I am confronted with a barrier to physical activity or exercise I can find several solutions to overcome this barrier

0 10 20 30 40 50 60 70 80 90 100

That I can be physically active or exercise even when I am tired

0 10 20 30 40 50 60 70 80 90 100

That I can be physically active or exercise without the help of a therapist or trainer

0 10 20 30 40 50 60 70 80 90 100

That I can motivate myself to start being physically active or exercise again after I've stopped for a while

0 10 20 30 40 50 60 70 80 90 100

That I can be physically active or exercise even if I had no access to a gym, exercise, training, or rehabilitation facility.

0 10 20 30 40 50 60 70 80 90 100

Comments on any types of exercise/equipment you would like to be trained on

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