

Physical Fitness and Intellectual Disabilities

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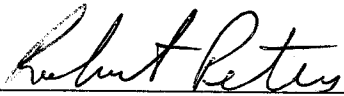
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A Research Paper

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ABSTRACT

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The purpose of this study is to promote and facilitate the improvement in the physical fitness levels of individuals with intellectual disabilities.

The review of literature presents that people with intellectual disabilities have fitness levels that significantly lag behind people without intellectual disabilities of the same age. These low fitness levels contribute to this populations increased risk of obesity, heart disease, diabetes, high blood pressure, osteoporosis, depression and cancer. According to Coleman, Ayoub and Friedrich (1976), these fitness and physical activity levels directly influence vocational pursuits, independent living, leisure activities, and health and aging. We

thus then can conclude that the more physically active and fit an individual is, the better his/her quality of life.

The goal of this project is to develop an exercise video to be used by persons who have disabilities using fitness principles recommended by the American Council on Exercise. The result will be a video sponsored and developed with Special Olympians. This video will be disseminated to athletes to be used at home and/or school, between competitions.

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## Chapter One Introduction

A healthy lifestyle for many of us includes the right amount of physical exercise. Physical exercise has been proven to provide many beneficial aspects including optimum physical and mental health. Physical activity helps decrease the possibility of obesity, heart disease, diabetes, high blood pressure, osteoporosis, depression, and cancer (Shepard, 1995). Thus inversely, physical inactivity is a major risk factor linked to these same diseases (Shepard, 1995).

All of these diseases affect our physical and mental health and are disseminated throughout every aspect of our lives and those closest to us. As Vocational Rehabilitation Professionals, we use a holistic approach encompassing all aspects of our client's lives in order to provide the appropriate services to help facilitate the optimum levels of independence. Thus our clients' lifestyles, and physical and mental health status, affect how and what services we can provide.

In the field of Vocational Rehabilitation, we will work with clients who have many different types of abilities and needs. One group of clients that we will serve are those clients who have intellectual disabilities. According to the

American Association on Mental Retardation 1992 definition, mental retardation refers to substantial limitations in present functioning. This functioning is characterized by sub-average intellectual, existing concurrently with related limitations in two or more of the following applicable adaptive skills areas: communication, self-care, home living, health, safety, functional academics, leisure and work (Luckasson, Coulter, Polloway, Deiss, Schalock, Snell, Spetainik, & Stark, 1992). In congruence with our holistic approach, as Vocational Rehabilitation Professionals, we must be aware of all of these possible deficit areas that may affect successful vocational pursuits.

As stated above, areas that are included as possible deficits in skills include health and leisure. First, we must look at physical health issues related to this population. According to Rimmer, Braddock and Fujiura, (1993), obesity is a major health risk associated with individuals who have intellectual disabilities. As stated above, physical inactivity is a major contributor to this health risk in addition to heart disease, diabetes, high blood pressure, osteoporosis, depression and cancer. In fact, Rimmer, and Kelly, (1991), also stated that, fitness levels in adults with intellectual disabilities significantly lags behind people without disabilities of the same age. Let's remember that fitness is specifically listed as

a component of health and safety in the formal definition of mental retardation (Luckasson et al., 1992). Due to the fact that we believe in the holistic and an all encompassing approach in servicing our clients, we must acknowledge the relationship between activity, health, and lifestyle pursuits. In fact, fitness and physical activity for individuals with intellectual disabilities directly influences vocational pursuits, independent living, leisure activity, and health and aging (Coleman, Ayoub & Friedrich, 1976.)

According to the various research stated above, people who have intellectual disabilities have lower fitness levels and less physical activity than people without this disability. This puts them at risk for various major health and aging risks. Their physical inactivity and fitness levels also influence all areas of their lives, including vocational pursuits, daily and independent living skills, and leisure pursuits or abilities. The level of physical activity must be important to us as Rehabilitation Counselors due to its vast, encompassing, and holistic affect on all of our clients who have intellectual disabilities.

### ***Problem Statement***

People with intellectual disabilities have fitness levels that significantly lag behind people without intellectual



disabilities of the same age. These low fitness levels contribute to this populations increased risk of obesity, heart disease, diabetes, high blood pressure, osteoporosis, depression and cancer.

### **Objectives**

We thus can conclude that the more physically active and fit an individual is, the better his/her quality of life. Therefore the primary objective is to develop an exercise video for use with individuals with intellectual disabilities.

### **TABLE OF TERMS**

1. **Cancer** - An abnormal tissue that grows by cellular proliferation more rapidly than normal, and continues to grow after the stimuli that initiated the new growth cease. Also called tumor or neoplasm. The growth may be benign or malignant, i.e., capable of invading surrounding tissues and producing metastases (the spread of cancer cells from one part of the body to another) (American Council on Exercise, 1999.)
2. **Cardiovascular/Heart Disease** - Diseases relating to the heart and blood vessels. There are a variety of cardiovascular diseases, including hypertension, stroke and congestive heart failure (American Heart Association, 2001.)

**3. Depression** - Characterized by a period (at least two weeks) of depressed mood or loss of interesting most activities that the person formerly enjoyed. All areas of a person's life are affected, including their performance at work and interaction in social settings and with family. Depression involves changes in neurotransmitter levels, and hence, affects many systems of the body (American Psychiatric Association, 1994.)

**4. Diabetes** - a disease in which the body does not produce or properly use insulin, a hormone that is needed to convert sugar, starches and other food into energy needed for daily life. The cause of diabetes is a mystery, although both genetics and environmental factors such as obesity and lack of exercise appear to play roles. There are two major types of diabetes, Type 1 and Type 2 (American Diabetes Association, 2001.)

**5. High Blood Pressure** - Mean arterial blood pressure the primary driving force propelling blood to the tissues. Hypertension is the chronically elevated blood pressure greater than 140/90mmHg measured on two or more separate occasions (American Heart Association, 2001.)

- 6. Obesity** - The excess storage of body fat, clinically defined as a BMI of 29.9 kg/m<sup>2</sup> (American Council on Exercise, 1999.)
- 7. Osteoporosis** - Bone density that is below average, classified as 1.5 to 2.5 standard deviations below peak bone density. It literally means porous bones (American Council on Exercise, 1999.)

Chapter II  
Literature Review

Physical exercise has been proven to provide many beneficial aspects to one's quality of life, improving physical and mental health. Physical activity decreases the possibility of obesity, heart disease, diabetes, high blood pressure, osteoporosis, depression and cancer (Shepard, 1995). According to the Association on Mental Retardation, the 1992 definition states mental retardation refers to;

" substantial limitations in present functioning that is characterized by sub-average intellectual function, existing concurrently with related limitations in two or more of the following applicable adaptive skill areas: communication, self-care, daily/home living, health, safety, functional academics, leisure and work/vocation," (Luckasson et al., 1992.)

One adaptive limitation area that is specifically related to issues stated in the formal definition of Mental Retardation is health, and safety. In this category of limitations, the issue of fitness as it related to the body's health, and the condition of one's body, including the above diseases are incorporated, (Luckaseen et al., 1992). Due to this fact and our holistic approach as Rehabilitation Counselors, it is necessary

that we understand what increased risk factors our clients have, and how it relates to their overall quality of life.

### ***Diseases That Lead to Functional Limitations***

Obesity is defined as the excess storage of body fat, clinically defined as a BMI of 29.9 kg/m<sup>2</sup>. Obesity is associated with several health risks such as high blood pressure, or hypertension, hyperlipidemia, coronary artery disease, non-insulin-dependent diabetes mellitus, gallbladder disease, and cholecystectomy (American Council on Exercise, 1999; Colditz, 1992). Obesity also can have an adverse effect on quality of life by limiting mobility, impairing physical capacity and reducing an individual's capacity to perform activities of daily living. These findings have prompted the American Heart Association to add obesity to its list of risk factors for the development of coronary artery disease (Eckel & Krauss, 1998). According to Rimmer, Braddock, and Fujiura (1993), obesity is a major health risk associated with individuals who have intellectual disabilities. Unfortunately these individuals will face additional discrimination, not only because they have a disability, but also due to the fact that they are obese. According to the American Council on Exercise (1999), obese individuals are more likely to face social, academic, and career discrimination.

There are a variety of cardiovascular diseases, including hypertension, stroke, and congestive heart failure. The majority of cardiovascular deaths are attributed to coronary artery disease. Coronary Artery Disease results from the process known as atherosclerosis. This occurs when the internal diameter of arteries begins to narrow and becomes damaged. The arteries are damaged by a build up of plaques consisting of calcified cholesterol and fat deposits. This makes it difficult for blood to flow through the body and causes a decrease in the amount of oxygen that gets to the heart. This in turn causes myocardial ischemia, which is reduced oxygen delivery. This in turn leads to chest pain and/or a heart attack (American Council on Exercise, 1999).

According to the United States Preventive Services Task Force (1996), cardiovascular disease is a condition that's prevalence is increased in individuals with intellectual disabilities. Cardiovascular disease continues to be the leading cause of death in the western world. According to 2002 estimates, 62 million Americans have one or more forms of cardiovascular disease. Currently, one out of every five Americans dies as a result of cardiovascular disease (American Heart Association, 2001). This disease is a major killer, but fortunately it is a disease that is highly preventable.

The American Heart Association's 2001 Statistical Update states that high blood pressure or hypertension was listed on death certificates as the primary cause of death of 42,997 Americans in 1999. About 50 million Americans age 6 and older have high blood pressure, that's 1 in 5 Americans.

According to the United States Preventive Services Task Force (1996), hypertension is considered a condition that's prevalence is increased in individuals with intellectual disabilities. In addition, people with lower educational and income levels also tend to have higher levels of blood pressure (American Heart Association, 2001). As stated above, hypertension, or chronically elevated blood pressure is related to development of heart disease, increased severity of atherosclerosis, stroke, congestive heart failure, left-ventricular hypertrophy, aortic aneurysm, and peripheral disease. Hypertension also causes the heart to work harder, resulting in enlargement of the heart, reducing the elasticity of the arteries, causing narrowing of the arteries, and increasing the risk of blood clot formation. The majority of individuals with high blood pressure are not undergoing therapy. If left untreated, the individual has a three to four times higher risk of developing coronary artery disease and up to seven times higher risk of having a stroke.

Another disease that is a risk factor for individuals with intellectual disabilities is diabetes mellitus. Diabetes mellitus is the fifth deadliest disease in the United States. In 1999, diabetes contributed to almost 210 thousand deaths (American Diabetes Association, 2001). The prevalence of this disease raised from 4.9 percent in 1990, to 6.5 percent in 1998, an increase of 33.3 percent (American Heart Association, 2001). Each year about 800 thousand new cases for non-insulin dependent diabetes are diagnosed as stated in the 2002 Heart and Stroke Statistical Update. Diabetes mellitus is a disease in which the body does not produce or properly use insulin, a hormone that is needed to convert sugar, starch and other food into energy needed for daily life. The cause of diabetes is a mystery, although both genetics and environmental factors such as obesity and lack of exercise appear to play roles. There are two major types of diabetes mellitus, Type 1 and Type 2. Type 1 is an auto-immune disease in which the body does not produce any insulin. Type 2, is a metabolic disorder resulting from the body's inability to make enough, or to properly use insulin. It is the most common form of the disease. Type 2 diabetes accounts for 90-95 percent of diabetes. Type 2 is nearing epidemic proportions, due to an increased number of older Americans, and a greater prevalence of obesity and sedentary lifestyles (American Diabetes Association, 2001).



Both of these types of diabetes are associated with serious complications and premature death. Many people first become aware that they have diabetes when they develop one of its life-threatening complications. Diabetes related deaths are associated with heart disease, stroke, high blood pressure, blindness, kidney disease, nervous system disease, amputations, dental disease, along with other imbalances that can cause acute life-threatening events (American Diabetes Association, 2001).

Osteoporosis has been shown to occur with high prevalence among people with developmental disabilities (Center, Beange, & McDuff, 1998). According to the American Council on Exercise, osteoporosis, which means "porous bones," is a systemic skeletal disease characterized by low bone mass and deterioration of bone strength, leading to bone frailty and increased risk of fracture. An estimated 1.5 million fractures occur each year in the U.S. as a result of low bone mass, with someone suffering a hip fracture approximately every two minutes (Chrischilles, Sherman, & Wallace, 1994). Risk factors relating to individuals with intellectual disabilities were body size, activity levels, nutrition, hypogonadism, and Down syndrome. People with intellectual disabilities also are at an increased risk of falling down (Spreat & Baker-Potts, 1983).

There are also lifestyle factors such as physical activity. Physical activity transmits mechanical forces to the skeleton

via gravitational forces and muscular pull at bony attachment sites, thus making bones stronger. This results in physically active people having higher bone mass than their sedentary counterparts (Issekutz, Blizzard, Birhead & Rodahl, 1966). We then can conclude that individuals with intellectual disabilities have a more sedentary lifestyle as noted previously by Rimmer, Braddock, & Fujiura (1993), who stated that fitness activity levels of this population lags behind people without disabilities of the same age.

Another health issue related to intellectual disabilities is mental health issues. Psychiatric disorders are more prevalent in people with intellectual disabilities compared with the general population (Tonge & Einfeld, 2000, : Corbett, 1979; Gostason 1985). One specifically that individuals with intellectual disabilities face, is a mood disorder called Depression (American Council on Exercise, 1999). Depression is characterized by a period of at least two weeks of depressed mood or loss of interest in most activities that the person formerly enjoyed (American Psychiatric Association, 1994). Depression is the most common of mood disorders. It is estimated that 10 percent of women and 5 percent to 12 percent of men suffer from depression at some time during their lives. Depression ranges from mild to severe. Symptoms of depression often develop slowly over a period of weeks to months. If left

untreated, most major depression can last six months or more, and some symptoms linger for longer periods. It is likely that the majority of sufferers do not seek help, which is especially worrisome since up to 15 percent of all depressed persons will eventually attempt suicide (Bartlett, 1996).

The last disease to be discussed is cancer. There are many types of cancers, but they can all be characterized by uncontrolled growth and spread of abnormal cells (American Cancer Society, 1997). If the spread is not controlled, it can result in death as vital passageways are blocked and the body's oxygen and nutrient supply is diverted to support the rapidly growing cancer. Although heart disease during the last half century has been the leading cause of death in the United States, cancer will probably replace heart disease as the top killer soon after the year 2000 (National Center for Health Statistics, 1997). The American Cancer Society has estimated that the lifetime risk of developing cancer is a staggering 48 percent for men and 38 percent for women. Risk factors and cigarette smoking account for nearly two-thirds of all cancers. Risk factors include reproductive issues, environmental factors, family history, physical inactivity and obesity. Rimmer, Braddock, and Fujiura (1993), stated that obesity and fitness levels of adults with intellectual disabilities cause major health risks. We thus can conclude that this population has a

higher prevalence of risk for cancer based on these health and lifestyle factors.

### ***Disease Summary***

Thus far we have discussed obesity, cardiovascular disease, high blood pressure, diabetes, osteoporosis, depression, and cancer. We have looked at the fact that individuals with intellectual disabilities are at an increased risk of these diseases due to their lifestyles. Many of these diseases have risk factors that may cause another. All are interrelated in some way, affecting abilities and interests in every aspect of individuals with intellectual disabilities lives. Thankfully, there is something that can be done to prevent and/or reduce these risk factors.

### ***Prevention***

Physical activity has many benefits that encompass and touch all of our lives. It can reduce and prevent risk factors related to obesity, cardiovascular diseases, high blood pressure, diabetes, osteoporosis, depression, and cancer. Physical activity can also be used to recover or to improve an individual's health, who may already have one of these diseases. Either way, physical exercise, if done properly, can improve all individuals quality of life.

Obesity is a major epidemic, and a risk factor for many other diseases mentioned previously. Physical activity can help

stop weight gain, help to facilitate weight loss, and help individuals maintain weight. Physical activity does this by producing heat to burn calories. If one burns more calories throughout the day, by adding physical activity, than they take in, weight management becomes easier (American Council on Exercise, 1999). Many findings about the adverse effects of obesity have prompted the American Heart Association to add obesity to its list of risk factors for development of coronary artery disease (Eckel et al., 1998).

Cardiovascular disease including, coronary artery disease, and hypertension, are diseases that are highly preventable. If the risk factors are decreased or erased, many diseases in this category would not exist. The modifiable risk factors are stress, obesity, cigarette smoking, and physical activity (American Council on Exercise, 1999). Physical activity decreases the amount of lipid development that can block blood flow thus decreasing the instance of high blood pressure.

Diabetes Mellitus is also a disease that exercise can benefit if done correctly. Regular physical exercise spurs fitness benefits for both Type 1, and Type 2 diabetes. Mild to moderate exercise may assist with daily glucose regulation on a short-term basis. Regular exercise helps lessen cardiovascular risk factors, such as mild to moderate hypertension, insulin resistance, and abnormal lipid profiles. It affects not only

metabolic control, but also factors related to cardiovascular and psychological health in diabetes (American Council on Exercise, 1999).

Osteoporosis is a disease that can be prevented and/or sufferers can benefit from exercise. Weight bearing exercise decreases calcium loss in the urine and puts it back into the bones, thus increasing bone mass (Issekutz et al., 1966). There also appears to be an association between lean muscle mass and bone mass, whereby individuals with the highest amount of muscle also tend to have the highest bone density (Khosla, Atkinson, Riggs, & Melton, 1996). In addition to these facts, athletes who participate in activities with a high muscular-load component, such as weight lifting, display higher bone mass than athletes who train in non-weight bearing activities (Conroy, Kraemer, Maresh, Fleck, Stone, Fry, Miller, & Daisky, 1993). This information is useful to us, showing that incorporating light weight-bearing activity will increase the bone mass of an individual with Osteoporosis, thus preventing breakage and increasing bone mass.

Mental health issues, such as mood disorders and anxiety disorders can be improved with exercise. Exercise has been shown to benefit treating depression combined with psychotherapy and medication. In the short term, exercise immediately improves mood and well-being. As with depression, exercise, in

addition to therapy and/or medication, may play a central role in treating anxiety disorders. In the short term, exercise decreases anxiety, and induces a more relaxed state. Aerobic exercise may be particularly effective to this population (American Council on Exercise, 1999).

The last health issue that exercise can reduce risk factors, and allows the sufferer to benefit from, is cancer. The American Cancer Society has urged that to reduce cancer risk, people should avoid all tobacco use, consume low-fat, higher-fiber diets, and be physically active to maintain a healthy weight (American Cancer Society, 1997). Exercise also appears to enhance the activity of certain cells in the immune system, especially natural killer cells, which improves cancer-fighting proficiency (MacNeil & Hoffman-Goetz, 1993).

Exercise reduces many of the risk factors to diseases that individuals with intellectual disabilities may face. While engaging in various activities will benefit them physically and mentally, it must be done in the correct way with the correct components of fitness to be beneficial.

### ***Components of Physical Fitness***

According the American Council on Exercise (1993), there are five major components of physical fitness, in terms of health. They are muscular strength, muscular endurance, flexibility, cardiovascular endurance, and body composition.

Muscular strength is defined as the maximal force a muscle or muscle group can exert during a contraction, when the muscle shortens. For example, this is how strong a person may be, measuring how much weight he or she can lift one time. Muscle endurance is the ability of a muscle or muscle group to exert force against a resistance over a sustained period of time. For instance, doing a given task and repeating it.

Flexibility is the ability to move joints through their normal full range of motion. This is important to prevent injury and to maintain body mobility.

According to the American Council on Exercise Aerobics Instructor Manual (1993), muscular strength, muscular endurance and flexibility can be altered with regular exercise if some basic principles are applied. To improve muscle strength, training intensity should be high, and the number of repetitions of each lift should be low. To improve muscular endurance the opposite principle should be followed, training intensity should be low, and the number of repetitions of each lift should be high. When working on flexibility, one should gently stretch the musculotendinous structures controlling the movement of the joint using static stretching. This involves holding a static or nonmoving position so that a joint is immobilized in a position that places the muscles at their greatest possible length.



Cardiovascular or cardiorespiratory endurance is also sometimes called aerobic fitness. This is the capacity of the heart, blood vessels and lungs to deliver nutrients and oxygen to the working muscles and tissues during exercise and to remove metabolic waste products. The performance of regular, moderately intense aerobic exercise is the key to development and maintenance of a good cardiorespiratory system. Aerobic exercise, such as dancing, walking, jogging, running, cycling, or swimming, is best characterized as rhythmic, large muscle activity of low to moderately high intensity that can be sustained without undue fatigue for at least 10-15 minutes (American Council on Exercise, 1993). A long-term program of aerobic exercise produces favorable changes in body composition which is an increase in lean body mass, and a decrease in body fat.

As stated early, many diseases can be prevented by the incorporation of exercise using the above stated components. People with intellectual disabilities have fitness levels that significantly lag behind people without intellectual disabilities of the same age. Thus, by incorporating the above components of exercise, while working with this population, we can conclude that quality of life can also be improved.

### Chapter III Methodology

As stated in the two previous chapters, physical activity has many benefits especially for individuals who have intellectual disabilities. The increased health risks to the various aforementioned diseases make it imperative to have physical activity a part of their lives. In order to facilitate this lifestyle change, the best way to do this is to bring accessible instruction involving all fitness components to increase physical fitness levels, into their homes.

#### ***Subjects***

The subjects targeted for this program are adults who have intellectual disabilities. These subjects were selected from volunteers of Indianhead Special Olympics who have been medically cleared by physicians and allowed to participate by guardians.

#### ***Sample***

A group of adults who have intellectual disabilities in any living situation.

#### ***Instrumentation***

The instrument that will be used to disseminate a physical program modified for individuals with intellectual disabilities will be through a video format. This video will be funded by

Indianhead Special Olympics and given to them for use with their athletes. Participants in this video will be Special Olympians. Informed consent from the participants and their guardians will be sought in order for them to be involved. Participants will also need to have a medical waiver on file at the Indianhead Special Olympics office in Eau Claire Wisconsin.

The location that has been selected for filming is handicapped accessible and complies with the Americans with Disabilities Act. This fitness facility has adequate lighting, with a non-slip floor, thus following all OSHA regulations.

The video will be approximately 35-45 minutes long. This time frame was selected by comparing time lengths of most fitness videos on the market, as well as taking into account time on task and attention span attainability.

The video format will include an introduction piece, a warm up, work phase, and finish with a cool down. This follows guidelines specified for physical fitness by the American Council on Exercise. Materials and/or props used in the video are items that are inexpensive and easily found in the home, or in a special educational classroom. These materials include a chair, cans of food, and/or weights. Instructions on individual exercises used will be given in a clear, concise form, using one and two step directions. Positive feedback, as well as corrections, will be incorporated in this same manner.

Chaining will be used for instruction on more complex components as needed, thus building upon what was learned previously. Modifications will be used according to individual needs. Different participants will be performing at different levels. Several participants will be sitting in chairs, while others will be ambulatory. Each will be given different forms of the same exercises at a given time. If one is unable to perform an exercise, a comparable exercise will be substituted by the instructor's cueing. The video exercise will be practiced and rehearsed ahead of time to ensure proper technique and familiarity before the video is shot. All exercises will be approved by a certified personal trainer from the American Council on Exercise.

The video time frame for taping will be two to four hours. During this time participants will be provided with water and light snacks. All participants will receive a free video when it is completed.

#### **Video Format**

The video itself will be divided into seven segments. The first will be a segment titled, "Important Tips." In this section instructions will be given before starting the physical work of the video. Topics that will be discussed will include the following; seeking doctors advice before starting any fitness program, proper clothing to wear for working out, using

a safe work out area, materials needed, suggestions of rest when needed, and recommendation to stop an exercise if pain is felt at any time.

Segment two will begin the physical part of the video. This segment will be titled, "Breathing." This section will last approximately two to three minutes. Participants will be instructed on proper breathing technique and posture. They will also be instructed to continue to use this technique throughout the video, and throughout their daily lives.

Segment three will be the "Warm Up." This segment will be approximately five to seven minutes. This segment will use movements with a low to moderate speed and range of motion. These movements are designed to promote body awareness and to increase blood flow to the muscles (American Council on Exercise, 1993.)

Segment four will be titled, "Work." This segment will include aerobics, which will aim at improving cardiovascular endurance and body composition, using large body movements performed continuously so that the heart rate remains elevated. This segment will last approximately ten to twelve minutes.

Segment five will be titled, "Strength." This section will last approximately ten to twelve minutes also. This segment will include calisthenics and strength moves. The aim of this

section will be to increase muscular strength and endurance with use of the body, body parts and/or props.

Segment six will be the, "Cool Down." This section will last approximately three to seven minutes. It will include stretching and relaxation exercises designed to further lower the heart rate, help prevent muscle soreness, enhance flexibility and re-establish the body's equilibrium (American Council on Exercise, 1993).

Segment seven will be the Titled, "Final Meditation." This section will be approximately two to three minutes long. This segment will include positive affirmations, and bring awareness back to the breath. This sections aim is to provide positive feedback to the participants and to install a feeling of well-being and positive self-talk.

***Limitations of method, sample, and procedures***

Limitations of this video will be that only members of the Indianhead Special Olympics have access to this video.

Chapter IV  
RESULTS AND DISCUSSION

Making of the Video

To make this project successful, many pieces needed to come together. The first was to contact a friend who works at a local news station, who had previously worked on athletic videos for other local universities. Through emails, and phone conversations, we decided on a date, Saturday July 12, 2003. The next step was to reserve a location. Luckily, this date was open, and I was able to secure it along with three Sunday evenings preceding it.

With dates and locations secure, I proceeded to contact a coordinator for the Red Cedar Special Olympics Program, Mary Hamann. After introductions, explanations were given. During our conversation, she offered to contact adults, parents and/or guardians as well as another coordinator working with a different group of athletes, Connie Ludy, to facilitate the first meeting. We also discussed the need for athletes that wanted to participate to be available on Saturday, July 12, and asked if they would be willing to meet on two or three previous Sunday evenings to practice, June 22<sup>nd</sup>, 29<sup>th</sup>, and/or July 6<sup>th</sup>.

The response we received was wonderful! On the first Sunday, six athletes showed up with their parent and/or guardians. In order to establish rapport with the athletes and

their families, I introduced myself. Phone numbers along with permission for athlete participation was obtained and information was given about dates for practice and the video shoot. All of the parents/guardians were very supportive and interested in having their athletes participate. All of the athletes were also excited and were expressing that they were going to be, "stars!"

Each Sunday we met for one hour. The parents and guardians were invited to stay and watch or to come back when the hour was over. Every time we met we were in the location that would eventually be used for the video shoot. We also used the same materials. I wanted to create the least amount of change or "transition," in order for the athletes to be comfortable with the routine, environment, and myself.

The first evening we met, materials were set up before the athletes arrived. During this first meeting, we just played around with activities and music. This time was approached as an opportunity to establish a relationship with the athletes, to see what moves they could do safely, and what they enjoyed. They were given lots of choices in music, and moves. The first evening was entered with a rough idea of the exercises that could be incorporate within the frame work of the American Council on Exercise's fitness principles, but also with an open mind. The athletes were full of enthusiasm, and had excellent



manners throughout our time together. Every time we would meet, practices were going to be a fun experience from which we would learn a great deal from each other.

The second Sunday we met, materials were set up in the same manner as before. This time the athletes were familiar with the routine and ready to go. As we started working out, the same format as our first meeting was used, and we added exercises that were to be used in the video. The athletes were familiar with the exercises we had performed previously, and were able to initiate them with little cueing. They were also getting used to my cueing, and looked for me to give them direction. I continued to ask them what they liked the best. I also asked them if they had any things they wanted to do.

The third Sunday we met, materials were set as before. By this time, the athletes, and I were establishing a routine. We started to work out, and incorporated what was planned to use in the video. We discussed that there was going to be a camera and other people with us the next weekend. We then talked about all of us wearing the same shirts, and black shorts. Participants were told that we would be having lunch from a local sandwich restaurant, and asked them to think about what they wanted to eat for lunch on that day. Participants were thanked for helping me, and told that they will get a copy of the video so that they can show their friends and family how well they did.

During this time, contact was made with a camera, production person, Bob Gallagher. We decided to meet on the filming day before the athletes arrived. We met at 9 am, which gave us an hour and a half to discuss various things. First I explained what I wanted. He was shown the format and the various sections. We then discussed the athletes and specific shots. The Producer discussed different techniques that he thought would work, and gave me instructions on how to proceed. We agreed that we would just do what had been done over the past month, and check in with each other during breaks between sections. We decided that after the athletes had left, we would do additional takes of myself, explaining and/or doing individual exercises. My nerves were on edge, as we wanted to get everything perfect, however, the producer put me at ease, and was very supportive throughout the day.

We then went down to the shooting location. Lighting and noise levels were checked and note were made regarding format. At this time, the athletes, their parents and guardians began to arrive. Athletes were introduced to the producer. Many already knew who he was, as they had seen him on the local news channel, where he is a sports caster. He immediately was a big hit with the athletes and they were ready to go. All of the materials had been set up before the athletes arrived, and they were in

their positions. The microphone was hooked up, last minute instructions were given, and we were off.

The same sequence was followed, with the same exercises, reminders, and cues as needed. In between sections, we took breaks, giving athletes time to get a drink of water, and at one point switching the music and having a make shift "dance party" to let off stress. We then came back to finish with the, "cool down," and "final meditation." The athletes did a fantastic job! They all followed directions, and made corrections when asked. The process ended by giving all of the athlete positive feed back, and thanked them for participating.

After we had finished the formal filming of the video, we had about 30 minutes before the food was going to be delivered. We decided to give the athletes time to do there favorite part of the video, one on one with the producer. This was great to see, as the athletes each had a different portion they liked and wanted to demonstrate. This turned into a time to, "show off for the camera," for some of the athletes. The camera continued to film as everyone danced around and had a good time.

The entire shoot, including eating, and playing around took three hours. The athletes, parents, guardians, producer, my thesis advisor, mother, and my husband all had stopped in throughout the morning. All received a sandwich, drink and chips for lunch, sponsored by the Red Cedar Basketball League.

After eating, the athletes and their families left, with warm words of thanks and appreciation, in anticipation of the final product.

After the athletes left, the producer and I worked on the introduction and shots of myself doing individual exercises. We agreed to meet the next weekend and start the editing process.

### ***Summary of Results***

The results from our day of filming consisted of four hours of footage that needed to be edited and put together for a final product. Meetings were scheduled on three different occasions to work on this project. The first day, we met at the studio and reviewed the tape. We picked out and organized how and what sections were to be include. Next came editing, including graphics, voice overs and music. Lastly we developed a closing. When we were finished each of us had a favorite part, and we were happy with the results.

The final component of this entire process was the funding and costs. Throughout this entire process I had been in contact with Andrea Sullivan, from the Indianhead Special Olympics office in Eau Claire, WI. We had discussed issues during this entire process. She was a great help and very supportive raising \$500 towards this project. As we started to work on it, it became apparent that with the time commitment and rental of equipment and services, that the cost was going to be more. I

talked with my family, and my father was able to approach the  
Kiwanis organization he is a member of and secure the additional  
\$500.

## Chapter V

### Summary and Conclusion

#### ***Statement of the Problem***

People with intellectual disabilities have fitness levels that significantly lag behind people without intellectual disabilities of the same age. These low fitness levels contribute to this populations' increased risk of obesity, heart disease, diabetes, high blood pressure, osteoporosis, depression and cancer.

#### ***Method***

Physical activity has many benefits especially for individuals who have intellectual disabilities. The increased health risks to the various aforementioned diseases make it imperative to have physical activity a part of their lives. In order to facilitate this lifestyle change, the best way to do this is to bring accessible instruction involving all fitness components to increase physical fitness levels, into their homes.

#### ***Subjects***

The subjects targeted for this program are adults who have intellectual disabilities. These subjects were selected from volunteers of Indianhead Special Olympics who have been

medically cleared by physicians and allowed to participate by guardians.

### ***Procedure/Instrumentation***

The instrument that will be used to disseminate an exercise program modified for individuals with intellectual disabilities will be through a video format.

### ***Reflections & Video Dissemination***

I had a great time making this video. Looking back over my original ideas, some things did change. Originally the plan consisted of incorporating an athlete who uses a wheel chair. This was a focal point in the development using the components of fitness and a majority of the exercises in this video. I contacted the coordinators of the Red Cedar Special Olympics, and they informed me that they currently did not have any athletes that used a wheelchair, and who were medically cleared to participate. Eventually, one contact's information was given, however coordination with his guardian, and staff working with him fell through, in the time frame that had been previously set up. Still, many of the exercises were kept the same, and many of the parts can be adapted for athletes who use wheelchairs.

The second aspect that differed from the original idea was the use of a towel and a wall. Exercises incorporating these materials were not needed. Many good exercises were included and

additional material may have increased the level of difficulty in terms of instruction.

I liked many aspects of the video. I enjoyed working with the athletes, and am very pleased with the final product. In terms of the video components, the flow and organization of the video, along with all of the exercises were personally gratifying. However, there are also things that could have been done differently if a second video was to be made.

An earlier start to incorporate athletes who use wheelchairs is recommended. The introduction portion of the video should also be more specific in terms of materials needed, and instructions on proper clothing usage. In terms of the video footage, bystanders, who were watching the shoot, should not be visible in the background. An extension, such as an insert or teacher's edition, explaining specific exercises and extension lessons and/or ideas could also be included.

This video will be disseminated to Special Olympic Athletes to use at home in between scheduled practices and events. Currently, Andrea Sullivan, from Indianhead Special Olympics office in Eau Claire, is in the process of writing a grant from the corporate Special Olympics office for production and video dissemination.



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