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A CASE STUDY INVESTIGATION OF THE PHYSICAL ACTIVITY LEVELS OF  
DISABLED STUDENTS AT A SMALL MISSOULA, MONTANA MIDDLE SCHOOL

by  
Chelsea Marie Bond  
Bachelor of Arts, Carroll College, Helena, Montana 2007

Thesis  
Presented in partial fulfillment of the requirements  
for the degree of

Master of Science  
In Health and Human Performance, Health Promotion  
The University of Montana  
Missoula, MT

Summer 2009

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## Thesis Abstract

Bond, Chelsea, M.S. July 2009 Health and Human Performance, Health Promotion

Title: A case study investigation of the physical activity levels of disabled students at a small Missoula, Montana middle school.

Chairperson: Dr. Annie Sondag

**Introduction:** One of the major goals for the nation, described in the Surgeon General's Report Healthy People 2010, is to promote the health of people with disabilities, prevent secondary conditions, and eliminate the health care disparities between people with and without disabilities in the U.S. (World Health Organization, 1997). Though limited, the literature has shown that children with disabilities have lower physical activity participation rates, lower levels of fitness, and more frequent participation restrictions in comparison to non-disabled students (Murphy, N., Carbone, P., 2008). Unfortunately, there have been limited studies that assess children with disabilities and their long-term health as a result of their inactive lifestyles (Fernhall, B., Pitetti, K., Rimmer, J., McCubbin, J., Rintala, P., Millar, A., Kettredge, J., & Burkett, L., 1996). **Purpose:** The purpose of this study is to provide a more accurate picture of physical activity levels of middle school children with disabilities and to describe the challenges and barriers related to increased physical activity for this population. **Methods:** This study utilized a qualitative case study research design. Both primary and secondary (existing) sources of data were used to explore the issues surrounding physical activity for children with disabilities. Primary data included focus groups with parents and children, key informant interviews with teachers and the school principle, field observation of children, and review of existing research and records. **Results:** A comparison of secondary data from two University of Montana studies revealed that students with disabilities had a higher rate of physical activity during the weekdays (1077.7) than their non-disabled peers (883.9); however, able-bodied students were more physically active during the weekends (884.2) than their peers with a disability (821.3). Analysis of data from primary sources revealed conflicting perceptions regarding physical activity levels. Parents of children with disabilities believed their children were less active than their able-bodied peers, while school personnel believed that the children's activity levels were similar regardless of their disability status. Major barriers to increasing activity included: lack of playground equipment, child's lack of interest in physically activity, parents are not physically active with their child, lack of communication between the school staff and parents, and the parent's and school personnel's contrasting perception of children's level of physical activity. **Conclusions:** The results of this study reveal that activity levels for children with disabilities and their able-bodied counterparts were similar. While students with disabilities were slightly more active during the school week, levels of activity in both groups were relatively low. Thus, it appears that there is a need for increasing activity levels in both groups.

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To my parents, Jane and Jim Bond, thank you for teaching me how to succeed and for your countless hours of support, love, and understanding. It was your continuous counseling that has gotten me to the place I am today, thank you.

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*“After 23 years of teaching and conducting research in the area of developmental disabilities and physical fitness, little has changed. It is my hope that we will not allow another 23 years to pass without seeing an improvement in fitness among the millions of persons with developmental disabilities.”*

James H Rimmer, PhD, Director NCPAD, 2008

## CHAPTER I

### INTRODUCTION TO THE STUDY

One of the major goals for the nation, described in the Surgeon General's Report *Healthy People 2010*, is to promote the health of people with disabilities, prevent secondary conditions, and eliminate disparities between people with and without disabilities in the U.S. population (World Health Organization, 1997). Children comprise a particularly important and underserved segment of the disabled population. From 1990 to 1994, disability rates increased among youth under age 18 years (National Institute on Disability and Rehabilitation Research, 1997). There was a 33 percent increase in activity limitations among girls, from 4.2 percent to 5.6 percent, and a 40 percent increase in activity limitations among boys, from 5.6 percent to 7.9 percent (National Institute on Disability and Rehabilitation Research, 1997).

Disabilities often result in more than activity limitations. Disabled individuals typically have physical and/or cognitive impairments, more frequent functional limitations, increased risk of chronic health conditions, decreased availability to community activities, and meager health behaviors in comparison to the non-disabled population (Rimmer, J., 2005). In addition, they report having had more days of pain, depression, anxiety, and sleeplessness and fewer days of vitality during the previous month than people not reporting activity limitations (World Health Organization, 1997). Sadly, the unfortunate physical, cognitive, and emotional effects of disability are not limited to adults. The Surgeon General's Report *Healthy People: 2010* also noted that disabled youth age 4-11 have a higher incidence of being sad, unhappy, or depressed (Satcher, D., 2000). The emotional distress, however, does not arise directly from the

person's limitations. The distress is likely to stem from encounters with environmental barriers that reduce the individual's ability to participate in life activities and that undermine physical and emotional health (Rimmer, J. & Rowland, J., 2008).

In view of the increased rates of disability among youth, it is particularly important to target activities and services that address all aspects of health and well-being, including preventing secondary conditions, removing environmental barriers, providing access to medical care, and promoting health. (Healthy People 2010: Understanding and Improving Health, 2000). Physical activity is a critical component of health promotion and disease prevention for children with disabilities. While the positive outcomes of physical activity have been determined to be beneficial and effective in the reduction of susceptibility to disease and long-term health effects for every child, they are especially beneficial for children with a disability. More specifically, increased physical activity is correlated as a helpful aid in the long term prevention of stroke, heart disease, and diabetes (Pitetti & Campbell, 1991). Not only does increased activity contribute to physical health, but involvement in recreational activities provide all youth with increased skill building, goal setting, fun, and feelings of inclusion (Murphy, N., Paul, S., Carbone, 2008).

Unfortunately, youth living with a physical disability generally face multiple barriers to increasing their social participation in leisure and recreational activities (Pitetti, KH. & Campbell, KD., 1991). Studies have deduced that children suffering from a chronic health condition spend more time alone and may require abundant, specialized interventions to achieve participation (Gannotti, M., Veneri, D., Roberts, D., 2007). They continue to have lower participation rates and reduced fitness levels

compared to peers, as well as higher rates of obesity (Pitetti, KH. & Campbell, KD., 1991).

### **Statement of the Problem**

Children with disabilities have lower physical activity participation rates (e.g. organized sports such as soccer, basketball, football, swimming, etc.), lower levels of fitness, and more frequent participation restrictions in comparison to able bodied students (Murphy, N., Carbone, P., 2008). Unfortunately, there have been limited studies that assess the activity levels of children with a disability and their long-term health conditions as a result of their inactive lifestyles (Fernhall, B., Pitetti, K., Rimmer, J., McCubbin, J., Rintala, P., Millar, A., Kettredge, J., & Burkett, L., 1996).

### **Purpose of the Study**

The purpose of this study is to provide a more accurate picture of physical activity levels of disabled, middle school children, and to describe the challenges and barriers related to increased physical activity for this population.

### **Significance of the Study**

A review of the literature regarding physical activity and middle school children reveals a paucity of information about children with disabilities and their current activity levels. This study will describe the current activity levels of children with disabilities in one Title 1 middle school in Missoula, Montana. In addition, recognizing the critical role played by significant adults in encouraging physical activity among children, the researcher will ask parents, teachers and the school principal about their perceptions regarding the long term health effects related to decreased physical activity; health benefits as a result of increased physical activity; and the challenges and/or barriers that prohibit increased amount of physical activity in the lives of children with a disability.

Conclusions drawn from this study will be shared with parents and school personnel and will include recommendations for increasing physical activity.

## **Research Questions**

### *Health Belief Model*

Research questions were designed to reflect the major components of the Health Belief Behavior Change Model. This model was chosen because it is predictive of behavior change based on an individual's perceptions or beliefs about the behavior in question. In this study, we are exploring the beliefs of administrators, teachers and parents in regard to the behavior of encouraging and providing opportunities for increased physical activity among children with a disability. Specifically, the model states that in order for behavior change to occur, the individual(s) contemplating change must have four beliefs.

- First, (perceived susceptibility): the individual must believe that children with disabilities are at risk of acquiring a negative health condition if they do not increase physical activity levels
- Second (perceived severity): the individual must believe the consequences of acquiring the negative health condition is serious
- Third, (perceived benefits): the individual must believe that by taking the recommended action (increasing activity) the negative health condition can be avoided
- Fourth (perceived barriers): the individual must believe that the positive consequences of adopting the behavior outweigh the tangible and psychological costs of the advised action

## Research Questions

1. What are the existing levels of physical activity for middle school aged children with a disability?
2. What are the existing physical activity opportunities for middle school disabled children?
3. What are key informants' beliefs about physical activity for children with disabilities?
  - What are key informants' perceptions regarding the health effects of inactivity? (susceptibility and seriousness)
  - What are key informants' perceptions regarding the health benefits of physical activity for children with disabilities? (benefits)
  - What are key informants' perceptions of the challenges or barriers to increasing levels of physical activity? (barriers)

## **Definitions of Terms**

**Accelerometer:** A device that measures movement by ascribing counts (an arbitrary unit) to the amount of work a person is performing related to device acceleration (Mohar, L., Gaskill, S., Cox, C., Laskin, J., Miller, A, 2007).

**Child:** A young person of either sex below the age of puberty; a boy or girl (Oxford, 2008).

**Children with a Chronic Health Condition:** children with special care needs, or children that are at an increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally (Gannotti, M., Veneri, D., Roberts, D., 2007).

**People with disabilities:** People identified as having an activity limitation or who use assistance or who perceive themselves as having a disability (Healthy People 2010: Understanding and Improving Health, 2000).

**Descriptive Research:** Research that describes the characteristics of an existing phenomenon. Descriptive research is often used to serve as a basis for other research to describe meaningfulness of differences found (Salkind, N., 2006).

**Exercise:** To perform, practice, take part in (an action, feat, game, etc.); to play (a part) (Oxford, 2008).

**Informed Consent:** A process of communication between patient and provider through which an informed patient can choose whether to undergo HIV testing or decline to do so. Elements of informed consent typically include providing oral or written information regarding HIV, the risks and benefits of testing, the implications of HIV test results, how test results will be communicated, and the opportunity to ask questions (USDHHS, 2007).

**Needs Assessment:** The process of determining, analyzing, and prioritizing needs, and in turn, identifying and implementing solution strategies to resolve high-priority needs (Mckenzie, J., Neiger, B., Smeltzer, J., 2005).

**Key informants:** Individuals expected to have particular or expert knowledge about the target population (the county, its people), the environment and issues (Yogerst, 2008).

**Physical Activity:** Movement of the body that uses energy (United States Department of Agriculture, 2008).

**Prevalence:** The number of affected persons present in the population at a specific time divided by the number of persons in the population at that time (Gordis, L., 2004).

**Primary Data:** Data collected by researcher which answers unique questions related to the specific needs assessment (McKenzie, J., Neiger, B., Smeltzer, J., 2005).

**Secondary Data:** Data previously collected by someone else and available for researcher immediate use (McKenzie, J., Neiger, B., Smeltzer, J., 2005).



## CHAPTER II

### REVIEW OF LITERATURE

This review of literature will examine four major areas related to middle school children with disabilities including: 1) the most common childhood disabilities; 2) physical activity and children with a disability; 3) local and national school based programs to promote physical activity; and 4) the developmental stage of middle school children.

#### **Most common childhood disabilities**

The National Center on Physical Activity and Disability cites the most common childhood physical disabilities as cerebral palsy, spina bifida, neuromuscular disorders, and respiratory disorders (Rimmer, J. 2005).

#### *Cerebral Palsy*

The United Cerebral Palsy Foundation (UCP) approximates 800,000 adults and youth living with one or more cerebral palsy conditions and reported 10,000 babies are born every year with cerebral palsy (Babcock, D., 2008). By definition, cerebral palsy is a neurological disorder that appears in infancy or early childhood, and permanently affects body movement and muscle coordination; however, it typically does not progress over time (Babcock, D., 2008). The root of cerebral palsy is not in the muscles or nerves, but formed by an abnormality in the brain that controls muscle movement and is a condition that cannot be prevented. The non-progressive nature of the brain abnormality that makes up cerebral palsy is responsible for the lack of disease progression over time, but a person with cerebral palsy may experience varying degrees of symptoms throughout their lifetime and the manifestations of the symptoms may differ from person to person

(CDC, 2004). Most children diagnosed with cerebral palsy were born with the condition and typically show signs supporting lack of muscle control in their first three years of life. There are four main types of cerebral palsy – spastic, athetoid, and ataxic. A majority of people with cerebral palsy have more than one condition and are generally identified as having mixed cerebral palsy. A majority of cases have spasticity and athetoid movements. On top of there being four different types of cerebral palsy, the amount of severity varies from person to person. For example, one person may not be able to walk without assistance and may require life-long care where another individual with mild cerebral palsy may have a slight walking impairment and have no need for additional care (CDC, 2004).

Individuals with spastic cerebral palsy demonstrate muscle stiffness and have difficulty making smooth transition movements as a result of an abundance of muscle tone (CDC, 2004). Seventy to eighty percent of all cases of cerebral palsy are qualified as spastic and can affect multiple areas of a person's body; for example, spastic diplegia affects both of a person's legs; spastic hemiplegia affects one side of someone's body; and spastic quadriplegia affects a person's whole body (face, trunk, legs, arms, etc.) (CDC, 2004).

Athetoid cerebral palsy affects 10 to 20 percent of all cases and involves sluggish, uncontrollable movements to a person's body; such as their hands, arms, feet, and legs . In some extreme cases, athetoid cerebral palsy can affect a person's face and tongue making it difficult for speech. The severity of this condition can change daily making it difficult for an individual to know what to expect or how to improve their day to day living (CDC, 2004).

Five to ten percent of people with cerebral palsy are affected by ataxic which typically leads to issues involving balance and depth perception. Visually this would cause a person to look unstable while walking and lead to limited amounts of agility for tasks that require a lot of quick movements such as writing. Furthermore, the ability to stretch or reach for items may be limited and difficult (CDC, 2004).

Side effects of cerebral palsy are not limited to spastic, athetoid, and/or ataxic conditions as individuals may also suffer from seizures, vision impairments, hearing loss, or developmental delay (CDC, 2004). Cerebral palsy cannot be cured but it is manageable (Babcock, D., 2008). Counseling, physical therapy, occupational therapy, speech therapy, surgery, braces, and pharmaceuticals can all be used to help an individual with cerebral palsy experience the highest quality of life. Depending on an individual's specific level of need as a result of their diagnosis interventions will vary to assist with an increased amount of physical activity.

### *Spina Bifida*

Spina bifida is defined as “a birth defect that involves the incomplete development of the spinal cord or its coverings, and literally means open spine” (Heubner, A., 2000). The identified cause of spina bifida is not specifically known, but has been linked in some cases to gene involvement and there appears to be strong association with folic acid deficiency. Some studies have linked women who suffered a high fever during pregnancy and an increased risk of delivering a baby with spina bifida (Heubner, A., 2000). In the United States approximately 4 million babies are born annually and, of that number, 1,500 – 2,000 babies are born with spina bifida (Heubner, A., 2000). There are four conditions associated with spina bifida, occulta, closed neural

tube defects, meningocele, and myelomeningocele. Any individual diagnosed with spina bifida will have one of these four conditions.

The first type of spina bifida is occulta. Occulta is the most common and mild form of spina bifida. The occulta condition occurs when one or more vertebrae's are malformed and the opening of the spine is covered by an additional layer of skin. Most people with occulta have minimal symptoms and no disability.

Closed neural tube defect is the second type of spina bifida and includes multiple spinal malformations of fat, bone, or membranes. Typically there are limited to no symptoms and the most extreme case has incomplete paralysis with inadequate function of the urinary and bowel systems.

Meningocele is the third type of spina bifida and occurs when the meninges of the spinal column extend beyond the spinal opening and usually are covered by a layer of skin. For individuals with meningocele symptoms are minimal.

The fourth category of spina bifida is myelomeningocele and occurs when the spinal cord is not protected and open. As a result, most individuals experience total paralysis below the affected, open area of the spine. Myelomeningocele is the most severe stage of spina bifida and may leave a person unable to walk or control their bowels or urinary tract.

For individuals with spina bifida complications can vary from minor physical disability to severe developmental and physical disability. Most people, however, with diagnosed spina bifida have no compromise in intelligence and the level of disability truly depends on the size and location of the malformation; the larger and more cephalic the malformation the greater the amount of paralysis and loss of muscle function.

Although there is no cure treatment through medications, physical therapy, and surgery is an option (Heubner, A., 2000).

### *Neuromuscular Disorders*

Neuromuscular disorders include amyotrophic lateral sclerosis, multiple sclerosis, post polio syndrome, Parkinson's disease, muscular dystrophy, myasthenia gravis, and spinal muscular atrophy (Rimmer, J., 2005). Neuromuscular disorders are characterized as a condition that impinge on a person's nerves; more specifically the nerves that contribute to voluntary muscle control. While a person continues to live and age with this condition their nerves slowly lose their strength over time (Lindberg, D., 2008). Typical physical symptoms of a person with neuromuscular disorder include muscle weakness, twitching, cramps, general aches and pains, and difficulty moving joints. Although it is rare some individuals experience difficulty breathing and have compromised heart functioning. A majority of the neuromuscular disorders are a result of a person's genetic makeup and a family predisposition to one of the conditions; however, some are a result of an immune system disorder.

Currently there is limited research on the appropriate level of "safe" exercise and if exercise can slow the deterioration process of an individuals' disease as there is no cure for any of the associated conditions - multiple sclerosis, post polio syndrome, amyotrophic lateral sclerosis, myasthenia gravis, Parkinson's disease, and muscular dystrophy (NCPAD, 2005).

### *Respiratory Disorders*

Asthma is one of the major physically disabling respiratory conditions and affects roughly 22 million Americans, including six million children (NCPAD, 2005). Asthma

can affect people at any age, and is defined as a “chronic lung-disease that inflames and narrows a person’s airway (the tubes that transfer air in and out of your lungs),” (NHLBI, 2008). Asthma affects all people and isn’t limited to one specific age group; however, most cases of asthma begin in childhood and typically affects more boys than girls (NHLBI, 2008). There are different degrees of severity regarding asthma and it is a condition that cannot be cured, only managed. An asthma attack or “flare up” can occur at any moment and an individual’s condition can vary from mild to severe and the most common symptom is frequent wheezing. An exact cause for asthma is unknown and the disease explanation can differ from person to person. One of the most common causes of asthma is when a person inherits asthma from their parent or suffers from a respiratory infection at a young age. People suffering from asthma do not need to remain inactive, however, depending on their level of severity medical interventions under a physicians’ care may be appropriate.

### **Physical Activity and Children with a Disability**

To date, there is a variety of literature surrounding the physical activity levels and behaviors of youth; however, research on the physical activity patterns of disabled youth is minimal (Frey, G., Stanish, H., and Temple, V., 2008). This section of the review of literature on disabled youth covers two topic areas: 1) a review of research that examined physical activity levels of disabled youth; and 2) nationally recognized data sources related to disability and physical activity in Montana: Behavioral Risk Factor Surveillance Survey (BRFSS) and Youth Risk Behavior Survey (YRBS).

### *Physical activity and youth with intellectual disability*

To date, research surrounding youth with disabilities indicates that physical activity differs depending on time of day, day of week, age, and gender (Frey, G., Stanish, H., Viviene, T., 2008). In 2003, a study completed by Kozub addressing physical activity patterns and behaviors of intellectually disabled youth assessed seven youth with mild intellectual disability. Accelerometer data was collected for seven consecutive days, and found the greatest rate of activity to be reported in the afternoon (Kozub, FM., 2003). Furthermore, a majority of the bouts of energy for physical activity occurred in two to six minute intervals, six to eighteen times per day. Kozub used the American College of Sports Medicine (ACSM) recommendations as a guideline for evaluating the reported levels of physical activity from participants in his study. At time of submission, ACSM recommended at least sixty minutes of physical activity, five times per week, in bouts of ten minutes or more. As a result of ACSM suggested levels of physical activity, participating youth were not meeting the suggested physical activity recommendations (Kozub, FM, 2003).

In 1991, another study was completed by Suzuki et al to evaluate the physical activity levels of disabled youth. 585 youth, ages three to twenty-two, identified as deaf, blind, intellectual disability, or living with a physical impairment were evaluated by Suzuki et al. The severity of each participant's disability was not documented. For 24 hours each participant wore a waist pedometer, beginning at the start of their school day. The recorded pedometer results identified males with intellectual disabilities to be more active than females with an intellectual disability and students with a physical disability,

but less active than deaf youth (Suzuki, M., Saitch, S., Tasaki, Y., Shimomura, Y., Makishima, R., & Hosoy, N., 1991).

In 2006, another study was completed to gauge physical activity levels of disabled youth; however, this study was slightly different from the previously reported literature as it used a combined effort of accelerometer and pedometer data collection. Sixteen youth with a disability had their physical activity levels recorded by Kim in 2006. For eleven days (7 week days, 4 weekends) pedometers and accelerometers were worn by sixteen youth ages eleven to twenty representing the following conditions: intellectual disability (9), down syndrome (2), autism (2), traumatic brain injury (1), and developmental delay (2). The first two weekdays of collected accelerometer data was removed from the overall activity analysis. The first two days were removed from the analysis based on the assumption that since the participants only wore the accelerometers during one, eleven-day period, the first two days served as a familiarization period to the new device. Results from this study revealed that students with developmental disabilities were less active on the weekends than during the week; however, some participants collected pedometer and accelerometer recorded physical activity data was low on weekdays and weekends (Kim, S., 2006).

The one study examined that did not use accelerometer or pedometer data to compare physical activity among disabled youth was completed in 2005 by Kochersperger. Kochersperger used the System for Observing Fitness Instruction Time (SOFIT) to evaluate 36 youth, ages five to eighteen. The study represented the following disabilities: intellectual disability (55.5%), Autism (17%), learning disability (5.5%), health impairment (11%), and speech/language disability (11%). Each student's physical



activity was measured using the SOFIT for five weeks during their scheduled physical education class. SOFIT is an objective tool for assessing the quality of physical education class instruction. The evaluation was a comprehensive design, and incorporated a review of student activity levels, lesson content, and teacher behavior during their class time (McKenzie, T.L., 2002). Results of the study indicated that students in the observed classroom with an intellectual disability, autism, learning disability, health impairment, and/or speech/language disability had significantly lower levels of physical activity than their peers without a disability (Kochersperger, KA., 2005).

### *YRBS Results*

Information from the Centers for Disease Control (CDC) Youth Risk Behavior Surveillance System (YRBS) was also examined. YRBS determines the prevalence of health-risk behaviors through a self-reported youth survey, and primarily focuses its efforts on six major areas. The YRBS sections of focus include: behaviors that result in unintentional and intentional injuries; tobacco use; alcohol and drug abuse; sexual behaviors that result in HIV infection, other sexually transmitted diseases, and unintended pregnancies; physical activity; and dietary behaviors. This case study primarily focused on 2007 Montana physical activity results for the disabled population.

In 2007, data regarding disabled students was compiled using information from the Montana Youth Risk Behavior Survey (YRBS). The information listed below describes the reported levels of physical activity of Montana ninth through 12th grade students without a reported disability compared to students with a disability; however, it is important to note that the students with a disability population was limited to Montana

high schools and excluded seventh and eighth grade students. The 2007 Montana YRBS defined a student with a disability (SWD) as anyone who answered ‘yes’ to the question, “During the past 12 months, did you receive help from a resource teacher, speech therapist or other special education teacher?” Furthermore, the Montana YRBS defined physical activity as “an activity that increases your heart and makes you breathe hard.”

In 2007 all public and private high schools in the state were invited to voluntarily participate in the Montana YRBS survey. One hundred forty-four public and private high schools across the state volunteered to participate; therefore the selection was not random. 4,030 students participated in the 2007 Montana YRBS, and 1,214 students reported having a disability per the YRBS definition. The age range of students with a disability completing the YRBS survey was 14 to 18 with a majority of the participants being 17 years old or younger (13.7% 18 or older, 16-17 48.6%, 15 or younger 37.6%).

All teachers administering the surveys to their students were given explicit, written instructions from YRBS to provide a uniform procedure across the state as to how the survey was administered to produce the most accurate results. A strict privacy and confidentiality protocol was put into place to encourage all students to honestly answer sensitive questions; however, all participation was completely voluntary and any question could be left blank.

Results of the 2007 high school Montana YRBS survey reveal a 4.6 percent difference in the number of non-disabled versus disabled students who report being physically active for a minimum of 60 minutes per day. The biggest difference between these two groups of students was in the amount of time spent watching television. Thirty-one percent of disabled students reported watching an average of two or more

hours of television a day while only 22 percent of non-disabled students reported watching that much television. The table below represents these reported numbers from the Montana YRBS report (Centers for Disease Control, Youth Risk Behavior Survey, 2007).

Table 1.0: 2007 Youth Risk Behavior Survey, Montana Comparative Report: Students without and with Disabilities; Grades 9<sup>th</sup> through 12<sup>th</sup>.

Physical Activity for High School Students	Student without Disabilities	Students with Disabilities
Were physically active for at least 60 minutes per day on three or more of the past seven days	44.9%	40.3%
Watched two or more hours per day of TV on an average school day	22.2%	31.0%
Played video or computer games for 2 or more hours per school day	30.1%	32.0%
Attended physical education (PE) classes daily when they were in school	32.8%	32.0%
Played on one or more sports teams during the past 12 months	59.6%	55.3%
Have been told by a doctor or nurse that they have asthma	20.9%	28.3%
Still have asthma	14.9%	19.8%

The 2007 Montana YRBS data demonstrated that children with disabilities participated less in daily physical activity, generally watched more television on a daily basis than their non-disabled peers, and participated less on sports teams than their non-disabled peers. The differences, however, between the non-disabled and disabled students reported activity levels were not great. In most cases there was a less than 5 percent difference.

### *BRFSS Results*

Information from the Montana Behavioral Risk Factor Surveillance System (BRFSS) 2004 & 2007 was used to define the current number of disabled adults living in Montana and their rate of participation in leisure time physical activity. BRFSS is a randomized, state- wide telephone survey conducted monthly to identify risk factors that affect health. BRFSS was established in 1984 by the Centers for Disease Control (CDC) and obtains information on health risk behaviors, preventive health practices, and health care access for all individuals. Currently, the BRFSS is the largest telephone survey tool in the world and the information/knowledge gained is used by many states to impact emerging health conditions, improve public health policy, evaluate health objectives and initiatives, and support health-related legislation.

The 2007 Montana Behavioral Risk Factor Surveillance System (2007) asked the following two questions to identify the number of disabled persons living in Montana: “are you limited in any way in any activities because of physical, mental, or emotional problems” and “do you have any health problem(s) that requires you to use special equipment.” Out of the 4308 people surveyed, 1600 were identified as disabled. Nearly 16% of the 1600 respondents who were identified as disabled reported that their activities were limited by their current health problem. There was no data listed for people under the age of 18 and the specific disabilities of respondents were unavailable.

The 2004 Montana BRFSS section “Assessing disability and Secondary Health Conditions of Montana Adults” compiled data from 2001 and 2003 regarding the number of disabled adults not participating in leisure time physical activity. The report also looked at disabled Montana adults that were meeting the currently set recommendations

for moderate physical activity of 30 cumulative minutes per day, five or more days per week. Results indicated that one in three (34%) Montana adults with a disability were not engaging in leisure time physical activity (Montana Behavioral Risk Factor Surveillance System, 2004). Furthermore, two times as many adults with a reported disability (34%) reported not engaging in leisure time physical activity in comparison to non-disabled adults (17%).

Table 2.0: Meets recommendations for moderate physical activity, 2001 and 2003

<b>2001 BRFSS</b>	<b>Total Number</b>	<b>% of Total Population</b>
All Adults	3129	51.2%
Adults with disability	691	36.9%
Age 18-64	467	40.6%
Age 65+	224	27.6%
Adults without disability	2434	54.7%
Age 18-64	1995	55.8%
Age 65+	435	47.9%
<b>2003 BRFSS</b>	<b>Total Number</b>	<b>% of Total Population</b>
All Adults	3750	58.5%
Adults with disability	881	48.8%
Age 18-64	595	51.3%
Age 65+	281	44.0%
Adults without disability	2852	61.1%
Age 18-64	2344	62.2%
Age 65+	487	54.6%

## **Consequences of Childhood Disabilities**

Disabilities often result in more than activity limitations. Disabled individuals typically have increased physical and cognitive impairments, more frequent functional limitations, increased risk of chronic health conditions, decreased availability to community activities, and meager health behaviors in comparison to the non-disabled population (Rimmer, J., 2005). In addition, they report having had more days of pain, depression, anxiety, and sleeplessness and fewer days of vitality during the previous month than people not reporting activity limitations (World Health Organization, 1997). Sadly, the unfortunate physical, cognitive, and emotional effects of disability are not limited to adults.

The Surgeon General's Report *Healthy People: 2010* also noted that disabled youth aged 4 to 11 have a higher incidence of being sad, unhappy, or depressed (Satcher, D., 2000). Data collected in 1997 from the National Health Interview Survey identified that 31 percent of disabled youth, ages 4 to 11 reported feeling sad, unhappy, or depressed. This rate for disabled youth is in contrast to the 17 percent of able-bodied youth, ages 4 to 11 who report feeling sad, unhappy or depressed (Healthy People 2010: Understanding and Improving Health, 2000). The emotional distress, however, does not arise directly from the person's limitations. The distress is likely to stem from encounters with environmental barriers that reduce the individual's ability to participate in life activities and that undermine physical and emotional health (Rimmer, J. & Rowland, J., 2008). Table 3.0 below shows the reported rates of feelings of sadness, unhappiness, or depression in youth aged 4 to 11, with and without a disability.

Table 3.0: Reported Rates of being sad, unhappy, or depressed with and without a disability

Children and Adolescents Aged 4 to 11 Years, 1997	Reported To Be Sad, Unhappy, or Depressed	
	With Disabilities	Without Disabilities*
	Percent	
<b>TOTAL</b>	31%	17%
<b>Race and ethnicity</b>		
American Indian or Alaska Native	DSU*	DSU*
Asian or Pacific Islander	DSU*	13%
Asian	DSU*	16%
Native Hawaiian and other Pacific Islander	DSU*	DSU*
Black or African American	DSU*	16%
White	31%	17%
Hispanic or Latino	32%	16%
Not Hispanic or Latino	30	17%
Black or African American	DSU*	17%
White	31%	18%
<b>Gender</b>		
Female	32%	16%
Male	30%	18%
<b>Family income level</b>		
Poor	37%	20%
Near poor	31%	17%
Middle/high income	27%	17%

\* DSU = data statistically unreliable

Geographic location of youth who reported being sad, unhappy, or depressed with and without disability		
Geographic Location	With Disability	Without Disability
Urban	27%	17%
Rural	39%	16%

Given the multiple negative health consequences associated with childhood disabilities, it is particularly important to target activities and services that address all aspects of health and well-being, including preventing secondary conditions, removing environmental barriers, providing access to medical care, and promoting health. (Healthy People 2010: Understanding and Improving Health, 2000). Physical activity, in particular, is a critical component of health promotion and disease prevention for children with disabilities. While the positive outcomes of physical activity have been determined to be beneficial and effective in the reduction of susceptibility to disease and long-term health effects for every child, they are especially beneficial for children with disabilities. More specifically, increased physical activity is correlated as a helpful aid in the long term prevention of stroke, heart disease, and diabetes (Pitetti & Campbell, 1991). Not only does increased activity contribute to physical health, but involvement in recreational activities provide all youth with increased skill building, goal setting, fun, and feelings of inclusion (Murphy, N., Paul, S., Carbone, 2008).

Unfortunately, youth living with a physical disability generally face multiple barriers to increasing their social participation in leisure and recreational activities (Pitetti, KH. & Campbell, KD., 1991). Studies have deduced that children suffering from a chronic health condition spend more time alone and may require abundant, specialized interventions to achieve participation (Gannotti, M., Veneri, D., Roberts, D., 2007). They continue to have lower participation rates and reduced fitness levels compared to peers, as well as higher rates of obesity (Pitetti, KH. & Campbell, KD., 1991).



### **School based programs to promote physical activity**

Healthy People 2010 identified that the current rate of disability among American youth is increasing, and that the benefit of physical activity is a crucial piece to their promotion of optimal health (Healthy People 2010: Understanding and Improving Health, 200). Furthermore, youth living with a physical disability commonly experience several barriers when trying to increase their social participation in leisure and recreational activities (Pitetti, KH. & Campbell, KD., 1991). Physical activity has also been attributed to an increase in overall physical and emotional health, and involvement in recreational activities provides all youth with increased skill building, goal setting, fun, and feelings of inclusion (Murphy, N., Paul, S., Carbone, 2008). Nationally, there are several programs that have been implemented to increase and encourage physical activity among middle school aged children. *Youth Becoming Healthy*, National Youth Sports Program, The Boys and Girls Club, Flagship, YMCA, and the Special Olympics are all programs that are nationally based programs to promote physical activity in youth across America. Locally, the state of Montana has established the Montana Action for Healthy Kids endeavor to promote physical activity for all youth.

*Youth Becoming Healthy* (YBH) is a Georgia based non-profit national organization whose mission is to “enrich quality of life in youth and their families through nutrition and fitness education.” (Jackson, P., 2006). YBH was designed and implemented by Pamela Green-Jackson, PhD, in 2006 in memory of her brother who died as a result of complications from morbid obesity. The YBH program strives to remove any barriers children may face to increase their physical activity. The target population of this project is middle school students and their families, and YBH addresses concerns from their everyday school environment. YBH uses funding from several different

organizations, local and corporate, to create fitness centers in local middle schools and teach children how to properly use all of the equipment and appropriate levels of exercise. Students are then able to participate in a free, after school fitness program which includes aerobics classes, proper weight-lifting technique, and a walking club. In addition, funding has been used to address the lunch room menus (providing salads, more baked goods, and vegetables) at various middle schools throughout the Dougherty County school district. A similar program could be adopted to promote physical activity in disabled youth in Montana.

The National Youth Sports Program (NYSP) began in 1969 from a \$3 million government mandate to establish economically disadvantaged youth sports programs. To date, over 2 million youths have participated in the NYSP program. Through their mission, “preparing young people for a lifetime of learning, sportsmanship and physical fitness with the ability and commitment to contribute to their families, schools and communities,” NYSP provides skills training, & competition for an array of activities to promote physical fitness and healthy meals (Jackson, P., 2006). As a free bonus, all NYSP participants receive free meals and a medical screening. Until 2006, NYSP was available on the University of Montana campus to all Missoula area youth; however, it has since lost funding.

The mission statement of the Boys and Girls Club of America is "To inspire and enable all young people, especially those who need us most, to realize their full potential as productive, responsible and caring citizens” (BCGA, 2008). Programs offered through the Boys and Girls Club include after school, weekend and summer programs for low income youth ages 6-18. The Boys and Girls Club of America has locations in all 50

states and began in Hartford, Connecticut in 1860 as a place for “boys who roamed” to go. In 1990, the name was changed from The Boys Club to the Boys and Girls club to address that young girls were also welcome to join the club and apart of their cause.

The YMCA is one of the largest, not-for-profit community service organizations in the United States. In conjunction their mission statement declares a “dedication to building healthy spirit, mind and body for each person it serves” (YMCA, 2008). From after school care, to aquatics and special Olympic events, the YMCA is committed to increase physically active, especially for youth. Currently, nearly 10 million children participate in YMCA based activities and it is the nation’s largest provider of health and wellness programs. The newest endeavor for increased health and wellness is the Activate America program. Activate America strives to support youth, adults, and families to become more soundly mentally and physically healthy by activating the communities in which they live.

The Special Olympics is a nonprofit physical activity option for intellectually disabled youth. Through the Special Olympics program intellectually disabled youth are given the opportunity to compete in several different athletic competitions and an ability to increase their physical fitness. The mission of the Special Olympics is “to provide year-round sports training and athletic competition in a variety of Olympic-type sports for children and adults with intellectual disabilities, giving them continuing opportunities to develop physical fitness, demonstrate courage, experience joy and participate in a sharing of gifts, skills and friendship with their families, other Special Olympics athletes and the community” (Special Olympics, 2008).

Montana Action for Healthy Kids (MTAFHK) is a product of the Eat Right Montana Coalition and was adopted by the Department of Health and Human Services (DPHHS) State team in September, 2006. The Eat Right Montana Coalition promotes healthy eating and active lifestyles for all Montana residents (Eat Right Montana, 2007). Their mission of MTAFHK is “a dedication to improving the health and wellness of our children in schools and communities through nutrition & physical activity where children learn, participate in, and enjoy health lifestyle behaviors” (Eat Right Montana, 2007). In June 2007, the Montana Action for Healthy Kids identified three main goals for achieving their mission. The 3 main goals are as follows:

- Montana Goal 1: Promote and support age-appropriate and culturally sensitive instruction in health education and physical education that help students develop the knowledge, attitudes, skills, and behaviors to adopt, maintain and enjoy healthy eating habits and a physically active lifestyle.
- Montana Goal 2: Promote and support policies ensuring that all foods and beverages available on school campuses and at school events contribute toward eating patterns that are consistent with the Dietary Guidelines for Americans.
- Montana Goal 3: Encourage the use of school facilities for physical activity programs offered by the school and/or community based organization outside of school hours.

MTAFHK provides a detailed framework of action that directly impacts the health benefit of Montana and physical activity opportunities of Montana youth.

It is imperative for all Montana Public School teachers, principals, administrators, and parents to be aware of all resources, free and those for cost, available to their school

children. Physical activity is achievable, and through the referenced resources above it doesn't have to be unaffordable.

### **Developmental stage of Middle School Children**

Adolescent development typically occurs during middle school years or early high school age for all youth (Rogol, A., Clark, P., Roemmich, J., 2000). Puberty is identified as the forceful physical changes that occur in adolescents as they move from childhood to physical maturity and are typically noted as the appearance of secondary sexual characteristics (Lindberg, D., 2008). Puberty affects preteens physically, cognitively, and socially (Alexander, M., 2008). Although puberty is a natural part of life for all youth, not all teens follow the same timeline.

#### *Physical Development*

Physical development is characterized by rapid gains in height and body weight. During this period, a majority of teens experience growth spurts that vary between 3.5-4.1 inches in height (Alexander, M., 2008). Secondary sex characteristics, such as the transformation in levels of hormones, result in the growth of pubic hair; first menstruation for young girls or penis growth for young boys; growth of body hair; increased production of oil and sweat gland production; and potentially the beginning of acne. During this stage, the growth and development of human brain is also occurring. Recent research suggests that human brains' are not completely formed until late stages of their adolescent years. Furthermore, this may help explain the noted unpredictability of teenage control over emotions, impulses, and judgment (Alexander, M., 2008).

### *Cognitive Development*

Cognitive development includes advanced reasoning skills, abstract thinking skills, and the process of meta-cognition. The acquisition of reasoning skills allows for an individual to think about multiple possibilities and options at the same time. Abstract thinking skills involve the ability to process information that cannot be seen, heard, or touched. Meta-cognition is the ability to understand, process, think about feelings, and recognition of what others think about them. The development of cognitive skills typically leads to increased levels of self-consciousness and concern for how others view them (Alexander, M., 2008).

### *Psycho-Social Development*

Psychosocial development entails five main subjects. These areas of development include establishing an identity, establishing autonomy, establishing intimacy, satisfaction with their sexuality, and personal achievement (Alexander, M., 2008). During this time, adolescents begin to replace family time with time with their friends and begin to identify behaviors that are within acceptable limits and those that are not. Typically, a sense of independence from parental control is challenged during this development stage and an increased need to be elusive occurs.

### **Conclusion**

While this review of literature exposed the limited amount of information focused on the population of disabled youth, several conclusions can be drawn from the literature. First, current research studies on disabled youth were limited and included very small sample sizes. The information examined, however, led to the conclusion that disabled youth are less physically active than non-disabled youth, and that their average time spent

being physically active is also lower on the weekends than the weekdays (Kochersperger, KA., 2005). Second, youth living with a disability generally report a higher rate of feelings of sadness, unhappiness, or depression when compared to their non-disabled peers. We also know that physical activity can counteract many of the physical and emotional consequences that result from living with a disability. Not only does increased activity contribute to physical health, but involvement in recreational activities provides youth with increased skill building, goal setting, fun, and feelings of inclusion (Murphy, N., Paul, S., Carbone, 2008). Finally, there are several national programs available that were designed to help increase physical activity among disabled youth populations.

Because physical activity can have a positive effect on the social, emotional and physical health of children with disabilities it is important to gain a greater understanding of physical activity among children with a disability. Thus, it was the purpose of this study to ascertain the level of activity among disabled middle school children and to identify challenges or barriers they face in increasing their physical activity levels.

## **CHAPTER III**

### **METHODOLOGY**

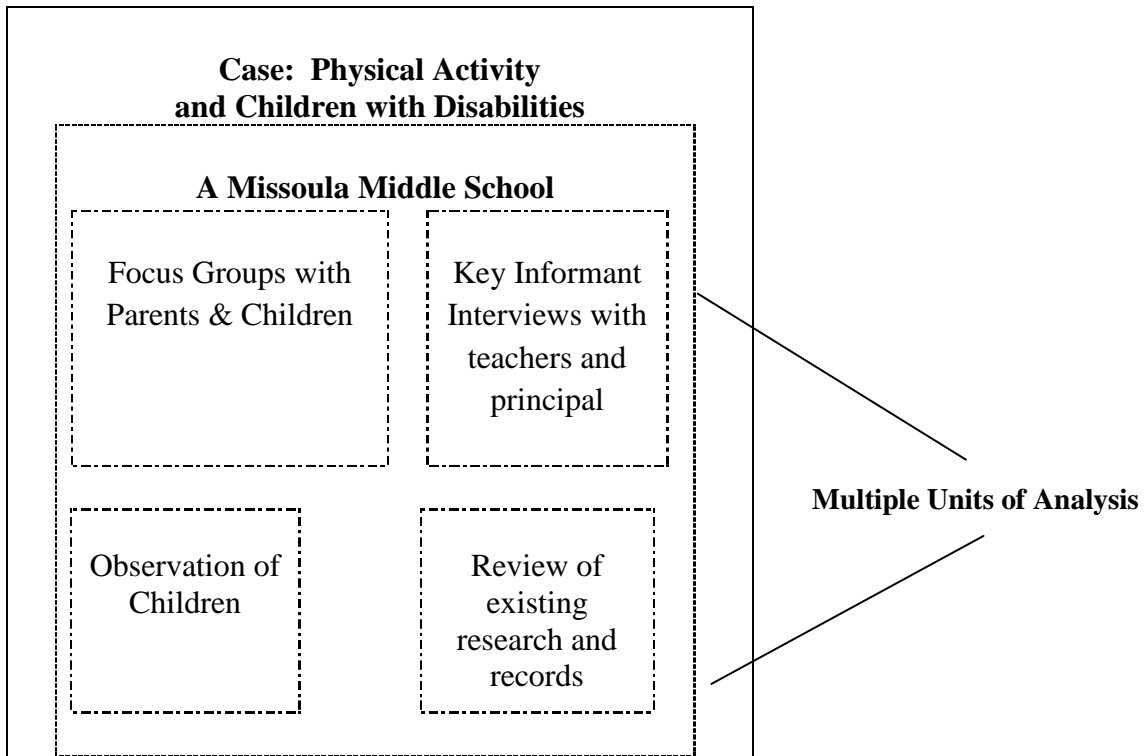
#### **Study Design**

This study utilized a qualitative case study research design. The case study approach is used to identify knowledge about individual, group, organizational, social, political and related phenomena. It is a common research methodology in community planning that is used to understand complex social occurrences (Yin, 2003). As defined by Yin (2003), a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context (p. 13). In this study, the phenomenon being investigated is physical activity among disabled middle school children. The real-life context consists of the public school setting. Multiple sources of information are used in case studies, including observations, interviews, audio-visual materials, document and reports. The case being studied is bounded by place and time and involves situating the case within its setting, which may be a physical or social setting (Creswell, 1998, p. 61). Hence, the case study is an all-encompassing method, covering the logic of research design, data collection methods, and specific approaches to data analysis (Yin, 2003).

This case study is an exploratory, embedded single-case design. Multiple sources of data were used to explore the issues surrounding physical activity for children with disabilities. Table 2.0 below depicts Yin’s embedded, single-case design.



**Table 4.0: Modified Embedded, Single-Case Design (Yin, 2003)**



**Description of Target Population**

The population for this case study consisted of parents/guardians, teachers, middle school children, and the principal at a Title 1 middle school in Missoula, MT. All parents/guardians of a child with a disability who had an invitation to participate in the “*I can do it you do it*” program implemented by the Rural Institute were invited to volunteer for a focus group. Teachers who had a child with a disability in their classroom were invited to participate in a short interview. The middle school principal was asked to volunteer for an in-depth interview. And finally, a convenience sample of children with disabilities enrolled in the Life Skills program at the selected Missoula middle school were observed in the course of the school day during scheduled physical activity times.

## **PROCEDURES**

### **Selection of Sample**

#### *Primary Data/Sample Selection:*

Selection of Parents: A list of students with physical disabilities was requested from the director of The University of Montana School of Physical Therapy study on *Physical activity among Students with Disabilities in Missoula County Public Schools* and the *I can do it, you can do it* program sponsored by the Rural Institute on Disabilities.

Selection of Children: A list of all students with disabilities at the middle school who were involved in the study *Physical activity among Students with Disabilities in Missoula County Public Schools* & the *I can do it, you can do it* program was provided by the project director. Informed consent and parental consent forms were sent to all parents with children enrolled in the programs. Parents were asked to provide written consent for their child to be observed by a research assistant during school operating hours at a time the child was engaged in physical

activity. This time was determined to be during recess or during a scheduled physical activity class. The data collection methods for the selection of parents and teachers can be found below in table 5.0 below.

Table 5.0: Parent and child focus group data collection methods

Parent Focus Group	Child Focus Group
<p>Step 1:</p> <p>A list of parental information for all disabled youth enrolled in The University of Montana School of Physical Therapy study on <i>Physical Activity among Children with Disabilities in Missoula County Public Schools &amp; I can do it, you can do it</i> project from the Rural Institute at a Missoula middle school were made available to the research assistant.</p>	<p>Step 1:</p> <p>A list of children participating in The University of Montana School of Physical Therapy study on <i>Physical Activity among Children with Disabilities in Missoula County Public Schools &amp; I can do it, you can do it</i> project from the Rural Institute at a Missoula middle school were made available to the research assistant.</p>
<p>Step 2:</p> <p>Parents were sent a packet with an invitation to a focus group regarding the activity levels of their child scheduled to occur ten days after receiving their invitation at the Missoula middle school library. The packet included parental consent and permission forms for themselves and their child’s participation in the scheduled focus group.</p>	<p>Step 2:</p> <p>Parents of children who were participating or who were invited to participate in <i>I can do it, you can do it</i> were asked to sign an assent form for their child to participate in a brief, 15 minute focus group.</p>
<p>Step 3:</p> <p>One focus group time was established for all parents to participate in. The researcher recorded all communication between the interviewer and the group. Participation prizes of \$20 gift cards to Wal-Mart, pizza, fruit, &amp; refreshments were available to all participants.</p>	<p>Step 3:</p> <p>One focus group time was established for all participants to participate in during school hours. The Missoula middle school’s teacher was contacted for a day and time that would work for the focus group to occur.</p>
<p>Step 4:</p> <p>Qualitative face-to-face interviews were conducted with any parent(s) that were not available to participate in the scheduled focus group. Food &amp; refreshments were not provided; however, the \$20 gift card to Wal-Mart was made available.</p>	

Selection of Teachers: All teachers with a disabled student in their classroom were contacted in person and asked to participate in a brief interview. The interviews occurred in a private setting within the school at a convenient time for the teacher - immediately after students were dismissed for the day, or while students were engaged at recess or music class, etc.

Selection of Principal: The principal at the selected Missoula middle school was contacted via telephone and asked to participate in an interview. The interview occurred at a convenient time for the principal during school hours. The interview process was fairly in-depth; however, did not last more than one hour. The primary data collection process for the principal and teachers followed the format in table 6.0 below.

Table 6.0: Principal and teacher interview data collection methods

Interview: Teachers	Interview: Principal
<p>Step 1:</p> <p>A list of middle school teachers was obtained from the director of The University of Montana School of Physical Therapy study on <i>Physical Activity among Children with Disabilities in Missoula County Public Schools &amp; I can do it, you can do it</i> project from the Rural Institute</p>	<p>Step 1:</p> <p>Contact information for the principal was made available from the University of Montana School of Physical Therapy study on Physical Activity among Children with Disabilities in <i>Missoula County Public School student's</i> project director.</p>
<p>Step 2:</p> <p>Teachers were approached in their classroom &amp; via telephone during school hours and asked for 30 minutes of available, interview time.</p>	<p>Step 2:</p> <p>The principal was contacted during school hours and asked for 60 minutes maximum of available, interview time.</p>
<p>Step 3:</p> <p>The interviewer recorded all communication between herself and the teacher.</p>	<p>Step 3:</p> <p>The interviewer recorded all communication between herself and the principal</p>

### *Secondary Data/Sample Selection:*

Secondary data was collected from three different existing sources:

1. Data from The University of Montana School of Physical Therapy study “Physical Activity among Disabled Students in Missoula County Public Schools” was used to establish baseline information on the physical activity levels of disabled middle school children. This data described the current physical activity levels of disabled youth at A Missoula middle school as measured by five days of Accelerometer data and answers from an activity attitudes questionnaire.

2. Information from The University of Montana Study “Physical Activity Patterns in Grades 2-12 in a Rural Western Montana Town (2008),” was used to compare Accelerometer data between middle school students without disabilities and disabled students. These studies provided descriptive baseline data on physical activity patterns for 324 randomly selected Missoula County Public School students during a five day collection period. A descriptive data questionnaire was also used to gather demographic information such as age, gender, grade, and school the student attended.

3. Information about local programs that encourage physical activity was collected via online data sources and through a review of previous unpublished research related to physical activity conducted by researchers at The University of Montana

### **Instrumentation**

Interview and focus group questions were developed based on the four main components of the Health Belief Model. Each question was designed to provide answers

to one of five research questions. The field observation instrument was an adaptation of an existing instrument. The final draft of the instrument included a randomly assigned child observation code, classroom instructor, date of observation, activity being performed, level of participation scale (1-5, 1=high intensity & 5 = low level intensity), outside weather conditions, & space for any additional comments.

*Primary Data:*

- Teacher Interviews Questions: See appendix A
- Principal Interview Questions: See appendix B
- Parent Focus Groups Questions: See appendix C
- Child Interview Questions: See appendix D
- Field Observation Checklist: See appendix E
- Contact Summary Sheet: See appendix F
- Parent Focus Group Letter: See appendix G
- Parent Information and Consent Form: See appendix H
- Focus Group Parent Permission Form: See appendix I
- Minor Assent Form: See appendix J

## **Data Collection**

*Primary Data Collection:*

The individual conducting all of the interviews, focus groups, and secondary data collection for this study was a female graduate student in the Health and Human Performance Department at The University of Montana. She has a degree emphasis in Health Promotion and used her educational background to guide the qualitative case study design of the project. She was responsible for acknowledging biases, conducting interviews, facilitating focus groups, compiling and analyzing data, and organizing the results. The interviewer worked with developmentally delayed and physically disabled youth in the past, and had previous education in physical activity at the college and



graduate level. She had a strong interest in serving disabled youth and a desire to help alleviate some of their barriers to a healthy lifestyle. The interviewer openly acknowledged that her views, values, and biases about disabled youth's physical activity levels contributed to the interpretation of the information being reviewed and presented in this study.

a. *Parent Focus Group and Interviews:* Parents of children with disabilities were contacted via letter ten days prior to the scheduled focus group. The letter explained the purpose of the focus groups, stressed the importance of their participation, and provided the research assistant's contact information. The focus group was conducted on a Thursday evening at the Missoula middle school library. The time and location were established with the help of the Missoula middle school principal. The research assistant acted as the focus group facilitator and voice recorded all communication during the meeting. Following the focus group all information was transcribed. Parents who were unable to meet during the established focus group time were encouraged to contact the research assistant for an alternate meeting. Qualitative, face-to-face interviews were conducted with parents who were unavailable during the set focus group time.

b. *Child Interviews:* Children enrolled in The University of Montana School of Physical Therapy study on *Physical Activity among Children with Disabilities in Missoula County Public Schools* & the *I can do it, you can do it* project from the Rural Institute were interviewed for approximately 15 minutes in their classroom. Interview questions were asked orally to the students, and were not voice recorded.

c. *Teacher Interviews:* Teachers were interviewed for approximately 30 minutes in their classroom during their prep period or school day break per their convenience.

Interview questions were provided to teachers one week prior to our meeting and all meetings were voice recorded. Voice recordings from the interviews were transcribed.

d. *Principal*: The Principal was interviewed for approximately 45 minutes during the school day. Interview questions were provided one week prior to the meeting via email. The entire interview was audio recorded and transcribed.

e. *Observation of Children*: All children participating in the study were observed by the research assistant during their one scheduled recess at lunchtime. The research assistant used an observation check off sheet (Appendix D) to report physical activity levels of identified children while on the playground. The observation sheet was included in the consent form; however, children were not contacted or approached during any of the observations.

Table 7.0 below visually depicts how the data collection methods of primary and secondary data were used to answer each of the three proposed research questions.

Table 7.0: Data Collection Method

RESEARCH QUESTIONS	DATA COLLECTION METHOD:
<p>1. What are the existing levels of physical activity for middle school aged children with a disability at a specific Missoula middle school?</p>	<p><u>Secondary Data:</u> Data from the University of Montana School of Physical Therapy study <i>Physical Activity Among Disabled Students in Missoula County Public School</i> was used to depict the activity levels of children with a disability grades 6-8 in Missoula, Montana.</p>
<p>2. What are the existing physical activity opportunities for disabled youth at a specific Missoula middle school middle school?</p>	<p><u>Secondary Data:</u> Research related to local programs available for disabled youth was conducted. Programs that meet the needs and accessibility of the target population were noted.</p> <p>Primary Data: Perceptions of parents, teachers, and the principal regarding available opportunities were elicited and recorded.</p> <p>A playground observation of all <i>I can do it you can do it</i> &amp; University of Montana School of Physical Therapy study <i>Physical Activity Among Disabled Students in Missoula County Public School</i> was also included in the primary data collection phase of the target population.</p>
<p>3. What are key informants beliefs about physical activity for children with disabilities?</p> <ul style="list-style-type: none"> <li>• What are key informants perceptions regarding the health effects of inactivity?</li> <li>• What are key informants perceptions regarding the health benefits of physical activity for children?</li> <li>• What are key informants perceptions of the challenges or barriers to increased levels of physical activity?</li> </ul>	<p><u>Primary Data:</u> A focus group and interview process were conducted to identify the current perceptions of parents, teachers, children &amp; principal regarding appropriate physical activity.</p>

### *Qualitative Analysis:*

Immediately after each interview and focus group, the research assistant reviewed all notes and tape recordings. A contact summary sheet was completed that included general information about the interviewee, interview location, time, length of meeting, and any other notable or unusual occurrences (see Appendix E). Each interview and focus group was transcribed in its entirety and the transcriptions were compared against the notes taken during the meetings to verify accuracy. Following transcription all tapes were destroyed and no reference to the interviewed subject alluding to their identity was available.

Ulin, Robinson and Tolley (2005) suggest a five step process in the analysis of qualitative data. That process was used in the analysis of data for this study. The first step is called “Reading: Developing an Intimate Relationship with the Data.” This step involves reading and rereading each set of transcripts until the researcher is intimately familiar with the content. During this process emergent themes and tentative explanations may be identified. These tentative themes and explanations will be recorded directly in the margins of the transcripts. As each transcript was examined, emergent themes were expanded upon, revised or examined for the presence of patterns within the theme.

The second step identified by Ulin, et. al. (2005) is “Coding: Identifying the Emerging Themes.” In this step, segments of the interviews were color coded according to specific emerging themes. Color coding allowed the research assistant to identify multiple segments of qualitative data that related to a specific theme or themes. These

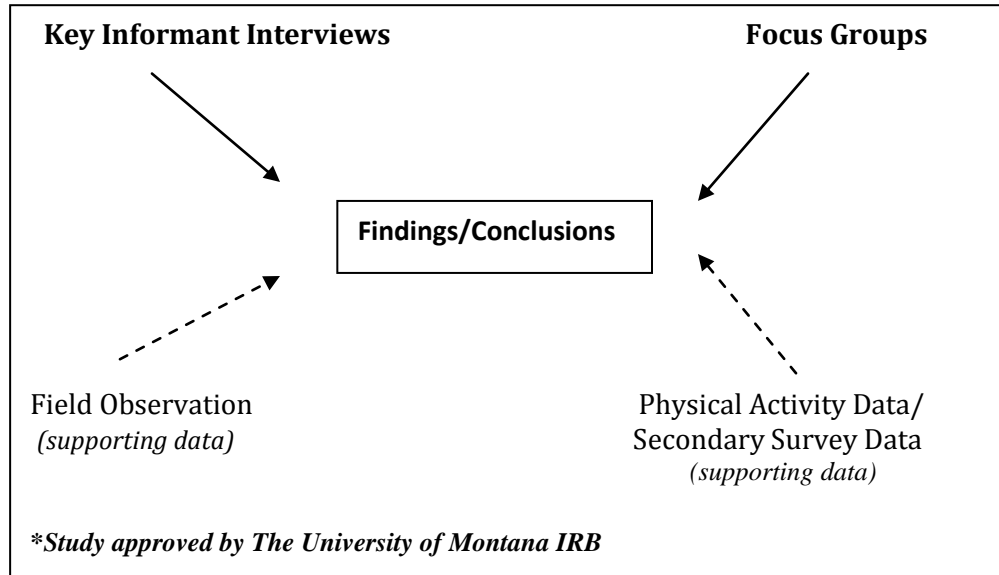
segments of data were then cut and sorted into central themes. The themes were then reviewed and reorganize as necessary.

The third step in the data analysis process is “Displaying the Data.” Displaying data means laying it out or taking an inventory of what you know related to the themes identified in the second step. In this step each theme was examined independently and subthemes were identified. Then the data was examined again for the presence of evidence that supported each subtheme.

The fourth step involves “Data Reduction: Getting the Big Picture.” In this phase, the researcher “steps back from the data,” in an effort to get an overall sense of the data and distinguish central and secondary themes. A visual approach at this point in data analysis was helpful. One such visual approach to data reduction was used to develop matrices or diagrams for each theme that has remained central to the study. The research assistant then attempts to explore how themes connect, overlap, or contradict each other resulting in separation of the essential from the non-essential.

The final step in the process is the “Interpretation” phase. Interpretation is the act of identifying and explaining the data’s core meaning. The main task is to search for relationships among themes or concepts identified from the analysis. In this mixed methods design study, qualitative data from the interviews and focus groups were considered the primary or most important data in the study and were analyzed first. Qualitative data from the field observation and secondary data sources were analyzed descriptively and were used to support, fill in gaps, or help explain the results of the qualitative analysis. Table 8.0 diagrams this process of a convergence of evidence.

Table 8.0: Convergence of Evidence (see diagram below).



## CHAPTER IV

### RESULTS OF THE STUDY

The purpose of the qualitative case study was to provide a more accurate picture of physical activity levels of disabled, Missoula middle school children, and to describe the challenges and barriers related to increased physical activity that they face. More specifically, this study sought to understand the daily trials and tribulations disabled middle school students' face when attempting to participate in physical activity during and after school. The results of this study were determined based on the qualitative case study design outlined in Chapter III. All participant names and descriptors in each interview were replaced with identifier pseudonyms to ensure the confidentiality of the given statements and integrity of the interviewed individual.

#### **Results - Secondary Data**

Secondary data sources provided information regarding the first two research questions. Accelerometer data from two UM studies at the middle school provided information to answer the question, "What are the existing levels of physical activity for middle school aged children with a disability?" A review of existing activity programs provided an answer to the second question, "What are the existing physical activity opportunities for middle school children with a disability?"

#### *Accelerometer Results:*

#### *Physical activity among disabled students in Missoula County Public Schools*

Eight children, ages 12 to 15 in grades sixth through eighth at C.S. Porter Middle School enrolled in the Life Skills program participated in a 5 day, continuous accelerometer study. The days of participation included three school days (week days)

and two weekend days. Each child who volunteered to participate had an accelerometer attached to their non-dominant wrist and were instructed to leave it on for five days.

There were no limitations placed on their involvement in physical activity, for example, the accelerometer is even water proof.

All collected accelerometer information was converted into Activity Energy Expenditure (AEE) reported in kcal. AEE is calculated using a combination of age, gender, height, weight and an accelerometer location specific regression equation. The equation was developed by the accelerometer manufacturer and provided to the researchers for their data collection. The pre-established definition for light to moderate physical activity was 0.031 kilo calories per minute per kilogram (kcal/min/kg). Moderate to vigorous physical activity was defined as 0.083 kcals/min/kg (Heil, D., 2006). Table 9.0 below lists the demographic information for all study participants at baseline.

Table 9.0: Demographic information for the study participants at baseline:

Participant	Gender	Age	Height	Weight	Gait
1	F	12	1.42	27.67	Normal
2	F	13	1.68	55.79	Normal
3	F	15	1.45	34.02	Normal
4	M	12	1.45	36.29	Normal
5	M	12	1.61	65.32	Hemi
6	M	12	1.61	63.05	Hemi
7	M	13	1.80	99.79	Normal
8	M	13	1.55	66.2	Normal
Average/STDev		12.7 ± 1.1	1.57 ± 0.14	55.01 ± 25.08	

Following five days of accelerometer data collection, the activity energy expenditure AEE for all participants was separated into weekdays (three days) and weekend (two days). The weekend AEE average was 821.3 with a standard deviation of



530.4. Furthermore, the lowest rate of participation in physical activity during the weekend for participants was calculated as 495.5 and the greatest level of expenditure for physical activity was 1957.5. The weekday AEE was averaged to be 1077.7 with a standard deviation of 743.7. The highest level of reported activity during the week day was 2285.7 with the lowest totaling 673.3. Overall there was a higher AEE rate of activity during the week/school days than over the weekend. Table 10.0 below lists the collected accelerometer data for average AEE of disabled students.

Table 10.0: Collected accelerometer data - disabled students: (N = 8)

	Weekend AEE	Weekday AEE	High/Low Weekend AEE	High/Low Weekday AEE
Average	821.3	1077.7	1957.5/495.5	2285.7/673.3
Standard Deviation	530.4	743.7	NA	NA

\* AEE – Activity Energy Expenditure

All of the participating children, by definition of the ACSM guidelines, were adequately meeting the predetermined rate of physical activity for five or more days per week; however, the accelerometer data suggests that most activities were being performed in bouts of five minutes or less with a majority totaling less than two minutes. Per the ACSM guidelines, at least ten minutes in duration is optimal for achieving a moderate level of physical activity. Table 11.0 below lists the day and average number of minutes of physical activity for disabled students.

Table 11.0: Day and average number of minutes of physical activity – disabled students:

(N = 8)

	Weekend Mod/Vig	Weekday Mod/Vig	High/Low Weekend Mod/Vig	High/Low Weekday Mod/Vig
Average Minutes	119.1	154.0	208/54	227/82
Standard Deviation	63.2	55.8	NA	NA

\* Cumulative Minutes of Moderate and Vigorous physical activity

*Physical Activity Patterns in Grades 2-12 in a Rural Western Montana Town*

The data collected during the 2007-2008 University of Montana Study “Physical Activity Patterns in Grades 2-12 in a Rural Western Montana Town” showed that most participants were following the national trend of physical inactivity where the frequency and level of daily physical activity decreases with age (Mohar, L, Gaskill, S., Cox, C., Miller, A., 2007). That being said, elementary aged participants (grades 2-5) were the most active among all participants. When separated by grade there was a significant drop in students meeting recommendations for physical activity among middle and high school in comparison to elementary school. Approximately 53.3% of all participants, grades 2-12, did not meet the recommended 60 minutes of moderate to vigorous physical activity recommendation for health in bouts of 10 minutes.

Lunch time recess, PE, and school sports were identified as the current school time for physical activity to occur during the school day. Levels of physical activity among all age groups, grades 2-12, while at school were low for both male and female participants. During lunch/recess, PE, and school sports the reported rate of activity was lower in comparison to recommendation for 30 minutes of moderate to vigorous physical activity. Ninety-eight percent students participated in recess/lunch during a typical school

week, whereas 84% were present for PE class and 22% were involved in sport. Table 12.0 below lists the collected average AEE and standard deviations of all students.

Table 12.0: Collected accelerometer data – all students: (N = 73)

Age=12 & 13	Weekend AEE	Weekday AEE	High/Low Weekend AEE	High/Low Weekday AEE
Average	884.2	883.9	1826.0/302.5	1597.2/320.0
Standard Deviation	366.8	298.0	NA	NA

Table 13.0 below lists the collected day and minutes of physical activity and standard deviation for all students.

Table 13.0: Day and number of minutes of physical activity – all students: (N = 73)

Age = 12 & 13	Weekend	Weekday AEE	High/Low Weekend AEE	High/Low Weekday AEE
Ave. minutes	116.1	119.9	339/3	320.6/6.3
Standard Deviation	87.7	66.2	NA	NA

A comparison of data from both of The University of Montana studies revealed that disabled students had a higher rate of physical activity during the weekdays (1077.7) than their non-disabled peers (883.9); however, non-disabled students were more physically active during the weekends (884.2) than their disabled peers (821.3). The actual number of minutes spent doing moderate to vigorous physical activity was about equal during the weekend between the two groups with disabled students reported an average of 119 minutes of physical activity and non-disabled students reported 116 minutes. During the weekday, the disabled group of students was much higher with a mean of 154 minutes, and non-disabled students with a mean of 119 minutes. Table 14.0

below displays a comparison of children with a disability and children without a disability reported average minutes of physical activity during the week and weekends.

Table 14.0: Comparison of children with a disability and children without a disability reported average minutes of physical activity during the week and weekends.

	Weekend Moderate/Vigorous		Weekday Moderate/Vigorous	
	Children with a disability	Children without a disability	Children with a disability	Children without a disability
Average. Minutes.	119.1	116.0	154.0	119.9
Standard Deviation	63.2	87.7	55.8	66.2

*Program Review Results:*

*Existing physical activity opportunities for middle school children*

Youth in Missoula, Montana have access to several programs that facilitate physical activity. There are a wide variety of program types and each has individual traits that can appeal to every age, socioeconomic status, and physical ability. More specifically, the programs described in this case study are Flagship, the Boys and Girls Club of Missoula, the Missoula Family YMCA, Montana Action for Healthy Kids, and the Special Olympics. All of the listed programs are available to Missoula middle school youth and each has a unique attribute.

The mission statement of Flagship Missoula is “to enhance the social, academic and cultural achievement of Missoula’s young people by creating opportunities for skill development, both in and out of school” (Flagship Program, 10/19/2008). All students at A Missoula middle school may participate in the Flagship program free of charge and are provided with food and transportation. Examples of Flagship activities include tutoring, mentoring, skill development classes, sports, arts classes, conflict resolution

groups, youth theater, job shadowing, community volunteer service and service learning projects. Flagship programs are designed to aid at risk and low income youth. \$50,000 is spent annually to pay Flagship Youth Development coordinator, transportation, supplies and food.

The mission statement of the Missoula area Boys and Girls Club is "To inspire and enable all young people, especially those who need us most, to realize their full potential as productive, responsible and caring citizens" (BCG Missoula, 10/19/2008). Programs offered at the Missoula area Boys and Girls Club include after school, weekend and summer programs for low income, Missoula youth ages 6-18. The club has been present in the Missoula community for 11 years and strives to create an active, safe, fun environment for all attendees.

The Missoula area YMCA offers a wide array of programs and is committed to making their facilities available to all families regardless of their financial situation. Last year, 2007, the Missoula family YMCA gave out over \$300,000 in scholarship money. In conjunction their mission statements declares a "dedicated to building healthy spirit, mind and body for each person it serves" (Missoula Family YMCA, 10/19/2008). From after school care, to aquatics and special Olympic events, the YMCA is committed to helping make youth physically active.

Montana Action for Healthy Kids (MTAFHK) is a product of the Eat Right Montana Coalition and was adopted by the Department of Health and Human Services (DPHHS) State team in September, 2006. The Eat Right Montana Coalition promotes healthy eating and active lifestyles for all Montana residents (Montana Action for Healthy Kids Public website, 10/20/2008). Their mission of MTAFHK is "a dedication to

improving the health and wellness of our children in schools and communities through nutrition & physical activity where children learn, participate in, and enjoy health lifestyle behaviors” (Montana Action for Healthy Kids Public website, 10/20/2008). In June 2007, the Montana Action for Healthy Kids identified three main goals for achieving their mission. The 3 main goals are as follows:

- Montana Goal 1: Promote and support age-appropriate and culturally sensitive instruction in health education and physical education that help students develop the knowledge, attitudes, skills, and behaviors to adopt, maintain and enjoy healthy eating habits and a physically active lifestyle.
- Montana Goal 2: Promote and support policies ensuring that all foods and beverages available on school campuses and at school events contribute toward eating patterns that are consistent with the Dietary Guidelines for Americans.
- Montana Goal 3: Encourage the use of school facilities for physical activity programs offered by the school and/or community based organization outside of school hours.

MTAFHK provides a detailed framework of action that directly impacts the health benefit of Montana and physical activity opportunities of Montana youth (Montana Action for Healthy Kids Public website, 10/20/2008).

The Montana Special Olympics is a nonprofit physical activity option for intellectually disabled youth. Through the Special Olympics program intellectually disabled youth are given the opportunity to compete in several different athletic competitions and an ability to increase their physical fitness. The mission of the Special Olympics is “to provide year-round sports training and athletic competition in a variety of

Olympic-type sports for children and adults with intellectual disabilities\*, giving them continuing opportunities to develop physical fitness, demonstrate courage, experience joy and participate in a sharing of gifts, skills and friendship with their families, other Special Olympics athletes and the community” (Montana Special Olympics Public website, 10/21/2008).

### **Results - Primary Data**

Primary data sources provided information regarding the third research question. The third research question dealt with study participants’ beliefs about physical activity. Sub-questions were based on the Health Belief Model and asked participants about their perceptions regarding the health effects of inactivity, the benefits of physical activity, and their perceptions of challenges and barriers to increasing physical activity among disabled middle-school children.

### **Description of the Participants**

#### *Students:*

There were eight students who were recruited for this project. Five out of the eight participated in the *I can do it, you can do it* program; all eight participated in The University of Montana School of Physical Therapy study on *Physical Activity among Children with Disabilities in Missoula County Public Schools*. The researcher contacted all of the students regardless of enrollment in the offered programs. Participants ranged in age range from 11 to 15. Three females and five males participated in the study. The disabilities represented in this group were: cognitive delay, autism, cerebral palsy, bipolar disorder, mood disorder, asthma, speech and language delay, and attention deficit

hyperactivity disorder (ADHD). All of the participants had one or more of the listed conditions.

*Parents:*

Five parents participated in either a focus group interview or a one-on-one interview. Participants in the parent focus group included two females, one with a 6<sup>th</sup> grade child, and one with an 8<sup>th</sup> grade child. At the focus group, one parent brought her child with her and the researcher was able to ask the child the focus group questions. Both children of the two focus group attendees had developmental cognitive delay, and were enrolled in the Life Skills teaching program at A specific Missoula middle school. The focus group took place on a Thursday evening at 5:45 PM in the Middle school library. Pizza, fruit, cookies, beverages, and a \$20 gift card to Wal-Mart were provided to both participants. The total length in time for the focus group was 65 minutes; however, not all of this time was logged interview time. The first seven minutes were used for introductions, questions, and for each participant to get something to eat and/or drink.

Additionally, three other, individual, face-to-face qualitative interviews occurred with female parents of disabled students at The Missoula middle school who could not make the focus group. Two interviews occurred off school premises at Hastings coffee shop, and one was completed at school directly following a Thursday early release. The average time spent with each interviewee was 56 minutes, with the longest interview lasting 62 minutes and the shortest being 48 minutes in duration. During these meetings, two out of three parents brought their child along and allowed the researcher to ask the



child focus group questions individually. Each child interview took approximately ten minutes to complete.

*Teachers:*

Participants in the teacher interviews portion of the study included 1 male interviewee, and three female interviewees. Each grade (6<sup>th</sup>, 7<sup>th</sup>, or 8<sup>th</sup>) had a teacher representative. All group members were Caucasian, with an average age of 38 years, and each had a minimum of four years of teaching experience.

All participants had daily contact with at least one disabled student and were involved in their daily school setting physical activity. Three out of the four teachers were PE teachers, and one was the Life Skills teacher. Access to each teacher was established as a result of referrals from the previous teacher interviewee. This allowed for easy access to the key informant population. The only common theme among the demographic information generated from the teachers and principal was that they all had contact with disabled students and parents of disabled students at the middle school.

All interviews with teachers were conducted on site at The Missoula middle school. All but one occurred in the teacher's classroom. The average length of teacher interviews was 21 minutes, with the longest being 38 minutes and the shortest being 10 minutes. The researcher attributes the quickness of the ten minute interview to the interviewee's preparedness. Each participant was sent the questions one week in advance; however, only one participant generated answers to each question prior to the interview.

*Principal:*

The principal was interviewed in her office during school hours. The interview lasted 28 minutes, and the researcher attributes the quickness of the interview to the interviewee's preparedness. She was provided with the interview questions one week prior to the meeting and had answers prepared for each question. The interviewer did contribute a few probing questions to have the principal expand on her answers to questions.

### **Emerging Themes**

Primary data gathered through focus groups, interviews and observation provided answers to the third research question regarding study participants' perceptions about physical activity and disabled middle school children. Themes are organized according to the four beliefs described in the Health Belief Model. The beliefs include perceived susceptibility, perceived severity, perceived benefits, and perceived barriers.

*Belief #1: Participants perceptions regarding the health effects of inactivity (susceptibility and seriousness).*

Only two themes arose from examining the data regarding the health effects of inactivity. Qualitative, face-to-face interviews with the school principle, teachers, and parents revealed a common concern about obesity as the greatest health effect of inactivity. Participants also voiced their concern that an inactive childhood would lead to an inactive lifestyle as an adult.

#### Theme #1: Fear of children becoming obese.

Parents and teachers were equally concerned with weight gain and obesity for their students and child as a long-term health effect.

Weight is something that her doctor has always addressed as a potential issue not only now, but as she grows in an adult. It concerns me, but I do not know how to

help her. How do you change a child's interest level in a something they have no interest in? My fear is that she will continue to gain weight and have life-long complications as a result. Her doctor has given me a lot of information on the long term effects of obesity, and although she isn't clinically there yet, as a parent, it is a great concern.

~ *Shelly, parent focus group participant*

I would definitely say more risk for obesity for this group as a long-term health risk outcome.

~ *Jenni, school staff interview participant*

We worry about his weight. That is something that is always going to be a concern of mine and I would like to see him be able to lose weight with age instead of follow the predicted curve of gaining weight and eventually becoming obese. The health effects of obesity combined with his preexisting conditions would provide a low quality of life for him as an adult.

~ *Laurel, parent focus group participant*

Long-term, of course we are going to see weight gain and eventually obesity and the health risks associated such as obesity and heart disease.

~ *Rachel, school staff interview participant*

So many of my former students who are now high school age are very overweight and extremely sedentary. Looking back, they were no different when they were at The Missoula middle school except for the fact they were younger. I feel their long-term outlook will include all health factors associated with inactivity and obesity.

~ *Jane, school staff interview participant*

For a person of this lifestyle, obesity is almost a given.

~ *Shannon, school staff interview participant*

I do worry about weight, but more long-term effects of being over-weight like obesity and type II diabetes are more concerning to me.

~ *Lindsay, parent focus group participant*

### Theme #2: Inactivity in adulthood.

Furthermore, many believed that an inactive childhood leads to an inactive adulthood. Sedentary lifestyle was viewed as one of the top contributors to obesity, and was a concern of the interview and focus group participants.

I also put health, long term health effects because you will not be active as an adult if you're not active now. So many kids grow up to be sedentary, obese adults because they never had activity apart of their lives as a child. Why would they start exercising at 30?

~ *Jim, school staff interview participant*

More interesting to note is the reasons behind this inactivity; for most of my present and past students being active was not something they ever experienced outside of the school setting.

~ *Rachel, school staff interview participant*

We aren't very active parents so that has been what was nice about the *I can do it, you can do it* program. Having a person who can help him experience different activities has really been great.

~ *Shelly, parent focus group participant*

Most aren't in an environment, i.e. home life that supports or encourages physical activity, so I would say lack of skill set as to how to be physically active. This piece of encouragement is missing at home for most in my experience.

~ *Jenni, school staff interview participant*

Families of these kids don't go to the YMCA, don't hike the 'M', most just aren't being accessed. Physical activity is truly like a deck of cards. If you're missing one card, the whole works is going to collapse down around you. When children are inactive or leading sedentary lifestyles, they soon become inactive adolescents, then teenagers, and finally sedentary adults who have never learned to exercise. Why start now?

~ *Shannon, school staff interview participant*

*Belief #2: Participants perceptions regarding the benefits of activity.*

Although it was clear that participants were advocates of physical activity for children with a disability, only two themes emerged from an examination of answers to the question regarding benefits. The development of social skills was an important benefit of participating in group activities, while increased attention span and a higher level of productivity were associated with all physical activity.

### Theme #1: Learning social skills.

Some of the participants stated that social awareness and the development of social skills was an immediate short-term benefit of youth involvement in physical activity.

We might of hinted a little bit at this, but I just put social awareness because they seem like they are a separate group so I think their confidence may suffer.

*~ Jim, school staff interview participant*

Less flexibility, less social awareness, like when they're not involved in sports, not athletics, just sports, they just don't understand something like, they aren't mad at me they are just trying to help me.

*~ Shannon, school staff interview participant*

To date I haven't really found any form of physical activity that fits with her.

*~ Lindsay, parent focus group participant*

### Theme #2: Better attention span and more productive

Classroom and after school behavior was one of the addressed benefits of physical activity. When youth are physically active they are burning energy and will be more productive and responsive in and outside of school.

Short term effects with the kids who don't get a lot of physical activity just based on observation is their attention span seems to be less, less social acceptance, less social awareness, less energy, and sometimes they get more agitated in the respect that they get in trouble more, because they are not in a relaxed state and haven't burned off enough energy.

*~ Jenni, school staff interview participant*

*Belief #3: Participants perceptions regarding the challenges or barriers to increasing physical activity.*

The largest number of responses was generated by participants when they were asked about the barriers to increasing physical activity. Most participants identified five major barriers as follows: lack of playground equipment at the school, their child's lack of interest in physical activity, parents not being physically active with their child, lack of communication between the school staff and parents, and parent and school personnel's contrasting perceptions of children's level of physical activity.

Theme #1: Lack of playground equipment.

*Lack of playground equipment*

A majority of interview and focus group participants stated that their lack of playground equipment hinders the physical activity of all students, but especially the disabled, and in some cases the cognitive delayed individuals. In response to the questions "what resources are Missing at your school missing to increase physical activity" and "what ideas do you have for increasing physical activity" their answers unanimously pointed to a need for playground equipment.

As far as increasing the physically activity of disabled children, I think we do a pretty good job of balancing this and offering them physical activity. But again, the missing piece is no playground equipment. Having that would really help increase their activity levels.

*~ Jenni, school staff interview participant*

They do a pretty good job, but having recess equipment would help. Swing sets, tether balls, and overall more equipment out there would be helpful for him. His special needs teacher has some equipment like balls that they can check out, but I think it would be most beneficial to have the equipment right out there.

*~ Laurel, parent focus group participant*

You may of noticed, however, that there was no playground equipment. Even just swings would be a nice addition.

*~ Shannon, school staff interview participant*

Equipment is definitely a barrier and the adaptive equipment is lacking. I would love to have a light up textured ball to work with the disabled students to help increase their skill development, but we just don't have that.

*~ Jim, school staff interview participant*

Unfortunately, most kids are just hanging around at this age, but I think she would really like to swing. Her elementary school had swings and she loved them. I think that would be one way of getting her more active if there was equipment out there for her to play on.

*~ Sue, parent focus group participant*

My class that I teach has limited financial flexibility as far as what kinds of equipment that is specially developed for disabled students. It would be great to have a few more adaptive equipment pieces.

*~ Rachel, school staff interview participant*

I think that better access to real playground equipment would really help him. As far as age, even though he is in 6<sup>th</sup> grade he has the maturity of a second grader, so swings, toys, etc., would really benefit him.

*~ Lisa, parent focus group participant*

Equipment is definitely a barrier and the adaptive equipment is lacking.

*~ Jane, school staff interview participant*

Greater resources/access to an adaptive PE teacher and equipment may help.

*~ Jim, school staff interview participant*

## Theme #2: Child's lack of interest in physical activity..

Most of the parents felt that their child's limited activity levels could be explained through their lack of motivation to be active. More specifically, parents expressed their child, disabled or not, had an overall disinterest in physical activity and that it wasn't really a result of their current disability.

She's not super athletic, and I don't know if that has to do with some of her disability or if it's just a personal choice. She likes to read and write, but from what I can see I would personally like her to be more physically active.

*~ Shelly, parent focus group participant*

We aren't really active parents, but I know how important it is for her and her future to learn how to be active at a young age, but it just isn't a personal interest

to her. Overall, I would like to see her participate in more activities that aren't so sedentary.

~ Sue, parent focus group participant

Most days he prefers to read or play video games. He doesn't have a lot of friends in our neighborhood; as a result, I think he is less active than I would like him to be. Furthermore, he hasn't really ever excelled in one particular physical sport. We tried soccer when he was little, but developmentally he is so far behind that he could only play one year. He just seems to be happiest when he's inside.

~ Lisa, parent focus group participant

She doesn't really like to be outside that much. Although, I think it's because she doesn't really have anyone to go outside with and that she personally would rather be inside.

~ Lindsay, parent focus group participant

He does participate in taekwondo, and is there for about 2 hours, three days a week. He really enjoys this, but the rest of the week/weekend he is pretty sedentary. It appears that if he's not interested, he doesn't do it.

~ Laurel, parent focus group participant

### Theme #3: Parents are not physically active with child.

Parent and teacher participants identified that a lack of interest in physical activity by parents was a potential enabling or contributing factor to their child's lack of physical activity. Parents were very honest and open about not being the best 'role models' for physical activity, and teachers were also aware of the lack of adult modeling at home.

The families were not out walking, running, bicycling, swimming, etc. Most are at home watching movies or playing video games without an encouragement to go outside and sweat. I feel the home environment is 10 times more important for teaching physical activity, at least life-long skills for activity, than my PE class could ever be.

~ Rachel, school staff interview participant

We aren't really active parents, but I know how important it is for her and her future to learn how to be active at a young age.

~ Sue, parent focus group participant

Most aren't in an environment, i.e. home life that supports or encourages physical activity, so I would say lack of skill set as to how to be physically active. This piece of encouragement is missing at home for most in my experience.

~ Jenni, school staff interview participant



Theme #4: Lack of communication between school staff and parents.

Parents specifically expressed a need and want for more communication from the school itself. They felt their child's lack of physical activity levels could be enhanced if they were knowledgeable about what went on during the school week.

I think the middle school is good because they have an actual special needs room, but sometimes I feel a little out of the loop. It would be helpful to have a little more clear direction as to what activities they're doing outside of the special needs room.

*~ Shelly, parent focus group participant*

I know that I am just as much to blame, but I do feel that the school could do a better job of communicating to the parents about what they are going to be working on in their different classes. I know who to contact if I have questions about her home room (Life Skills) but otherwise I have no contact to any other teachers she has class from; for example, PE, band, etc. If she was having a problem I wouldn't even know who to call.

*~ Sue, parent focus group participant*

I feel lost sometimes when I need to ask a question about Timmy. He attends a few classes outside of the Life Skills room, and I know I can always call his teacher in there, but, for example, he just stopped going to band. I didn't find out until two weeks after the fact because he said something. No one phoned from the school, and I don't even know the teachers name or what the problem was as to why he was no longer welcome in band.

*~ Laurel, parent focus group participant*

It would be very helpful to get a list of all their teachers and their contact information at the start of every school year. That is an English teacher that sends home a weekly recap of what they had worked on that week; if all the teachers communicating to me that way, I would never have any questions. Plus, she has a very difficult time remembering things, so it's really hard to get any information about school activities from her.

*~ Lindsay, parent focus group participant*

My child is a 6<sup>th</sup> grader and I was shocked when I went to his parent teacher conference that, although he takes class outside of life skills, I was only talking to the life skills teacher. I would like to be able to sit down with every teacher that has contact with my child, not just his home room.

*~ Lisa, parent focus group participant*

Theme #5: Parents and school personnel's contrasting perceptions of children's level of physical activity.

In response to question one, "How does the physical activity levels of children in your class who do not have a disability compare with those who do have a physical disability," school personnel and parents perceptions of activity levels were quite different.

Teachers believed that the activity levels of disabled students were comparable to students who were not disabled

They are out on the play ground during every recess, and they are moving and playing just as much as the other students.

*~ Jenni, schools staff interview participant*

It totally depends on the kid, but we're pretty active and we move a lot while playing so based on their current activities at school in my class they aren't so different. Both populations are pretty equal.

*~ Shannon, school staff interview participant*

In our life skills class we are constantly moving. We do a lot of activities off of the school site and we typically walk there. This has proven to be an additional way to get a little more activity and to stay in the same range of all the other students.

*~ Jane, school staff interview participant*

I feel there is a difference, but not a huge, noticeable difference. I would say on most days it is pretty equal. Some will walk, some play football, basketball, Frisbee, some will play, and sometimes, at least what I've noticed with the kids with disabilities, is that they are very good friends and they'll play tag with each other.

*~ Rachel, school staff interview participant*

In contrast to school personnel's' perceptions, most of the parents interviewed, felt that their child had lower overall levels of physical activity than their non-disabled peers.

I'd say that in comparison to other kids her age at school, they are pretty low.

*~ Sue, parent focus group participant*

Occasionally I stop by school to bring Danielle lunch. On the days that I've gotten there early, it seems like she was just standing by herself.

*~ Lindsay, parent focus group participant*

I would say it's about 70% in comparison to other children her age without any physical disabilities.

*~ Shelly, parent focus group participant*

In comparison to our other three children who face no physical or cognitive adversities, her activity levels are much lower.

*~ Lisa, parent focus group participant*

#### *Observational Information*

Five students were observed on the playground during their recess time during the school day from 11:00 a.m. until 11:10 a.m. The students are on the playground for ten minutes prior to eating their lunch, five days a week. There were two boys and three girls that were observed, and on the day of observation it was cold and very windy. The two boys played four square with two other children that were not a part of the study. The previously described data collection methods stated that the research assistant would use a field observation checklist (Appendix E) to note the activity levels of the children while on their recess break. The checklist was designed to note which children were being observed on the particular day, the type of clothing they were wearing, the outside weather system for that day, what activities they were participating in, and what the perceived level of exertion was by each child's activity. Following the field observation, the only portion of the field observation checklist that was used for documentation was the portion that noted the weather, and how many children were being observed. As a result of a majority of their recess activity being overall relatively sedentary, perceived exertion was not used to measure their amount of effort.

One girl was sitting near the fence by herself during the duration of the observation. Once it was time to return to school for lunch, she had to be escorted back into school by the playground supervisor. The other two girls stood next to the playground supervisor the entire time and wanted to hug her and hold her hands.

## **CHAPTER V**

### **DISCUSSION**

This study was conducted using a descriptive case study design with the purpose of describing the physical activity levels of children with a disability at a middle school in western Montana. Both secondary and primary data sources were utilized. Secondary data sources consisted of data from two University of Montana studies focusing on physical activity among students in grades 2-12 and among students with disabilities in grades 6-8. Information from the Montana Behavioral Risk Factor Surveillance System (BRFSS) and from the Montana Youth Risk Behavior Survey (YRBS) was also used as secondary data sources in this study. Primary data sources consisted of interviews with and observations of disabled students attending a middle school in western Montana. Qualitative face to face interviews were conducted with the school principal and middle school teachers who had a disabled student in their class. Finally, a focus group and qualitative face to face interviews with parents of disabled students were conducted.

All data sources were used to generate information regarding the current physical activity levels of disabled students attending the middle school. In addition, based on the Health Belief Model, study participants were questioned regarding their beliefs about inactivity and disabled youth.

A major purpose of this study was to examine the physical activity levels of disabled students. There appears to be a widespread belief that disabled students are less physically active than their non-disabled counterparts (Murphy, N. & Carbone, P., 2008). Surprisingly, several sources of data from this study indicated that the activity levels of students with disabilities were not much different than activity levels of non-disabled students. In fact, accelerometer data gathered through two University of Montana studies

showed a slightly greater level of physical activity during the weekdays by disabled student participants in comparison to non-disabled participants (Laskin, J.2008; Mohar, L, Gaskill, S., Cox, C., Miller, A., 2007). This finding also was supported by teachers who work with disabled students and by the school principal. Interviews with all school personnel revealed a perception that disabled students demonstrate greater activity levels than their non-disabled counterparts when at school. For example, Jane, the life skills teacher reported, “In our life skills class we are constantly moving. We do a lot of activities off of the school site and we typically walk there.”

In contrast to the activity levels on weekdays, results of the UM accelerometer studies revealed higher levels of activity among non-disabled than among disabled youth on the weekend. This difference in weekday versus weekend activity might explain the perceptions of parents of disabled youth, who during their interviews, expressed concern about the low activity levels of their children. It appeared most parents were not aware of their child’s physical activities while at school. They believed that their children were as inactive at school as they were at home. They attributed the inactivity, in part, to the lack of good role models for physical activity from parents and other significant adults. Parent perceptions of low levels of activity were supported by the observational data gathered in this study where little physical activity was observed, particularly among the girls. Interviews with disabled students themselves revealed results similar to the observational data. The boys reported engaging in some physically active games, while the girls reported enjoying talking and sitting around with friends during their free time.

The discrepancy between the accelerometer data and school personnel perceptions of activity levels versus the perceptions of parents regarding activity levels of their

children with a disability may arise from parent's lack of knowledge about the activity levels of children in general. In other words, because of their child's disability, they may perceive him or her to be less active than their non-disabled peers, when in fact; the more objective measures of activity reveal that overall levels are similar for both groups in middle school.

A second purpose of this study was to investigate study participants' beliefs about physical activity. Several major themes related to beliefs about physical activity emerged from an analysis of focus group and interview data. First, parents and school personnel identified obesity as their greatest health concern in regards to the seriousness or susceptibility to a person's health as a result of physical inactivity. While obesity has been identified as a contributing factor to long term health concerns for disabled populations, such as coronary heart disease, stroke, or type II diabetes; it is not a disease condition. Parents and school personnel did not appear to distinguish between obesity and the health consequences associated with obesity.

Secondly, parents and school personnel identified two benefits of physical activity that would positively impact their child. The ability to learn social skills while participating in organized sports during or after school was mentioned by parents as a positive attribute to be physically active. Teachers and the school principal also identified improvement in a student's classroom behavior and productivity when they are physically active verse when they are physically inactive. Not only were they found to have a greater attention span in their classroom, but they also had better success when completing classroom assignments and tasks.

The greatest number of themes generated from the interviews and focus groups was in response to participant's perceptions regarding the challenges and or barriers to increased physical activity. Lack of playground equipment, child's lack of interest in physical activity, parents not being physically active with their child, a lack of communication between the school and parents, and the parents and schools contrasting perception of their child/students level of physical activity were all identified as challenges or barriers from participants. Parents indicated that the school needed to do a better job of contacting them about their child, and organizing events and/or activities during and outside of school. On the other hand, school personnel felt that parents could be more involved in the physical activity levels of their child on the weekends, and work to set a better example of how to be physically active.

#### *Opportunities for Physical Activity*

There are multiple opportunities for students to engage in programs that enhance physical activity levels. Those programs include The Boys and Girls Club, Flagship, Missoula Family YMCA, and the Special Olympics. Currently National Youth Sports Programs (NYPS) is not being offered in Missoula; however, it was an available summer physical activity day camp in prior summers. Unfortunately, most parents did not have past experience with school or community programs such as Flagship, or they were left unimpressed with the program's physical activity offerings. Overall parents were not left with a sense of increased physical activity from enrolling their child in after school programs. In contrast, school personnel felt that after school programs, particularly the Flagship Program, provided excellent opportunities for all children to become more physically active.



## **Limitations**

It is important to keep in mind several limitations when considering the conclusions drawn from this study. Perhaps the most important limitation was that the researchers had no set definition of disability for this study. Every child who was listed as special needs student was invited to participate in the study. Thus, children with physical, emotional and cognitive disabilities were included in the study. It is possible that if the study focused only on type of disability, particularly physical disability, the findings would be different from the current findings.

We also lacked age comparable data. While we had comparable accelerometer data for disabled and non-disabled middle school children, the national and state data was only available for high school age children and older. BRFFS data was available only for disabled adults. In the future, more research on age specific middle school disabled population would be very helpful.

We had a small sample size of students and parents. There were only eight disabled students who were available to participate in the study. In addition, not all parents of children with a disability volunteered to participate in the study. Five out of the eight parents were available for interviews; however, only two showed up to the focus group. Because only children's names were provided, and there was no access to telephone numbers, addresses, or names of the participating children's parents it was difficult to contact parents. Parent participation may have been greater if contact information was more readily available.

A final limitation stems from the observational data. Only 10 minutes of playground observation were completed with four students during their short lunch

recess. The short observation time with few subjects provided limited insight into student's true levels of physical activity during free time during the school day.

### **Recommendations**

Human behavior, such as physical activity, is generally influenced by three types of factors. In the behavioral literature these factors are known as predisposing, enabling and reinforcing factors (PER factors) (Green, L., Kreuter, M., 2005). Predisposing factors can be defined as a person's knowledge, beliefs, values, and/or attitudes about a given behavior. Enabling factors can be described as accessibility, availability, skills, and/or laws prohibiting or contributing to a specific behavior. Finally, reinforcing factors can be identified as family members, significant others, friends, and/or teachers who may support, allow or contribute to a certain behavior.

When recommending strategies designed to increase physical activity among middle school youth it is helpful to examine the PER factors that directly influence the target populations' physical activity behaviors. The following recommendations are based on PER factors that were identified through an examination of data from a variety of sources in this study.

*Predisposing Factors:* Children with a disability disinterest in physical activity was the major predisposing factor identified in this study. Whether the disinterest arose from the child's lack of exposure to enjoyable physical activities, or was the result of a family trait of inactivity was not clear; however, children were more active during the weekdays than on the weekends. During school hours, teachers and school personnel found ways to incorporate physical activity, and it would be ideal to see the same for the weekends.

Recommendation #1: To encourage physical activity during non-school hours, teachers could incorporate creative physical activity assignments into student's homework in a variety of subject areas. For example, each student could wear a pedometer and have to pick a State they wish to walk to. After school hours would be used to accomplish this goal, and each student would need to calculate the number of miles needed to be walked to reach their goal. The middle school could encourage parents to participate with their child to help them meet their goal.

Recommendation #2: Provide information of all available physical activity programs in Missoula for youth and young adults through television ads, school promotional projects, fliers, and parent teacher conferences. School teachers and personnel could send informational fliers home to parents regarding school offered programs such as Flagship, and organized sports. Parents and teachers could organize a time at the beginning of every quarter to discuss opportunities at school for physical activity. The school newsletter could expand their current reporting and include free physical activities that are occurring in Missoula for the up-coming weeks. All information events could take place at the school setting and be available in a print form for any parents who cannot make the meeting time.

Enabling Factors: Several important enabling factors were identified by participants in this study. The factor that was mentioned most frequently was the lack of playground equipment. Another important factor was parents' lack of information about school and community programs that encourage physical activity. This factor was related to parents' perceptions that the school was not doing a good job of communicating with them about physical activity opportunities. A third enabling factors related to a lack of

communication among parents of children with a disability. Several parents believed more communication and networking among parents of disabled students would be helpful. Perhaps the most important enabling factor influencing disabled youth's activity levels was the lack of adult role models.

Recommendation #1: Encourage children to take advantage of any and all free after school, and summer programs that are available in Missoula. For example, at the beginning of every school year, host a 'Fair for Healthy Kids' and invite representatives from the Missoula Family YMCA, Boys and Girls Club, Flagship, and the Montana Action for Healthy Kids programs to talk to parents and children about the programs they offer. Each organization could have a booth with information readily available for parents to take home.

Recommendation #2: Children participating in the Life Skills class could be tasked with having their parent(s) sign off on all assignments they complete; particularly assignments that involve physical activity. This would give parents a better understanding of the types of projects their child was working on at school, and what kinds of activities they have been participating in.

*Reinforcing Factors:* The major factor identified in this study that reinforced children's inactivity was the lack of encouragement or support from parents and other adult role models outside of school personnel. For the most part, parents seemed to believe that the schools should be taking a more active role in keeping their children physically fit.

Recommendation #1: The Public Health Agency of Canada partnered with the Canadian Society for Exercise Physiology and key youth agencies to provide all families a packet of information of physical activity for youth ages 10-14 called “The Family Guide to Physical Activity for Youth.” The information includes the long term and short term health risks of physical inactivity, current age appropriate physical activity recommendations, examples of how to meet guidelines, examples of how to change and encourage behavior, examples of how to encourage and incorporate physical activity into your family, and real life examples of families and how they are being physically active. The packet includes colorful pictures and targets parents, youth, and teachers with examples and ideas of how to become physically active. A similar packet could be put together for Missoula County Public Schools and include testimonials from Missoula families who are physically active in the area. The packet would be distributed to all school personnel and encouraged to be sent home with all students. The information would be updated bi-annually and sent home to parents.

## **Conclusions**

The ACSM (2009) recommends that children engage in at least 60 minutes of moderate physical activity five or more days per week. While many school age children do meet the guidelines for daily physical activity, approximately 53% are not active enough to meet the ACSM guidelines (Mohar, L., Gaskill, S., Cox, C., Miller, A., 2007). In addition, there appears to be a widespread belief that children with a disability are even less likely to meet minimal guidelines for activity than are their non-disabled peers. Unfortunately, there is a paucity of evidence based research to support this belief. This study was an attempt to examine the activity levels of disabled students using a variety of quantitative and qualitative data sources.

Surprisingly, the results of this study reveal that activity levels for children with a disability and their non-disabled counterparts were similar. In fact, activity levels at least during the school week, appeared to be slightly higher for disabled students. While disabled students were slightly more active during the school week, levels of activity in both groups, disabled and not-disabled, were relatively low. Thus, it appears that there is a need for increasing activity levels in both groups.

A second important outcome of this study was the identification of barriers to increasing activity levels. The amount of parent's involvement and interest in physical activity, their child's disinterest in physical activity, and the utilization of available, school sponsored after school programs that encourage physical activity could all be improved to help increase levels of physical activity for children. Addressing the indentified barriers presented from this study will help open up more opportunities for physical activity during the school day and after school.

All conclusions drawn from this study should be interpreted cautiously, however, in light of the study's small sample size and the fact that the sample included students with physical, emotional and cognitive disabilities. Nevertheless, future endeavors to increase physical activity among youth should focus on health promotion strategies that address barriers to activity and include both disabled and non-disabled youth as target audiences.

## References

- Alexander, M. (2008). U.S. National Library of Medicine: *adolescent development*.  
Available at: <http://www.nlm.nih.gov/MEDLINEPLUS/ency/article/002003.htm>
- American College of Sports Medicine (2009). Youth physical activity recommendations.  
Available at: <http://www.acsm.org/AM/Template.cfm?Section=Home>
- Babcock, D. (2008). National Institute of Neurological Disorders and Stroke. Available  
at: <http://www.ninds.nih.gov/>
- Big Brothers and Big Sisters Organization, (2008). History of Big Brothers and Big  
Sisters of America. Available at: <http://www.bgca.org/>
- Doll-Yogerst, D., (2008, October). Key Informant Approach. Retrieved 12, October 2008  
from: <http://www.uwex.edu/ces/pdande/progdev/pdf/keyinform.pdf>.
- Eat Right Montana, (2007). Eating Right in Montana: A coalition promoting healthy  
eating and active lifestyles. Available at: <http://www.eatrightmontana.org>
- Fernhall B., Pitetti K.H., Rimmer J.H., McCubbin J.A., Rintala P., Millar A.L., Kittredge  
J., Burkett L.N. (1996). *Cardiorespiratory capacity of individuals with mental  
retardation including down syndrome*. *Medicine and Science in Sports and  
Exercise*, 28(3), 366-371.
- Frey G., Stanish H., Vivienne, T. (2008). *Physical activity of youth with intellectual  
disability: Review and research agenda*. *Adapted Physical Activity Quarterly*, 25,  
95-117.
- Gordis, L., (2004). *Epidemiology*, (3<sup>rd</sup> ed.). Elsevier, Inc: Philadelphia, PA.
- Heil, D. (2006) *Predicting Activity Energy Expenditure Using the Actical Activity  
Monitor*. *Research Quarterly for Exercise and Sport*, 77 (1), 64-80.



- Institute of Medicine. The future of disability in America. Washington D.C.: The National Academies Press; 2007.
- Laskin, J. (2009). Physical Activity Patterns Among Disabled Students in Missoula County Public Schools. Unpublished Manuscript.
- Mckenzie, J., Neiger, B., Smeltzer, J., (2005). Planning, Implementing, & Evaluating Health Promotion Programs – 4<sup>th</sup> edition – Benjamin Cummings: San Francisco, CA.
- Mohar, L, Gaskill, S., Cox, C., Miller, A., (2007). Physical Activity Patterns in Missoula Youth. Unpublished Manuscript.
- Murphy, N., Carbone, P., (2008). Promoting the participation of children with disabilities in sports, recreation, and physical activities. American Academy of Pediatrics, 121 (5), 1057-1061.
- National Center on Physical Activity and Disability, (2008). Research: Research on physical activity and disability: an Emerging National Priority. Available at: [http://www.ncpad.org/research/fact\\_sheet.php?sheet=189&section=1420](http://www.ncpad.org/research/fact_sheet.php?sheet=189&section=1420)
- National Institute on Disability and Rehabilitation Research. *Trends in Disability Prevalence and Their Causes: Proceedings of the Fourth National Disability Statistics and Policy Forum. May 16, 1997, Washington. DC.* San Francisco, CA: The Disability Statistics Rehabilitation Research and Training Center, 1998.
- Pitetti KH, Campbell KD. (1991). *Mentally retarded individuals – a population at risk?* Medicine and Science in Sports and Exercise, 23(5), 586-593.

- Pitetti, K.H., Rimmer, J.H., Fernhall, B. (1993). *Physical fitness and adults with mental retardation. An overview of current research and future directions*. *Sports Medicine*, 16(1), 23-56.
- Ploughman, M. (2008). *Exercise is brain food: The effects of physical activity on brain function*. *Developmental Neurorehabilitation*, 11(3), 236-240.
- Rimmer J. (2005) Exercise and physical activity in persons aging with a physical disability. *Physical Medical Rehabilitation Clinic of North American*, 2005; 16(1):41-56.31.
- Rimmer, J.H., Braddock, D., & Fujiura, G. (1994). Cardiovascular Risk Factor Levels in Adults with Mental Retardation. *American Journal of Mental Retardation*, 98, 510-518. Oxford Dictionary Retrieved October 2008, 12.
- Rimmer J.H., Rowland J.L. (2008). Physical activity in youth with disabilities: A critical need in an underserved population. *Devel Neuroreh* 2008; 11:141-148.
- Rogol, A., Clark, P., Roemmich, S. (2000). *Growth and pubertal development in children and adolescents: effects of diet and physical activity*. *American Journal of Clinical Nutrition*, 7 (2): 521S – 528S.
- Salkind, N., (2006). *Exploring research* (6<sup>th</sup> ed.). Pearson Education, Inc.: Upper Saddle River, New Jersey.
- Satcher, D. (2008, October 12). Department of Public Health and Human Services Surgeon General's Report: *Healthy People 2010*. Available at:  
<http://www.healthypeople.gov/Document/tableofcontents.htm#parta>
- Special Olympics, (2008). History and facts about the Special Olympics. Available at:

<http://www.specialolympics.org/Special+Olympics+Public+Website/default.htm>,

U.S. Department of Agriculture, (2008). Inside the Pyramid: *What is physical activity*.

Available at: [http://www.mypyramid.gov/pyramid/physical\\_activity.html](http://www.mypyramid.gov/pyramid/physical_activity.html).

U.S. Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health*. 2nd ed. Washington, DC: U.S. Government Printing

Office, November 2000.

World Health Organization (WHO). International Classification of Functioning and

Disability (ICIDH-2): Beta-1 Draft for Field Trials. Geneva, Switzerland: WHO,

1997, 11-21, 206-215, 221-225.

Young Men's Christian Association, (2008). History of the YMCA. Available at:

<http://www.ymca.net/>

**APPENDIX A:**  
**TEACHER INTERVIEW QUESTIONS**

## Appendix A

### Teacher Interview Questions:

1. How does the physical activity levels of children in your class who do not have a disability compare with those who do have a physical disability.
  - How does it compare during recess, P.E. class, and/or after school programs?
  - How do absentee rates between disabled and non-disabled students compare?
2. What, if any, are the current, available physical activities for children with a disability physically at your Missoula middle school during school?
  - What programs or activities are available after school
3. What do you believe are the effects of physical inactivity for physically disabled students?
  - What are the immediate/short term effects
  - What are the long term effects
4. As a teacher, what do you feel are the barriers or challenges to increased physical activity for physically disabled students at your Missoula middle school??
  - Enabling Factors
    - Skills
    - Resources
    - Societal support for physical activity
    - Living conditions
    - School conditions
  - Predisposing Factors
    - Knowledge about physical activity
    - Beliefs
    - Values
    - Attitude
    - Self efficacy
    - Existing skills
  - Reinforcing Factors
    - Social support – family, peers, teachers
    - Rewards
5. What resources (faculty, staff, school board, parents, community, etc.) are available at Your Missoula middle school that could be used to encourage increased physical activity?
6. What ideas do you have for increasing physical activity among children with a disability at your Missoula middle school?

**APPENDIX B:**  
**PRINCIPAL INTERVIEW QUESTIONS**

## Appendix B

### Principal Interview Questions:

1. How does the physical activity levels of children at your Missoula middle school who do not have a disability compare with those who do have a physical disability?
  - How does it compare during recess, P.E. class, and/or after school programs?
  - How do absentee rates between disabled and non-disabled students compare?
2. What, if any, are the current, available physical activities for children with a disability at your Missoula middle school during school?
  - What programs or activities are available after school
3. What do you believe are the effects of physical inactivity for disabled students?
  - What are the immediate/short term effects
  - What are the long term effects
4. As principle, what do you feel are the barriers or challenges to increased physical activity for physically disabled students at your Missoula middle school?
  - Enabling Factors
    - Skills
    - Resources
    - Societal support for physical activity
    - Living conditions
    - School conditions
  - Predisposing Factors
    - Knowledge about physical activity
    - Beliefs
    - Values
    - Attitude
    - Self efficacy
    - Existing skills
  - Reinforcing Factors
    - Social support – family, peers, teachers
    - Rewards
5. What resources (faculty, staff, school board, parents, community, etc.) are available at your Missoula middle school that could be used to encourage increased physical activity?
6. What ideas do you have for increasing physical activity among children with a disability at your Missoula middle school?

**APPENDIX C:**  
**PARENT FOCUS GROUP QUESTIONS**



## Appendix C

### Parent Focus Group Questions

1. How does the physical activity levels of your child compare with those who do have a physical disability?
  - How does it compare during recess, P.E. class, and/or after school programs?
  - If you know, how often in a given week is your child excused from school?
    - What is the reason – illness, doctor’s appointment, lack of transportation, etc.?
2. What, if any, physical activities does your child currently participate in?
  - What programs are they enrolled in after school
3. What do you believe are the effects of physical inactivity for your child?
  - What are the immediate/short term effects
  - What are the long term effects
4. As a parent, what do you feel are the barriers or challenges to increased physical activity for your child?
  - Enabling Factors
    - Skills
    - Resources
    - Societal support for physical activity
    - Living conditions
    - School conditions
  - Predisposing Factors
    - Knowledge about physical activity
    - Beliefs
    - Values
    - Attitude
    - Self efficacy
    - Existing skills
  - Reinforcing Factors
    - Social support – family, peers, teachers
    - Rewards
5. What resources (faculty, staff, school board, community, etc.) are available at Your middle school that could be used to encourage increased physical activity?
6. What ideas do you have for increasing physical activity for your chil

### **APPENDIX D:**

## **CHILD FOCUS GROUP INTERVIEW QUESTIONS**

## Appendix D

### **Child Focus Group Interview Questions**

1. What activities do you currently do for fun?
2. What, if any, activities are you not able to participate in?
  - Why?
  - Would you like to be able to participate?
3. Do you feel excluded or have a hard time making friends at school?
  - What do you usually do during recess?
  - What ideas do you have for feeling more included at school?

**APPENDIX E:**  
**FIELD OBSERVATION CHECKLIST**

Appendix E

**Field Observation Check List**

Child's One's Name: \_\_\_\_\_  
Child's Observation Code: \_\_\_\_\_  
Classroom Instructor: \_\_\_\_\_  
Date: \_\_\_\_\_  
Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Child's One's Name: \_\_\_\_\_  
Child's Observation Code: \_\_\_\_\_  
Classroom Instructor: \_\_\_\_\_  
Date: \_\_\_\_\_  
Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Child's Three's Name: \_\_\_\_\_  
Child's Observation Code: \_\_\_\_\_  
Classroom Instructor: \_\_\_\_\_  
Date: \_\_\_\_\_  
Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Child Observation Code:	Activity:	Duration of Activity: Number of Minutes	Level of Participation: Scale of intensity 1-5 1=high 3 = Moderate 5 = Low Level	Additional Comments:

Weather Checklist:

Condition:	Yes	No
Sunshine		
Wind		
Rain		
Snow		
Ice		

**APPENDIX F:**  
**CONTACT SUMMARY SHEET**

Appendix F

**Contact Summary Sheet**

Interviewee Name: \_\_\_\_\_

Relationship to Study:

\_\_\_ Parent Focus Group Participant      \_\_\_ Teacher      \_\_\_ Principal

Date: \_\_\_\_\_

Location: \_\_\_\_\_

Interview Begin Time: \_\_\_\_\_

Interview Ending Time: \_\_\_\_\_

Comments:

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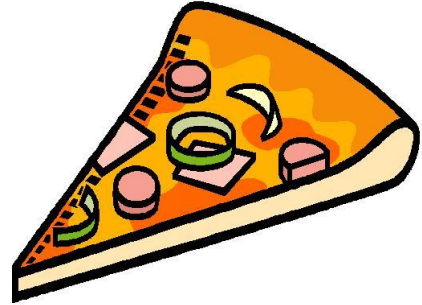


**APPENDIX G:**  
**PARENT FOCUS GROUP QUESTIONS**

Appendix G

**Parent Focus Group Letter**

*Come have dinner on ME & bring your WHOLE family!!*



Dear (parent's name)

My name is Chelsea Bond and I am a Health and Human Performance graduate student at The University of Montana. I am currently working on a project at Your child's middle school regarding activity levels and physical fitness. It is my hope to provide you, your child, and Your child's middle school with information on how to better serve the physical activity needs of all their students. That being said, I need your help!

I will be holding a small group discussion on **Wednesday March 18th at 5:45 PM** in room 211 in the middle school library and would greatly appreciate you and your (child's name) attending. Pizza, beverages, desert, and \$20 gift cards to Wal-Mart, Roseaurs, or Holiday gas station (your choice) will be given to focus group participants (one gift card per family). Please feel free to bring the entire family and have dinner on me! The questions being asked at the focus group are attached, and you will be free to answer only the questions you feel comfortable answering.

In order to plan ahead for pizzas and beverages, I will be contacting you by phone to ask if you are planning on attending the discussion group. Or, if you like you can contact me at 240-4807.

I look forward to seeing you on **Wednesday, March 25<sup>th</sup> @ 5:45 PM** and please contact at 240-4807 or [Chelsea.bond@umontana.edu](mailto:Chelsea.bond@umontana.edu), with any questions or concerns.

Sincerely,

Chelsea Bond  
University of Montana Graduate Student  
Department of Health & Human Performance

**APPENDIX H:**  
**PARENT INFORMATION AND CONSENT FORM**

## Parent Information and Consent Form

### PARENT INFORMATION AND CONSENT FORM

**TITLE:** A Case Study of the Physical Activity Needs of a Missoula Middle School Students with Disabilities and Chronic Health Conditions

**Project Directors:** Chelsea Bond B.A., Graduate Research Asst. Health and Human Performance  
117 McGill Hall, The University of Montana  
Missoula, MT 59812  
Office: (406) 243-2919 [chelsea.bond@umontana.edu](mailto:chelsea.bond@umontana.edu)

**Faculty Supervisor:** Annie Sondag, Ph.D., Health and Human Performance Dept  
117 McGill Hall, The University of Montana  
Missoula, MT 59812  
Office: (406) 243-2919 [annie.sondag@umontana.edu](mailto:annie.sondag@umontana.edu)

This consent form may contain words that are new to you. If you read any words that are not clear, please feel free to call or email one of the project directors listed above.

#### **Purpose:**

The purpose of this study is to paint a picture of physical activity levels of disabled Missoula middle school children, and to describe the challenges and barriers related to increased physical activity for this population. Ultimately, we hope that this information can be used by administrators, teachers and parents to develop fun and innovative ways to increase the activity levels of children attending The specified Missoula middle school.

#### **Procedures:**

Discussion Group: In general, if you agree to volunteer, you will be asked to participate in a one hour discussion group (focus group interview). The discussion group will consist of parents and children with disabilities. We hope that we will have 3 to 5 parents and 3 to 5 children from The specified Missoula middle school at each discussion group. You will be provided with all of the discussion group questions one week prior to the meeting. The questions will focus on you and your child's perceptions about current activity levels, and barriers and challenges related to increased activity for your child. You will not be required to answer any question(s) that you dislike, and you may change your mind about participating at any time.

We will be arranging the discussion groups with you at your convenience after school hours in the school building. This meeting will take about one hour. Pizza, veggies, cookies and drinks will be provided for you and your children. During the discussion group a graduate research assistant from The University of Montana will be asking you questions about the activity levels of your child with physical disabilities or chronic illness and your personal beliefs about barriers or challenges for this population.

**Child Observation:** We also are asking permission to observe your child on the playground or during regular physical education classes. The UM research assistant will be recording the activities your child engages in during those times. The research assistant will not be interacting with your child at this time and will be as unobtrusive as possible while doing the observations. Specifics:

- You will be asked to sign this form if you:
  - Agree to participate in the focus group
  - Agree for your child to participate in a focus group with you
  - Agree for your child to be observed on the The middle school play ground or in physical education classes

**Risks/Discomforts:**

Upon agreement to participate you will be provided with all of the focus group questions. The questions relate only to your perceptions of physical activity in relationship to your child. However, once you have reviewed the questions you may decline participation or choose to answer only some of the questions.

**Benefits:**

Little is currently known about the physical activity habits of youth in Missoula (or the United States). Information gathered from this study will be shared with administrators, teachers and participating parents. Hopefully, the information will be helpful in the school's efforts to serve the needs of your child.

To recognize your time and participation you will be provided with pizza, refreshments, and a \$20 gift card of your choice to Holiday gas station, Roseaurs, Target, or Wal-Mart. Please note, one gift card per family will be available.

**Confidentiality:**

- All focus group information will only be seen by the graduate research assistant conducting the focus groups.
- Immediately following the focus groups all individuals will be disidentified.
- The focus group will be voice recorded and transcribed. Immediately following transcription all tapes will be destroyed.

**Compensation for Injury:**

Although we do not foresee any risk in taking part in this study, the following liability statement is required in all University of Montana consent forms.

*In the event that you are injured as a result of this research you should individually seek appropriate medical treatment. If the injury is caused by the negligence of the University or any of its employees, you may be entitled to reimbursement or compensation pursuant to the Comprehensive State Insurance Plan established by the Department of Administration under the authority of M.C.A., Title2, Chapter 9. In the event of a claim for such injury, further information may be obtained from the University's Claims representative or University Legal Counsel. @ (Reviewed by University Legal Counsel, July 6, 1993)*

**Voluntary Participation/Withdrawal:**

- Your decision to participate or take part in this study is completely voluntary.

- You may refuse to participate or withdraw your participation at any time without penalty or loss of benefit.

**Questions:**

You may wish to discuss this with others before you agree to take part in this study. If you have questions about the research now or during the study contact: Annie Sondag (243-5215). If you have any questions regarding your rights as a research subject, you may contact the Chair of the IRB through the University of Montana Research Office at 243-6670.

**Statement of Consent:**

I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will also be answered by a member of the research team. I voluntarily agree to take part in this study. I understand I will receive a copy of this consent form.

\_\_\_\_\_

Printed Name of Subject

\_\_\_\_\_

Subject's Signature

\_\_\_\_\_

Date

Statement of Consent for Audiotape:

I understand that audio recordings will be taken during the study.  
I consent to having my voice recorded  
I understand that audio recordings will be destroyed following transcription, and that no identifying information will be included in the transcription.

\_\_\_\_\_

Subject's Signature

\_\_\_\_\_

Date

**APPENDIX I:**  
**FOCUS GROUP PARENT PERMISSION FORM**

Appendix I

**Focus Group Parent Permission Form**

PARENTAL PERMISSION FORM

**TITLE:** A Case Study of the Physical Activity Needs of Missoula Middle School Students with Disabilities and Chronic Health Conditions

**Project Directors:** Chelsea Bond B.A., Graduate Research Asst. Health and Human Performance  
117 McGill Hall, The University of Montana  
Missoula, MT 59812  
Office: (406) 243-2919 [chelsea.bond@umontana.edu](mailto:chelsea.bond@umontana.edu)

**Faculty Supervisor:** Annie Sondag, Ph.D., Health and Human Performance Dept  
117 McGill Hall, The University of Montana  
Missoula, MT 59812  
Office: (406) 243-2919 [annie.sondag@umontana.edu](mailto:annie.sondag@umontana.edu)

This consent form may contain words that are new to you. If you read any words that are not clear to you, please feel free to call or email one of the project directors listed above.

**Purpose:**

You are being asked to give permission for your child to take part in a research study focus group. The focus group will provide an environment for your child to openly discuss their views regarding their current physical activity levels.

\* Your child has been chosen because they are a student at The selected Missoula middle school with a disability.

\* The purpose of this focus group is to learn what they see as their greatest barriers to increased physical activity during and after school.

\* The purpose of the recess observation is to better understand what a typical day of physical activity is like for your child at school.

**Procedures:**



\* If you agree to take part in this research study, your child will be asked five questions regarding his/her current physical activity levels.

\* A focus group will be done to provide an open environment for sharing.

\* Your child will be asked to attend the focus group; however, they do not have to answer any questions or participate if they don't want too.

\* The study will take place at the Middle school in a classroom during a time chosen by you.

\* The session will last for one hour.

\* Your child will also be observed during lunch recess. The graduate research assistant Chelsea Bond will observe your child's activity during lunch recess. Your child will not be contacted during the observation.

### **Payment for Participation:**

Your child will receive pizza, veggies, dessert, juice for attending the focus group.

### **Risks/Discomforts:**

There is no anticipated discomfort for those contributing to this study, so risk to your child is minimal.

### **Benefits:**

Although your child may not benefit from taking part in this study, their input will help The Missoula middle school understand what their needs are for increasing their physical activity during and after school.

### **Confidentiality:**

- All focus group information will only be seen by the graduate research assistant conducting the focus groups.
- Immediately following the focus groups all individuals will be disidentified.
- The focus group will be voice recorded and transcribed. Immediately following transcription all tapes will be destroyed.

### **Compensation for Injury:**

Although we do not foresee any risk in taking part in this study, the following liability statement is required in all University of Montana consent forms.

*In the event that you are injured as a result of this research you should individually seek appropriate medical treatment. If the injury is caused by the negligence of the University or any of its employees, you may be entitled to reimbursement or compensation pursuant to the Comprehensive State Insurance Plan established by the Department of Administration under the authority of M.C.A., Title 2, Chapter 9. In the event of a claim for such injury, further information may be obtained from the University's Claims representative or University Legal Counsel. © (Reviewed by University Legal Counsel, July 6, 1993)*

**Voluntary Participation/Withdrawal:**

- Your decision to participate or take part in this study is completely voluntary.
- You may refuse to participate or withdraw your participation at any time without penalty or loss of benefit.

**Questions:**

You may wish to discuss this with others before you agree to take part in this study. If you have questions about the research now or during the study contact: Annie Sondag (243-2919). If you have any questions regarding your rights as a research subject, you may contact the Chair of the IRB through the University of Montana Research Office at 243-6670.

**Parent’s Statement of Permission:**

I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will also be answered by a member of the research team. I voluntarily agree to have my child take part in this study. I understand I will receive a copy of this consent form.

\_\_\_\_\_

Printed Name of Subject

\_\_\_\_\_

Signature of Parent or Legally Authorized Representative

\_\_\_\_\_

Date

**Statement of Consent for Audiotape:**

- I understand that audio recordings will be taken during the study.
- I consent to having my voice recorded
- I understand that audio recordings will be destroyed following transcription, and that no identifying information will be included in the transcription.

\_\_\_\_\_

Subject's Signature

\_\_\_\_\_

Date

**APPENDIX J:**  
**MINOR ASSENT FORM**

## Appendix J

### Minor Assent Form

#### Minor's Assent for being in a Research Study University of Montana

Title: A Case Study of the Physical Activity Needs of Missoula Middle School Students with Disabilities and Chronic Health Conditions

#### Why am I here?

I am asking you to take part in a research study because we are trying to learn more about the activities you do at school and home. We want to know what you do for fun, and we also want to know what kinds of things make it hard to have fun doing activities. We are inviting you to be in the study because you are a student at The selected Missoula middle school.

#### Why are they doing this study?

I am doing this study because we would like to discover more ways for everyone at C.S. Porter to be involved in healthy physical activities during and after school hours.

#### What will happen to me?

If you decide to volunteer for this study you will come back to school with your parents and any of your brothers and/or sisters who want to come with you to school. The meeting will start about 5:00 p.m. Other kids from your school might come with their parents too. I will have pizza, veggies, cookies and drinks for everyone. While you eat, I will ask you questions about the activities you take part in during and after school. I want to know what you do for fun and exercise and who you typically play these games with.

I will also join you during one of your lunch recesses. I will not ask you any questions or have you play any specific games. I just want to see what your lunch recess is like.

Will the study hurt?

No part of this study will hurt you and you are free to ask me as many questions as you want. At any point you are free to leave the study and you don't have to participate in anything you don't like.

Will the study help me?

This study will help me understand what you like and don't like about being at school and the games/activities you play. Once you have shared your ideas with me, I will combine everyone's ideas into a report and share the report with your principal and teachers. Maybe together we will discover some new fun ways for everyone to be physically active.

What if I have any questions?

You can ask any questions that you have about the study before the study starts or during the study. If you have a question later that you didn't think of now, you can call me at 240-4807 or ask me the next time you see me at school.

Do my parents [guardians] know about this?

This study was explained to your parents [guardians] and they said that you could be in it. You can talk this over with them before you decide.

Do I have to be in the study?

You do not have to be in the study. No one will be upset if you don't want to do this. If you don't print your name on the line below I will know that you do not want to be in the study. If you do agree to be in the study by printing your name on the line below, you can always change your mind later. It's up to you.

Writing your name on this page means that that you agree to be in the study, and know what will happen to you. If you decide to quit the study all you have to do is tell the person in charge.

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Name of Minor (printed)

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Date

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Signature of Minor

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Date

---

Signature of Researcher

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Date