

ATTITUDES TOWARDS PHYSICAL EDUCATION ACTIVITY OF
PARENTS WHOSE CHILDREN ARE HOMESCHOOLED
VERSUS PARENTS WHOSE CHILDREN ATTEND
PUBLIC SCHOOL

by

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ABSTRACT

In recent years, schools have been called upon to expand their efforts to increase physical activity related opportunities for children and adolescents. Although schools have been found to be a vital venue in obesity prevention, not all children and adolescents in the United States attend public schools. There are approximately 2 million homeschool students (K-12) in the United States. In recent years, there has been an increase of homeschool physical education clinical programs conducted by higher education institutions to provide homeschool children with quality physical activity opportunities. The purpose of this study was to provide insight into the parental attitudes toward physical education activity among parents whose children attend public school, parents whose children are homeschooled, and parents whose children are homeschooled and attend a homeschool physical education program at an institution of higher education. The Physical Education Activity Attitude Scale (PEAAS) was utilized to assess parental attitudes toward physical education activity. A total of $N = 203$ parents completed the PEAAS survey. The mean total PEAAS score for all groups was 75.94 ($SD = 7.59$). A statistically significant difference among setting groups was found ($F(2, 403) = 13.274, p < 0.001$). For the general attitudes category, there was a statistically significant difference among the groups ($F(2, 403) = 5.07, p = 0.007$). For the physical education category, there was a statistically significant difference among the groups

($F(2, 403) = 13.988, p < 0.001$). For scientific basis category, there was no statistically significant difference among groups, ($F(2,403) = 1.404, p = 0.247$). Using the total PEAS scores, the main effect of parent physical activity was also statistically significant, implying there is a difference in total scores across parental physical activity levels ($p = 0.008$). A two-way-interaction was found for socioeconomic status (SES) and setting. Information from this exploratory study should be used to advocate for the inclusion of physical education classes in the curriculum for students that are homeschooled, as well as students who attend public schools.

TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGMENTS.....	vii
Chapters	
1 INTRODUCTION.....	1
Statement of the Problem.....	4
Study Purpose.....	4
Research Questions.....	5
Significance.....	5
Definition of Terms.....	6
Limitations.....	7
2 LITERATURE REVIEW.....	8
Health Benefits of Physical Activity.....	9
Homeschooling and Physical Education.....	13
Parent Attitudes Toward Physical Education.....	19
3 METHODS.....	22
Participants.....	22
Instrumentation and Procedures.....	22
Scoring the Instrument.....	24
Statistical Analysis.....	25
4 RESULTS.....	26
5 DISCUSSION.....	33
Limitations and Future Recommendations.....	38
Summary.....	40

APPENDIX: PHYSICAL EDUCATION ACTIVITY ATTITUDE SCALE.....	42
REFERENCES.....	45

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CHAPTER 1

INTRODUCTION

Despite the known health benefits of physical activity, the prevalence of overweight and obese children and adolescents worldwide has been increasing at an alarming rate for several decades (Nemet, 2016). Being overweight or obese during childhood increases the risk for many adverse health outcomes including hypertension, high cholesterol, type II diabetes, bone and joint problems, asthma, sleep apnea, and psychological consequences (Crespo et al., 2001). Due to this increase in childhood obesity, the topic and how to correct it has become a major public health concern. Physical activity is a component of obesity prevention and treatment as well as its related health risk factors (Glickman, Parker, Sim, Cook, & Miller, 2012). Indeed, physical activity during childhood has shown to be effective in preventing health problems later in life (Bryant et al., 2010; Ridgers, Stratton, & Fairclough, 2006).

In 2008, the U.S. Department of Health and Human Services (USHHS) released the first comprehensive guidelines for physical activity for all Americans, which included key recommendations for children and adolescents. Key recommendations include 60 minutes daily of moderate-to-vigorous physical activity, and this activity should include muscle and bone strengthening activities. Examples of activities include walking briskly,

jogging or running, calisthenics, and circuit weight training (Center for Disease Control & Prevention, 2015). The 2009 Youth Risk Behavior Survey showed that nationwide only 18.4% of students were physically active for a total of at least 60 minutes per day each day of the week. Additionally, only 37% of students reported being physically active for a total of at least 60 minutes per day on 5 or more days per week. In this survey, being physically active was defined as participating in activity that “increased [one’s] heart rate and made them breathe hard some of the time” (Eaton et al., 2010).

In recent years, schools have been called upon to expand their efforts to increase physical activity related opportunities for children and adolescents. Schools are recognized as important environments in which public health interventions should target change in health risk behaviors, including physical inactivity (Green & Reese, 2006). With millions of children and adolescents enrolled, schools play a critical role in making physical activity possible through quality physical education and other school-based opportunities (Wechsler, McKenna, Lee, & Dietz, 2004). Quality physical education programs are invaluable sources of support and knowledge for children who are obese and often serve as major components in the reduction of childhood obesity (Green & Reese, 2006; Telford et al., 2012). Although schools have been found to be a vital venue in obesity prevention, not all children and adolescents in the United States attend public schools.

Over the past several decades, homeschooling has received increased attention from both the media and parents of school-age children (McKethan, Everhart, & Herman, 2000). The attention that homeschooling is receiving is due to the significant increase in population. The rise in the homeschool population is now considered one of the most

noteworthy trends of the past half century (Lines, 2000). There are approximately 2 million homeschool students (K-12) in the United States (Ray, 2015). The steady growth in the homeschooled population suggests homeschooling is becoming an accepted alternative to public schooling for many families. The inclusion of religious and moral teaching, closer relationships between parent and child, freedom to pursue nontraditional subjects and learning methods, and avoiding the environment of schools are some reasons that are cited by parents as motivation to homeschool their children (Nichols, College, & Michigan, 2005). Additionally, learning opportunities that were once out of reach due to money, time, and resources are now more available through the Internet.

The growing population of homeschooled students and their need for regular physical activity indicates the need for established homeschool structured physical activity programs (McKethan et al., 2000). In recent years, there has been an increase in homeschool physical education clinical programs conducted by higher education institutions to provide homeschool children with quality physical activity opportunities. These programs usually meet one day per week and are taught by university students who are enrolled in a Physical Education Teacher Education (PETE) program. In order for the University homeschooled physical education programs to be viable, parents must value the program and be willing to enroll and transport their children to the physical activity sites.

Parental attitudes towards physical activity are a factor that has shown to impact the amount of physical activity in which a child engages (Moore et al., 1991; Pyper, Harrington, & Manson, 2016). Parents play a significant role in their child's health behaviors, including physical activity. A positive correlation is generally found between

parent health behaviors and the health behaviors of their children (DeVoe, 1995). When parents value physical activity and participate in physical activity, their children are often more physically active (Moore et al., 1991; Pyper et al., 2016). Research has found that while parents' perceptions of physical education activity are positive, many parents still perceive physical education as less important than other academic subjects (Sheehy, 2011).

Statement of the Problem

There is minimal research in the area of homeschooling and physical education activity. Most of the research conducted in the area of physical education activity has focused on children attending public schools. Homeschool physical education clinical programs have emerged at several higher education institutions to provide physical education activity opportunities for homeschooled children. Although there is research (Callahan & Lehwald, 2008; Everhart & Harper, 1997; McKethan et al., 2000) documenting the benefits of these programs and discussions concerning how to start a clinical program at a higher education institution, there remains no research providing insight on parental attitudes towards physical education activity for homeschooled children.

Study Purpose

This project seeks to provide insight into the parental attitudes toward physical education activity among parents whose children attend public school, parents whose children are homeschooled, and parents whose children are homeschooled and attend a

homeschool physical education program at an institution of higher education.

Research Questions

This exploratory study seeks to address the following research questions:

- 1) What are the parental attitudes toward physical education activity of parents whose children are homeschooled compared to parents of children who go to public schools?
- 2) What are the parental attitudes toward physical education activity of parents whose children are homeschooled compared to parents whose children are homeschooled and attend a homeschool physical education program at an institution of higher education?
- 3) What are the parental attitudes toward physical education activity of parents whose children are homeschooled and attend a homeschool physical education program at an institution of higher education compared to parents of children who go to public schools?

Significance

While there are studies on homeschooling examining curriculum and socialization, there remain many questions about homeschooling and physical education activity. The homeschool population is understudied and potentially at greater risk for inactivity and obesity-related conditions (Welk, Schaben, & Shelley, 2004). This research study will provide valuable insight into parental attitudes towards physical education activity. This information will be valuable to parents of children who are

homeschooled as they plan the curriculum for their children. This study will add to the body of literature regarding physical education activity for homeschooled children and provide a reference point for future investigation.

Definition of Terms

- Physical activity is any bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above a basal level (USHHS, 2008).
- Physical education is a planned, sequential standards-based program of instruction intended to develop motor skills, knowledge and behaviors for active living, physical fitness, sportsmanship, self-efficacy, as well as emotional intelligence (Society of Health and Physical Educators [Shape America], 2017).
- Physical Education Activity is physical activity as it occurs in a physical education setting (Valdez, 1997).
- Moderate to Vigorous Intensity Physical Activity (MVPA) is any activity that requires a moderate to large amount of effort and causes rapid breathing and a noticeable to substantial increase in heart rate (World Health Organization, 2017)
- Homeschooling is parent-led educational instruction that occurs in the home environment (Ray, 2015). There are two “industry” acceptable spellings: Home schooling and homeschooling. This study will use the second spelling.
- Homeschool physical education clinical program is a program that offers future teachers an alternative means of gaining practical experience working with homeschooled students (McKethan et al., 2000) as well as offering appropriate physical education experiences to homeschooled children (Everhart & Harper,

1997).

- Attitude is a feeling or a way of thinking that affects a person's behavior.

Limitations

This study is subject to the following limitations:

1. The participants will not be randomly selected or randomly assigned into groups.
2. The participants may be a biased sample as they are volunteering to participate in this study.

CHAPTER 2

LITERATURE REVIEW

According to Fryar, Carroll, and Ogden (2012), approximately 16.9% of children and adolescents aged 2-19 years are now obese. Due to the increase in obesity over the past three decades (Staniford, Breckon, & Copeland, 2012), promoting physical activity has become a public health priority in the United States (Brewer & Rieg, 2013; Ogden, Carroll, Kit, & Flegal, 2014). Regular physical activity has been shown to be an important factor in the overall improvement of physical and mental health of school-aged children (Tarpomanova & Filkova, 2016). In children, physical activity has been positively related to strong, healthy bone growth, muscular strength, healthy development of the cardiorespiratory system; and reducing the risk of several chronic diseases (Nemet, 2017; Tarpomanova & Filkova, 2016).

Schools are recognized as important environments for physical activity intervention. For most of the day, children attend school, which makes it a valuable place to initiate physical activity behavior change that may impact childhood obesity (Ball, Kovarik, & Leidy, 2015). While schools are being targeted as places to combat physical inactivity, not all students in the United States attend public schools. In the United States today, there are estimated to be approximately 2 million homeschool students (Ray,

2015).

The increase in childhood obesity and the known benefits of children who participate in moderate to vigorous physical activity (USHSS, 2008) supports the need for homeschool parents to ensure their children are physically active. There are a growing number of homeschool physical education clinical programs that offer homeschool children the opportunity to participate in quality physical education activity (Callahan & Lehwald, 2008; Everhart & Harper, 1997; Wachob, 2015). These programs usually meet one day a week and are taught by university students who are enrolled in a Physical Education Teacher Education (PETE) program.

Parental attitudes toward physical activity have shown to have an impact on the amount of physical activity a child engages in. Moore et al. (1991) reported that when parents value physical activity and participate in physical activity, their children are often more physically active. Pyper et al. (2016) found that parental support and encouragement is an important determinant of a child's physical activity, and is a significant predictor of children meeting the physical activity guidelines.

This review of literature will focus on the following topics (1) health benefits of physical activity, (2) homeschooling and physical education, and (3) parental attitudes toward physical education activity.

Health Benefits of Physical Activity

Childhood obesity rates in the United States are staggering. Due to the steady rise, childhood obesity is one of the greatest current health crises in the United States. More than 16% or 23 million children and adolescents in the United States are in the

category of either obese or overweight (Green, Riley, & Hargrove, 2012). A goal of Healthy People 2020 is to reduce the proportion of obese and overweight children (Green et al., 2012). Unfortunately, Fryar et al. (2012) found that very little progress has been made toward the target goal.

Lowering the percentage of children and adolescents who are overweight or obese is crucial when considering the detrimental effects on health. Research indicates that children who are overweight have a lower quality of life than their peers who are not overweight (Schwimmer, Burwinkle, & Varni, 2003). In 1999, Must and Strauss reported that if obesity persists into adulthood it carries an increased risk of earlier morbidity and mortality. Similarly, Olshansky et al. (2005) found that children are at risk of being the first generation to have a shorter life span than their parents. Green et al. (2012) reported that being overweight during childhood increases the risk of developing many adverse diseases such as hypertension, orthopedic problems, depression, and type 2 diabetes. Additionally, obese children are often subject to ridicule and torment by other children. It is clear that childhood obesity is problematic and poses a serious threat to the health of our nation's population (Green et al., 2012). Local, state, and national initiatives have been developed to improve children's health and lessen complications associated with the escalating childhood obesity rates (Brewer & Rieg, 2013).

Physical inactivity has been shown to be a factor in the increase of obesity. Regular physical activity can decrease the incidence of obesity and produce long-term health benefits. Physical activity contributes to the building and maintenance of healthy bones and muscles, improved health-related fitness, and positive social and mental health (USHSS, 2008). Due to the growing awareness of the health benefits of regular physical

activity, public guidelines for physical activity have been established by the U.S. Department of Health and Human Services. These guidelines suggest children and adolescents engage in 60 minutes or more of MVPA daily. Muscle-strengthening and bone-strengthening physical activity should be a portion of the daily physical activity. Although research has clearly identified the need to be physically active, fewer than one-third of all children ages 6 to 17 nationwide are meeting the recommendation of 60 minutes of daily MVPA (National Association of Sport and Physical Education [NASPE], 2010).

The majority of children in the United States spend more time in schools than in any other environment away from home. More than 95 percent of youth aged 5 to 17 are enrolled in school, and no other institution has as much continuous and intensive contact and influence on children during their first 2 decades of life (Story, Nannery, & Schwartz, 2009). The time children spend in school has provided schools the opportunity to become an avenue through which obesity prevention can take place. The 2012 Institute of Medicine Report on Obesity Prevention calls for schools to become the national focal point for obesity prevention. This report asks all local education agencies and schools to adopt requirements for high-quality physical education and opportunities for daily physical activity outside of physical education (Glickman et al., 2012).

Schools play a critical role in making physical activity possible through quality physical education and other school-based opportunities (Wechsler et al., 2004). Schools have a unique opportunity to promote children's health by providing an environment where children participate in regular physical activity and learn lifelong skills for active living (Story et al., 2009). Although many school administrators are cutting physical

education programs due to academic pressure, research shows that physical activity time can be added to the school curriculum without impeding school achievement (Trudeau & Shephard, 2008). Furthermore, physical education can offer students physical, emotional, and social benefits (Story et al., 2009). In support of quality physical education in schools, NASPE (2010) recommends that schools provide 150 minutes per week of instructional physical education for elementary school children and 225 minutes per week for middle and high school students throughout the school year. In 2012, Green et al. found that due to the severe consequences of childhood obesity, health and physical education specialists across the nation have focused their attention on strategies and solutions for reducing childhood obesity. In addition, Green et al. (2012) reported that treatment programs using the coordinated approach have evolved in many school settings and have been successful. The coordinated effort among school personnel including administrators, guidance counselors, nurse-teachers, food service personnel, classroom teachers, physical educators, and parents have led to a positive outcome in increasing physical activity.

While it has been shown that schools can play a vital role in the fight against childhood obesity through physical education and other physical activity opportunities, not all children in the United States attend public schools. At least 2% of the total number of school children are homeschooled (Isenberg, 2007). Today, all 50 states in the United States permit homeschooling, although guidelines and requirements for homeschooling may vary from state to state (Davis, 2011).

Homeschooling and Physical Education

Homeschooling is not a new idea or practice (Miller, 2015). For centuries, children have learned outside formal school settings as parents, extended family, and tutors have been teaching children at home (Gaither, 2008). In the early years of homeschooling, parents decided to homeschool for pedagogical or ideological reasons. The modern homeschool movement in America began in the 1960s due to concerns about the instructional material being taught in public schools (Ray, 1989). In the late seventies and eighties, the homeschool movement gained momentum with the addition of those who chose to educate their children at home for religious or moral reasons (Nichols et al., 2005). In recent years, the concern about the environment of schools, which include lack of safety, drugs, and/or negative peer pressure, has been cited as the most important reason why parents homeschool. In 2006 the National Household Education Surveys Program (NHES) reported that 31% of parents cited concern about environment of schools as the reason for homeschooling, while 30% cited moral or religious reasons, and 16% cited dissatisfaction with academic instruction at schools. Although it is difficult to report the exact number of homeschooled children in the United States, the amount has risen significantly over the past 30 years and continues to grow. In 2007, Isenberg reported the number of homeschool children in the U.S was over 1 million, more than 2% of the total number of school children. A study conducted by Ray (2011) found that in spring 2010 there were an estimated 2 million homeschool students (K-12) in the United States, with a high confidence that the true number lies between 1.7 and 2.3 million.

Homeschooling is legal in all states (Coalition for Responsible Home Education, 2017). While homeschooling is legal, each state has different regulations for homeschool

families. A majority of states do expect the homeschooling family to provide basic information such as name, sex, address, and birthdate of the child along with documentation of intent to educate at home with either the state or local education agency (Homeschool Legal Defense Association, 2015). Notification to homeschool, parent qualifications, instruction and subjects, record keeping, assessment, and intervention vary from state to state (Coalition for Responsible Home Education, 2017). No states require parents to possess teaching certificates (Lines, 2001), however there are eleven states (Georgia, New Mexico, North Carolina, North Dakota, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, Washington, and West Virginia) that require parents to possess some form of educational qualification (Coalition for Responsible Home Education, 2017). A high school diploma or GED usually satisfies the educational requirement. Of the eleven states, Washington state requires more education for the parents, either college credits or the completion of a course in home-based study (Coalition for Responsible Home Education, 2017). No states require homeschool families to use any specific curricular material for educational purposes. However, there are some states (Oregon, South Dakota, Hawaii, West Virginia, Pennsylvania, New York, Vermont, Rhode Island, and Massachusetts) that require academic assessments to provide accountability of academic progress (Coalition for Responsible Home Education, 2017). States vary on subject requirements and instructional time requirements. Some states require proof of instruction in the same subjects required in public schools, while other states do not have subject requirements. Similarly, there are states that do require parents to provide the numbers of days or hours of instruction while other states do not have any instruction time requirements (Coalition for Responsible Home Education, 2017).

Thirty to 40 years ago homeschooling was not considered an acceptable practice for satisfying compulsory education requirements (Lines, 2000). However, as more support programs and curriculum options have been offered for educating children in the home, new families have decided that homeschooling is indeed a suitable option (Nichols et al., 2005). As homeschooling has become more popular, publishers have offered more curriculum materials for homeschoolers (Jorgenson, 2011). In addition, the Internet has become an invaluable resource for homeschool parents to provide virtual field trips, video clips, and flash application to their child's curriculum (Davis, 2011).

Navigating through the homeschool curriculum choices can be a daunting endeavor for parents who do not have a teaching background (Davis, 2011). Often parents lean towards subjects they are comfortable teaching or subjects that have an abundance of resources available. Homeschooling requires an immense amount of work as parents must understand the laws and regulations for homeschooling in their state, decide and develop curriculum that is effective and engaging, and learn to manage time (Davis, 2011). Compared to other subjects, there is not much curriculum offered for physical education. However, in recent years with the growing number of homeschooled children, along with the national concern about childhood obesity, there are now several physical education books and Internet sites that offer reading material, lessons, and videos on how to provide instruction in physical education for homeschool families. In 2005, Anne Elliot, a homeschool mom, described her quest to include physical education into her homeschool curriculum:

“Are you a P.E.-challenged Mom? I am! I grew up in a traditional school setting, and I just despised physical education class, or “phys ed” as my teachers called it. I didn't enjoy running around in the heat, making a fool of myself as I tried to catch balls, or changing in the locker room. Yuck! So as a homeschooling mom, I

was in a predicament. I understood the good sense in teaching physical fitness to my children. I realized the need for getting them off the couch and moving. But it was hard for me to set a good example when my memories of exercising and sports were less than fond. In addition, as the mother of six young children, I lacked the time to make lesson plans for yet another subject. Our day was already full with math, grammar, reading, writing, history, science, chores, music, service for others, housecleaning.... So I needed a plan. I talked to my husband, who has been involved with athletics on a high school level for many years. I read books on physical education, written by and for homeschoolers. I searched the Internet. The result was a set of simple lesson plans that would take me through several years of physical education. These plans are intended for elementary-age children, since these were the ages of my own children. I planned for ways to get us all up and exercising together, since this was a need in our home. Finally, I tried to make it fun, since I knew that I wouldn't want to continue if it wasn't – and if Mom doesn't want to exercise, why would the kids want to?" (Elliot, 2005)

While reading material concerning physical activity is a step in the right direction, physical education is a subject that has to be practiced. Children are less efficient in movement skills and need time to practice them (Corbin, 2002). Physically active students and teaching the importance of physical activity are priorities in a physical education program. Providing opportunities for homeschooled children to participate in quality physical education is essential.

Researchers have focused on pedagogy and curriculum for specific subjects such as math, science, reading, writing, and social studies in the homeschool educational setting (Nichols et al., 2005). In comparison, physical education activity has received little attention. To date, there are only a few studies to systematically examine the effects of homeschooling on children's levels of physical activity in a physical education class. Welk et al. (2004) investigated the physical activity, physical fitness levels, and psychosocial correlates of homeschooled children and children attending public school. Although the researchers observed a general trend for higher scores among the public school youth, there were no significant main effects for fitness comparisons and

psychosocial correlates. Long, Gaetke, Perry, Abel, and Clasey (2010) descriptively compared the physical activity and dietary intake of public school versus homeschooled children. Although there were no differences in dietary intake, it was found that on weekdays for a period of one week, public school children had significantly higher step counts and 24% more active time in moderate-to-vigorous physical activity compared with matched homeschool children. Long et al. (2010) reported that the results of their study may be partially explained by increased physical activity during the school day with public school children having greater opportunities to participate in physical activity during recess and physical education class. Furthermore, the researchers concluded that the inclusion and maintenance of physical education classes in school curricula are critical to help children meet physical activity recommendations.

The growing population of homeschooled students and their need for regular physical activity indicates the need for established homeschool structured physical education programs (McKethan et al., 2000). In recent years, there has been an increase of homeschool physical education clinical programs conducted by higher education institutions to provide homeschool children with physical education opportunities. These programs usually meet one day a week and are taught by university students who are enrolled in a Physical Education Teacher Education (PETE) programs. Homeschool physical education clinical programs provide homeschooled children with physical activity opportunities, and offer future teachers an alternative means of gaining practical experience by working with homeschooled students (McKethan et al., 2000). Furthermore, homeschool parents can view cognitive, psychomotor, and social benefits of planned lessons (Parris, 1997).

Homeschool physical education clinical programs began in the early 1990's with Brett Everhart and Tom Harper as pioneers of the programs. Everhart and Harper (1997) recognized the significant growth of the homeschool population, and the opportunity for PETE programs to enable preservice physical educators to obtain valuable teaching practice prior to student-teaching. Everhart and Harper (1997), described the homeschool physical activity programs at their respective institutions and discussed the trend of homeschool families gathering together to form a cooperative ("co-op") group. These groups form and meet for a specific subject in which one parent has a particular expertise. The authors found that the "co-op" trend in homeschooling is what allows PETE programs the opportunities to be involved in providing physical education experiences for homeschooled children. Everhart (1998) continued to explore homeschool physical education clinical programs. In this article, Everhart reported on the perceptions of homeschooled physical education, specifically looking at views from parents, students, and preservice teachers. Existing programs were described, and the modifications made to these programs were discussed. It was discovered that even if the homeschool parents did not have their own positive physical education experience, they provided support for the clinical teaching program for their children. Additionally, the preservice teachers provided evidence of professional growth in the lessons they taught. In 2000, McKethan et al. encouraged other institutions to offer a homeschool physical education program. The authors provided evidence of the program's success, as well as tips on how to get a program started. Callhan and Lehwald (2008) reported that homeschool physical education clinical programs are two-fold in the benefits they provide. Nonspecialists gain vital field experiences and homeschooled children receive physical education

instruction.

Parent Attitudes Toward Physical Education

Parents play a significant role in their child's health behaviors, including physical activity. The health behaviors of parents can promote or inhibit a child's participation in physical activity (Pyper et al., 2016). In 1998, Kimiecik and Horn investigated parental beliefs and children's MVPA. The findings of the study supported the basic tenets of the Family Influence Model and suggested that it is important to take into consideration parental beliefs to better understand children's participation in physical activity. Parents will be able to encourage their children to be physically active if they are aware of the benefits of physical activity (Tarpomanova & Filkova, 2016).

Parents' perception of the amount of time children spend in physical activity is critical. In 2012, Corder, Crespo, Sluijs, Lopez, and Elder conducted a study that found that most parents incorrectly classified their child as meeting physical activity guidelines on days when children were actually inactive. Parents wrongly classified their child's physical activity level on 48% of measured days and overestimated their child's physical activity on 43% of all measured days. Similarly, Lau, Engelen, and Bundy (2013) conducted a study to compare parents' perceptions of children's physical activity with objectively measured physical activity. Results found that while parents believed their child to be physically active, the children were in fact inactive. Parents consistently over-reported their children's physical activity. If parents perceive their child to be very active, they may fail to promote physical activity.

Parents who are physically active are more likely to have children who are

physically active. Moore et al. (1991) conducted a study to examine the influence of parents' physical activity levels on activity levels of young children. The results of the investigation revealed that children of active mothers were 2 times as likely to be more active than children of inactive mothers. Furthermore, when both parents are active, the children were 5.8 times more likely to be active. Despite the obvious advantages of parental involvement, parent participation in physical activity is not commonplace. Virgilio (1990) reported that 62% of fathers and 58% of mothers do not exercise with their children for even 20 minutes per week.

Although research has shown that most parents are not physically active with their children, a high percentage of parents do report that they believe physical activity is important. NASPE (2010) reported that 3 out of 4 parents think that more school physical education would be beneficial to control or prevent childhood obesity. Additionally, 95% of parents think that regular daily physical activity should be included in the school curriculum for all students (K-12). In a study on homeschooling and parental attitudes toward physical activity and child activity levels, DeVoe (1995) found results similar to research conducted with parents of children in public schools. Homeschool parents felt positively about physical activity. Although the parents had positive attitudes toward physical activity, the homeschooled children were not physically active. A low correlation was found between the mother's attitude toward physical fitness and the child's physical activity level. No relationship was found between the father's attitude toward physical fitness and his child's physical activity level. DeVoe (1995) reported that the results of the study may be due to several factors, including few outside influences such as physical education teachers, no time designated

for physical activity during the homeschool day, physical fitness being a lower priority than academics, and homeschool parents not knowing how to provide the physical activity needed by their children.

Parental attitudes of physical education activity are crucial in the homeschool population, as the parent decides the academic schedule for their child. If the parents are not physically active or do not see the benefit of physical activity, physical education may not be a subject they will include in their homeschool curriculum nor would it be a class in which they are interested in having their child participate. While parents' perceptions of physical education are positive, many parents still perceive physical education as less important than other academic subjects (Sheehy, 2011).

With the steady growth in the homeschool population, and the rising rate in childhood obesity, it is imperative to consider the factors that contribute to increasing physical activity. Parental support and encouragement is crucial in the promotion of physical activity. Therefore, the purpose of this exploratory study is to provide insight into the parental attitudes toward physical education activity among parents whose children attend public school, parents whose children are homeschooled, and parents whose children are homeschooled and attend a homeschool physical education program at an institution of higher education.

CHAPTER 3

METHODS

Participants

The participants in this study were a convenience sample of parents whose children are homeschooled or attend public school. Public school participants were recruited from public school physical education classes, and parent gatherings such as parent and teacher association (PTA) meetings in Nevada, Utah, California, and Texas. Homeschool parent participants were recruited from homeschool conventions and cooperatives (co-ops) in Nevada, Utah, California, and Texas. Additionally, homeschool parents were recruited from homeschool physical education programs at institutions of higher education in New Mexico, Indiana, Ohio, Wisconsin, Iowa, Alabama, New York, West Virginia, North Carolina, and Kentucky. All participants provided informed consent. Approval from the University of Utah Institutional Review Board was obtained prior to conducting the study.

Instrumentation and Procedures

The Physical Education Activity Attitude Scale (PEAAS; Mowatt, DePauw, & Hulac, 1988) was utilized to assess parental attitudes toward physical education activity

(Appendix). This instrument was designed to examine attitudes toward physical activity as it occurs in a physical education setting (Valdez, 1997). The questionnaire consists of 20 statements that are divided into three subcategories of theoretical attitude constructs including:

1. General attitude (GA) statements 1, 3, 4, 10, and 20.

General attitudes represent one's personal feelings or attitudes toward physical activity.

2. Physical education attitude (PEA), statements 5, 8, 13, 14, 16, and 18.

Physical education attitudes represent how one viewed physical education as an offering in the curriculum.

3. Scientific basis attitude (SBA) statements 2, 6, 7, 9, 11, 12, 15, 17, and 19.

Scientific basis attitudes describe how one assesses the scientific benefits of exercise.

All participants had the opportunity to either complete a paper version of the questionnaire or an online version of the questionnaire through Qualtrics. In the public schools, a PTA member administered the paper version of the questionnaire at a PTA meeting at each participating school. The principal investigator provided a self-addressed envelope in which the paper version of the questionnaire was to be returned via U.S. mail. For participants who chose to complete the questionnaire online, the website link to the online version of the questionnaire was emailed to PTA members by the PTA president or PTA secretary. Public school parents in Nevada, Utah, California, and Texas participated in this study. This included public school parents from 6 elementary schools, 3 middle schools, and 2 high schools.

The paper version of the questionnaire was made available to homeschool parents at homeschool conventions and cooperatives in Nevada, Utah, California, and Texas. A participant of the convention or cooperative administered the questionnaire. The principal investigator provided a self-addressed, stamped envelope in which the paper version of the questionnaire was to be returned via U.S. mail. For convention and cooperative participants who chose to complete the questionnaire online, the website link to the online version of the questionnaire was emailed by the leaders of the convention or cooperative.

During orientation for the physical education class at an institution of higher education, the class instructor administered the paper version of the questionnaire to homeschool parents whose children participated in the class. The principal investigator provided a self-addressed, stamped envelope in which the paper version of the questionnaire was to be returned via U.S. mail. For programs in which there was no formal orientation, the physical education class instructor emailed the homeschool parents the website link to complete the online version of the questionnaire. Parents of children who attend homeschool physical education programs at institutions of higher education in New Mexico, Indiana, Ohio, Wisconsin, Iowa, Alabama, New York, West Virginia, and Kentucky participated in this study.

Scoring the Instrument

The questionnaire used a 5-point Likert Scale ranging from strongly agree-5, agree-4, don't know-3, disagree-2, to strongly disagree-1. The maximum possible attitude scaled score was 100 points and the lowest score was 20 points. The higher the

scaled scores, the more positive the participant's attitude toward physical education activity is. A panel of experts established content validity and there is test-retest reliability coefficient of .80 (Mowatt et al., 1988; Park, 1995; Valdez, 1997).

Statistical Analysis

A total of 203 participants with complete questionnaire data were used in all analyses. Incomplete questionnaires were not included in the results. Data from the questionnaire were entered into an excel file. Responses on the returned PEAAS questionnaires were used to examine parental attitudes towards physical education activity. Descriptive statistics were performed on all variables including means and standard deviations. For parental attitudes, an ANOVA was employed to test the differences in parental attitudes towards physical education activity among parents whose children attend public school, parents whose children are homeschooled, and parents whose children are homeschooled and attend a homeschool physical education program at an institution of higher education. The initial alpha level was set at $p \leq 0.05$ and all analyses were carried out using SPSS v22.0 statistical software package.

CHAPTER 4

RESULTS

A total of 203 parents completed the PEAAS survey, with information for 406 children collected. The data were collected from parents of 136 homeschooled children, parents of 117 children who are homeschooled and participate in a physical education program at an institution of higher education, as well as parents of 153 children who attend a public school.

The mean for the overall group included 52% male and 48% female children in the sample. Of these children, 69.2% were elementary school age, 13.6% middle school age, and 17.2% high school age. For all setting groups the middle class (\$32,500-\$99,999) was the highest mean percentage (53.9%) reported. Some of the children (34.5%) participated in physical education class 0 days per week. Of the 65.5% of the children who did participate in physical education class, 29.8% participated 3 or more days per week and 26.8% participated only 1 day per week. Although 35.2% of the children had 0 minutes of physical education class; 36.7% of the children attended a physical education class that lasted more than 45 minutes. For the overall group, parents reported that 62.6% of children participated in team sports. These sports included activities such as dance, gymnastics, soccer, karate, volleyball, basketball, Olympic

weight lifting, Crossfit, swimming, and rollerblading. The results showed that for all setting groups, 35% of the parents who completed the survey were physically active for 4-6 hours per week and 34.2% were physically active for 1-3 hours per week.

Descriptive statistics are reported in Table 1. When analyzing the data by group it was found that most (57.4%) of the homeschool children who participated in a physical education class had the class 1 day a week, and 30.9% had the class 3 or more days a week. Most (50.3%) of the children in public school participated in a physical education class 3 or more days a week, and 20.3% participated in a physical education class 1 day a week. Almost all (97.4%) of the homeschool children reported attending a physical

Table 1. Descriptive Statistics.

		Homeschool with Physical Education	Homeschool	Public School	Settings Mean
Child Gender	Male	74 (54.4%)	57 (48.7%)	80 (52.3%)	211 (52.0%)
	Female	62 (45.6%)	60 (51.3%)	73 (47.7%)	195 (48.0%)
Child Grade Level					
	Elementary School	106 (77.9%)	85 (72.6%)	90 (58.8%)	281 (69.2%)
	Middle School	16 (11.8%)	17 (14.5%)	22 (14.4%)	55 (13.6%)
	High School	14 (10.3%)	15 (12.8%)	41 (26.8%)	70 (17.2%)
Socioeconomic Status					
	Lower	12 (8.8%)	19 (16.2%)	18 (11.8%)	49 (12.1%)
	Middle	95 (69.9%)	69 (59.0%)	55 (35.9%)	219 (53.9%)
	Upper	29 (21.3%)	29 (24.8%)	80 (52.3%)	138 (34.0%)
Physical Education Days per week					
	0 days	5 (3.7%)	114 (97.4%)	21 (13.7%)	140 (34.5%)
	1 day	78 (57.4%)	0	31 (20.3%)	109 (26.8%)
	2 days	11 (8.1%)	1 (0.9%)	24 (15.7%)	36 (8.9%)
	3 or more days	42 (30.9%)	2 (1.7%)	77 (50.3%)	121 (29.8%)
Length of Physical Education Class					
	0 minutes	6 (4.4%)	114 (97.4%)	23 (15.0%)	143 (35.2%)
	45 minutes or less	56 (41.2%)	1 (0.9%)	57 (37.3%)	114 (28.1%)
	More than 45 minutes	74 (54.4%)	2 (1.7%)	73 (47.7%)	149 (36.7%)
Team Sports					
	Yes	69 (50.7%)	78 (66.7%)	107 (69.9%)	254 (62.6%)
	No	67 (49.3%)	39 (33.3%)	46 (30.1%)	152 (37.4%)
Parent Physical Activity					
	Less than one hour	21 (15.4%)	10 (8.5%)	23 (15.0%)	54 (13.3%)
	1-3 hours	59 (43.4%)	34 (29.1%)	46 (30.1%)	139 (34.2%)
	4-6 hours	42 (30.9%)	48 (41.0%)	52 (34.0%)	142 (35%)
	7 hours or more	14 (10.3%)	25 (21.4%)	32 (20.9%)	71 (17.5%)

education class 0 days a week. The majority (54.4%) of the homeschool children who participated in a physical education class reported the length of the physical education class as being more than 45 minutes. Similarly, most (47.7%) of the children in public school participated in a physical education class for more than 45 minutes. Almost all (97.4%) of the homeschool group had 0 minutes in a physical education class. In all groups most children participated in team sports. Most (41.0%) parents in the homeschool group participated in physical activity 4-6 hours a week. Similarly, most (34.0%) parents in the public school group participate in physical activity 4-6 hours a week.

The total PEAAS scores were analyzed to look at the parents' attitudes of physical education activity among the groups. The mean total PEAAS score for all groups was 75.94 ($SD = 7.59$). The mean score for the parents of children who are homeschooled was 74.35 ($SD = 6.76$). The mean score for the parents of children who are homeschooled and participate in a physical education class was 74.57 ($SD = 6.11$). The mean total score for the parents whose children attend public school was 78.36 ($SD = 8.73$). A statistically significant difference among setting groups (i.e., setting main effect) was found ($F(2, 403) = 13.274, p < 0.001$). On average, public school parents scored 3.79 points higher on the PEAAS questionnaire compared to the parents whose children are homeschooled and participate in a physical education class (95% CI = 1.70–5.88, $p < 0.001$). The mean difference represented a small effect size (Cohen's $d = 0.21$). Similarly, public school parents on average scored 4.01 higher points on the PEAAS questionnaire compared to both groups of the parents whose children are homeschooled (95% CI = 1.83–6.19, $p < 0.001$). This difference also represented a small effect size

(Cohen's $d = 0.21$).

The data were also analyzed by category (general attitude, physical education, and scientific basis) rather than total score. For the general attitudes category, the mean total group mean score was 18.07 ($SD = 2.45$). The mean score for the homeschool group was 17.77 ($SD = 2.06$). The mean score for the parents of the homeschool group that participates in a physical education class was 17.78 ($SD = 1.99$). The mean score for the public school group was 18.57 ($SD = 2.98$). There was a statistically significant difference among the groups ($F(2, 403) = 5.07, p = 0.007$). On average the parents in the public school group scored 0.79 points higher on the PEAAS questionnaire in general attitudes compared to the parents in the homeschool group that participates in a physical education class (95% CI = .10–1.48, $p = 0.019$). This mean difference represented a small effect size (Cohen's $d = 0.13$). Likewise, on average, the public school parents scored 0.80 points higher on the PEAAS questionnaire than parents whose children are homeschooled (95% CI = .08–1.52, $p = 0.23$). This mean difference represents a small effect size (Cohen's $d = 0.13$). Physical Education Activity Attitude Scale Scores are reported in Table 2.

For the physical education category, the mean score was 21.62 ($SD = 3.40$). The score for the homeschool group was 20.73 ($SD = 3.46$). The score for the parents of the homeschool group that participates in a physical education class was 21.15 ($SD = 3.03$). The score for the public school group was 22.71 ($SD = 3.40$). There was a statistically significant difference among the groups ($F(2, 403) = 13.988, p < 0.001$). On average, the public school group parents scored 1.56 points higher on the PEAAS questionnaire than the parents in the homeschool group that participates in a physical education class

Table 2. Physical Education Activity Attitude Scale Scores

		N	Mean	Std. Deviation
Total PEAAS Score	Homeschool with PE	136	74.57	6.11
	Homeschool	117	74.35	6.76
	Public School	153	78.36	8.73
	Total	406	75.94	7.59
General Attitudes	Homeschool with PE	136	17.78	1.99
	Homeschool	117	17.77	2.06
	Public School	153	18.57	2.98
	Total	406	18.07	2.45
Physical Education	Homeschool with PE	136	21.15	3.03
	Homeschool	117	20.73	3.46
	Public School	153	22.71	3.40
	Total	406	21.62	3.40
Scientific Basis	Homeschool with PE	136	35.71	3.58
	Homeschool	117	35.86	3.78
	Public School	153	36.43	4.18
	Total	406	36.02	3.87

(95% CI = .62–2.49, $p < 0.001$). The effect size was small (Cohen's $d = 0.19$). The public school group parents scored 1.98 points higher on the PEAAS questionnaire than the parents in the homeschool group that participates in a physical education class (95% CI = .62–2.49, $p < 0.001$). The effect size was small (Cohen's $d = 0.19$). The public school group parents scored 1.98 points higher on the PEAAS questionnaire than parents in the homeschool group (95% CI = 1.01–2.96, $p < 0.001$). The effect size was small (Cohen's $d = 0.24$).

For the scientific basis category, the mean total group score was 36.02 ($SD = 3.87$). The mean score for the homeschool group was 35.86 ($SD = 3.78$). The score for

the parents of the homeschool group that participates in a physical education class was 35.71 ($SD = 3.58$). The mean score for the public school group was 36.43 ($SD = 4.18$). There was no statistically significant difference among groups, ($F(2,403) = 1.404, p = 0.247$).

Using the total PEAAS scores, the main effect of parent physical activity was also statistically significant, implying there is a difference in total scores across parental physical activity levels ($p = 0.008$). On average, parents who participated in physical activity 4-6 hours per week scored 2.99 points higher on the PEAAS questionnaire compared to parents who participated in physical activity 1-3 hours per week (95% CI = .89–5.09, $p < 0.001$). This is a small size effect (Cohen's $d = 0.17$). Additionally, parents who participated in physical activity for 7 hours or more per week on average scored 4.64 points higher on the PEAAS questionnaire than those who were physically active for 1-3 hours per week (95% CI = .28–7.20, $p < 0.001$). This mean difference is a small size effect (Cohen's $d = 0.23$). Significant difference among groups on the PEAAS questionnaire is reported in Table 3.

Finally, a two-way-interaction was found for socioeconomic status (SES) and setting accounting for 4.1 percent of the variance. Low-income parents of children attending public schools had significantly higher PEAAS scores compared to all other SES-setting groups ($p < 0.001$; see Figure 1).

Table 3. Significant Difference Among Groups on the PEAAS Questionnaire

	Average Point Difference	95% CI	P value	Cohen's D
Total PEAAS Score				
Public School compared to Homeschool with PE	3.79	(1.70-5.88)	<0.001	0.21
Public School compared to Homeschool	4.01	(1.83-6.19)	<0.001	0.21
General Attitudes				
Public School compared to Homeschool with PE	0.79	(0.10-1.48)	0.019	0.13
Public School compared to Homeschool	0.80	(0.80-1.52)	0.23	0.13
Physical Education Attitudes				
Public School compared to Homeschool with PE	1.56	(0.62-2.49)	<0.001	0.19
Public School compared to Homeschool	1.98	(1.01-2.96)	<0.001	0.24
Parent Physical Activity				
4-6 hours compared to 1-3 hours	2.99	(0.89-5.09)	<0.001	0.17
7 hours compared to 1-3 hours	4.64	(0.28-7.20)	<0.001	0.23

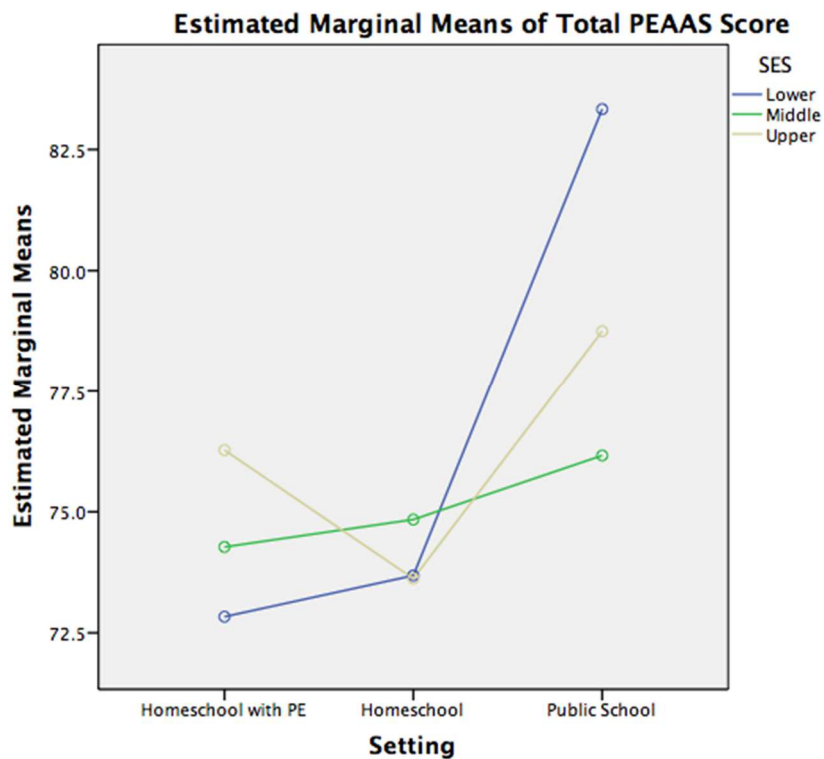


Figure 1. Influence of setting and socioeconomic status on PEAAS scores.

CHAPTER 5

DISCUSSION

This exploratory research examined the relationship of parental attitudes among parents whose children are homeschooled, parents whose children are homeschooled and participate in a physical education class at an institution of higher learning, and parents whose children attend a public school. The results reveal that all participant groups in the study displayed a positive attitude toward physical education activity. No significant difference was found in the attitudes toward physical education activity between the parents of the homeschool group and the parents of the homeschool group that participates in a physical education class. Though it may be expected that the homeschool group that participates in a physical education class would have a significantly more positive attitude than that of the homeschool group, that was not the finding in this study. There may be several factors that contribute to the results in this study. One factor for the results may be the primary motivation for the homeschool families' participation in the physical education programs at institutions of higher education. Socialization may be the primary motivator in the homeschool families' participation in the physical education program. As homeschool parents often face the issue of socialization because their children do not attend public schools, they often seek co-ops as a way to socialize their children. Thus, parents may attend co-ops such as a

physical education program as a way for their child to meet regularly for educational and social support (Wachob, 2015). Consequently, even though they are participating in a physical education class, the homeschool parents' primary motivation may be for socialization. Another factor that may have contributed to the results may be the focus of the homeschool physical education programs. Often, the two primary purposes for providing homeschool physical education programs at institutions of higher education are to provide student teaching experience for those teaching the physical education class and to provide physical education opportunity for the homeschooled child (Callahan & Lehwald, 2008). Since the primary focus is not to educate the parents, the programs often miss the unique opportunity to discuss the benefits of physical education activity with the parents that are in attendance. Educating the homeschool parents about the benefits of physical education activity may lead to the homeschool parents having a more positive attitude about physical education activity.

Homeschool physical education programs at institutions of higher education should focus more on parental involvement and education. A major benefit of these programs is that the parents are regularly attending the physical education class, providing an opportunity to get the parents involved. Homeschool parents could gain a better understanding of the importance of physical activity while observing and participating in the learning that occurs in a physical education class. DeVoe (1995) found that, although homeschool parents have positive attitudes toward physical activity, the homeschooled children were not physically active. Additionally, the author reported that the results of the study might be due to several factors including homeschool families having few outside influences such as a physical education teacher. Therefore, as the

homeschool families have access to a physical education teacher through the homeschool physical education program, efforts should be made to get the homeschool parents that attend the physical education classes more involved. This may lead to parents providing more opportunities for their children to be physically active outside of the physical education co-op because they have a better understanding of the benefits of physical education activity and possess strategies for implementation in daily life. Additionally, as information about co-ops is often shared among homeschool parents, a more positive experience for parents who attend the physical education class may lead to an increase in the number of homeschool children who attend the homeschool physical education class. Therefore, future efforts should be made in these programs to not only provide a space where parents themselves can participate in physical activity, but also to educate the parents on the importance of physical education activity in their homeschool curriculum. Parents will be more motivated to encourage their children to be physically active if they are aware of the benefits of physical activity (Tarpomanova & Filkova, 2016).

The public school parents scored higher than both homeschool groups in the total PEAAS score as well as in the general and physical education categories. The literature has shown that public school parents are generally positive about physical education programs and believe that more physical education would be beneficial to control or prevent childhood obesity (NASPE, 2010).

The rate of childhood obesity is the highest among low-income communities (Kumanyika & Grier, 2006). Cultivating and fostering family support for physical activity is a critical component in physical activity interventions for low-income communities (Appelhans & Li, 2016). In this study, the low-income public school

parents scored higher on the PEAAS questionnaire than any other group. This suggests that the parents in this group have a positive attitude about physical education activity and would benefit from physical activity intervention programs. A multicomponent approach such as a Comprehensive School Physical Activity Program (CSPAP) has been found to be a physical activity intervention that has the most influence on the increase of the overall physical activity levels of children (Cipriani, Richardson, & Roberts, 2012). Brusseau, Hannon, and Burns (2016) found that children from low-income families who participated in a 12-week CSPAP program significantly improved their levels of physical activity. Future efforts should include the implementation of a CSPAP in schools with low-income families as a way to increase physical activity.

All groups showed a more positive attitude in the area of scientific basis as compared to general and physical education categories. These findings suggest that parents are aware and are optimistic about the scientific benefits of physical activity. Many parents already believe in the importance of physical activity for their children (Borra, Kelly, Shirreffs, Neville, & Geiger, 2003; Pyper et al., 2016), thus support behaviors such as modeling physical activity by a parent is important. A child's health behaviors are strongly influenced by their parents. A parents' own physical activity level as observed by their child has been positively associated with increased child physical activity (Pyper et al., 2016). The parents who were physically active for more time during the week on average scored more points on the PEAAS questionnaire than the parents who were less physically active. Parents who are physically active are indeed going to have a more positive attitude for physical education activity. Parents who are more active have children that are more active (Virgilio, 1990).

In looking at the descriptive statistics, it is evident that there were parents who were not aware there is a difference between physical education, team sports, and physical activity as it occurs at recess or playing outdoors. Thus, the length of time spent in physical education class and the number of days of physical education class may not have been reported accurately. These results are similar to studies which found that parents wrongly classified physical activity levels of their children (Corder et al., 2012; Lau et al., 2013). This would suggest the need to educate parents about the type of learning that occurs in physical education class and how it differs from recess and team sports. Involving families and communities in physical activities with or for the benefit of the child is an important role of the physical education teacher (Cipriani et al., 2012). Although parents have a positive attitude about physical education, many parents still view physical education as less important than other academic subjects (Sheehy, 2011). Parents may not fully understand the benefits of physical education (Virgilio, 1990). Research has shown that homeschool children participate in little to no physical education (Fletcher, 1997). The teachers in the homeschool physical education programs and public school physical education teachers should provide opportunities for parents to get involved in physical education activities that demonstrate what the child is learning in the physical education class. Cipriani et al. (2012) reported that the foundation for successful parent involvement is communication. It is imperative that the physical education teacher provides parents with information about physical activity and physical education. Borra et al. (2003) found that parents and children are in need of positive realistic approaches to getting fit. This may include having questions answered about obtaining a healthy lifestyle, or ideas for physical activity games in which the entire

family could enjoy. Creating active events such as family fun runs, family field days, family fitness nights, PE homework, newsletters, parent seminars, parent-teacher conferences, PTA demonstrations, and health-fitness fairs can provide opportunities to educate and get parents involved in the physical education activity (Cipriani et al., 2012; Virgilio, 1990).

Limitations and Future Recommendations

Due to the exploratory nature of the study, it is important to acknowledge limitations in the study design. A convenient sample of participants was used in this study. The participants were not randomly selected or randomly assigned into groups. Additionally, the participants may be a biased sample as they are volunteering to participate in this study. All information was obtained from questionnaire data, thus parental attitudes as well as information about physical education activity was parent-reported. There may have been some confusion in the difference between team sports, physical education, and physical activity that may occur at recess or playing outdoors. As such, the parent reported information might not truly represent the physical education activity of their child. Another potential limitation in the study is that, because it is the first study of its kind, it is difficult to make generalizations regarding the results. There could have been some bias due to the fact that the study used data from multiple communities where homeschool curriculum requirements and co-op opportunities could differ. States vary on curriculum requirements, instruction time, and assessment requirements for homeschool families. A physical education course may be required in some states and not in others. Additionally, states vary on the number of co-ops available

to homeschool families.

The analyses of data collected in this study can only state relationships but cannot state causal relationships. With a small sample size or uneven groups, interactions are often unstable in exploratory data, which can lead to missing data that could affect the main results. Effect size is often affected when the sample size is small.

Despite the limitations, the results of this study provide valuable information concerning parental attitudes toward physical education activity from parents whose children are homeschooled and parents whose children attend public school. Parents in this study showed a positive attitude toward physical education activity. Additionally, parents are aware and are optimistic about the scientific benefits of physical activity. Physical education practitioners and advocates should use the information from this study to inform future efforts to further educate parents and school administrators about the benefits of physical education activity. There is currently a trend for school administrators to cut physical education time due to academic pressure. However, research has found that physical activity can be added to the school curriculum without hindering student academic success (Trudeau & Shephard, 2008). This study shows that parents have positive attitudes about physical education activity as part of the learning curriculum. Thus, this information should be used for the development of positive intervention strategies to keep the physical education classes as part of the curriculum in schools where they exist, and to promote the inclusion of physical education classes in schools as part of the curriculum where they do not exist. This would include communication with the policy makers about both the importance of physical education activity as well as the parental views of physical education activity in the curriculum.

Additionally, as homeschool parents plan the curriculum for their child, the information should be used to encourage homeschool physical education programs at universities of higher education to do as much as possible to encourage homeschool parents to get themselves and their children more involved in physical activity. Finally, this information should be used to encourage homeschool parents whose children do not participate in a physical education program to include physical education activity in their curriculum.

Summary

This exploratory research sought to provide insight into parental attitudes among parents whose children are homeschooled, parents whose children are homeschooled and participate in a physical education class at an institution of higher learning, and parents whose children attend a public school. The results showed that parents in all groups have a positive attitude about physical education activity. The public school parents scored higher than both homeschool groups in the total PEAS score as well as in the general and physical education categories. Although there was no significant difference among the groups in the scientific basis category, the results showed a more positive attitude among all parents in the scientific basis category as compared to the other categories. Parents who are more physically active during the week displayed a more positive attitude for physical education activity. Additionally, parents from low-income public schools scored a more positive attitude than any other group. Information from this exploratory study should be used to advocate for the inclusion of physical education classes in the curriculum for students who are homeschooled, as well as for students who

attend public schools. Furthermore, physical education teachers should provide more opportunities for parents to be educated on the learning that takes place in a physical education class. This can be accomplished through efforts such as providing parents with websites that provide information about physical education, sending out newsletters about physical activities occurring in the community, organizing parent seminars, hosting health fitness fairs, and involving local media in physical education events.

APPENDIX

PHYSICAL EDUCATION ACTIVITY ATTITUDE SCALE

Approximately how many minutes on average do you intentionally participate in <i>physical activity</i> (play soccer, play basketball, hike, jog, ride bikes) <i>per week</i> ? Less than one hour <input type="checkbox"/> 1-3 hours <input type="checkbox"/> 4-6 hours <input type="checkbox"/> 7 hours or more <input type="checkbox"/>
Family Socioeconomic status: Lower (Family income less than \$32,499) <input type="checkbox"/> Middle (\$32,500- 99,999) <input type="checkbox"/> Upper (\$100,000+) <input type="checkbox"/>

Physical Education Activity Attitude Scale

The following are statements about physical activity or physical activity programs. Please circle the answer that best describes your opinion about each statement.

5 = Strongly Agree 4 = Agree 3 = Undecided 2 = Disagree 1 = Strongly Disagree

1. **It is important to me to be strong and physically fit.**
5 4 3 2 1
2. **Exercise provides an important relief from the stresses of everyday life.**
5 4 3 2 1
3. **I enjoy the physical feeling one gets after strenuous exercise.**
5 4 3 2 1
4. **Maintaining good physical condition takes more effort than it is worth.**
5 4 3 2 1
5. **In terms of personal-social development, one may receive more practical benefit from a good physical education class than from any other class in the school curriculum.**
5 4 3 2 1
6. **An active lifestyle is necessary for optimal physical and mental functioning later in life.**
5 4 3 2 1
7. **Exercise is the best way to insure a youthful looking agile body.**
5 4 3 2 1
8. **Physical education classes are very important part of the school curriculum.**
5 4 3 2 1
9. **Participation in physical activity is essential for a quality life, regardless of sex and ethnic background.**
5 4 3 2 1
10. **There are lots of things more important in life than one's level of physical fitness.**
5 4 3 2 1
11. **Proper exercise causes one to have good posture and a strong, sturdy body throughout life.**
5 4 3 2 1
12. **Good health throughout life is related to one's level of physical activity.**
5 4 3 2 1

13. Physical education should be offered at every grade level, grades one through college.
5 4 3 2 1
14. Physical education classes, if well-taught, should be a required subject for grades 1 to 12.
5 4 3 2 1
15. Physically active people are generally more mentally alert than less active people.
5 4 3 2 1
16. If there is a need to reduce the number of courses offered in the school program, physical education should be one of the courses dropped.
5 4 3 2 1
17. Most adults get all the exercise they need just doing normal daily activities.
5 4 3 2 1
18. Physical activity classes are just as important as academic classes.
5 4 3 2 1
19. There is scientific basis for the value of physical activity.
5 4 3 2 1
20. Physical activity is of major importance to my life.
5 4 3 2 1

For each of your school-aged children, please answer the questions below:

Child #1

Grade level:_____ Age:_____ Male Female

Homeschool Public School Charter School

Participates in a Physical Education Program

If yes,

Number of days this child participates in a Physical Education Program_____

Length of Physical Education class_____

Team sports this child participates in _____

Child #2

Grade level:_____ Age:_____ Male Female

Homeschool Public School Charter School

Participates in a Physical Education Program

If yes,

Number of days this child participates in a Physical Education Program_____

Length of Physical Education class_____

Team sports this child participates in _____

Child #3

Grade level:_____ Age:_____ Male Female

Homeschool Public School Charter School

Participates in a Physical Education Program

If yes,

Number of days this child participates in a Physical Education Program_____

Length of Physical Education class_____

Team sports this child participates in _____

Child #4

Grade level:_____ Age:_____ Male Female

Homeschool Public School Charter School

Participates in a Physical Education Program

If yes,

Number of days this child participates in a Physical Education Program_____

Length of Physical Education class_____

Team sports this child participates in _____

Child #5

Grade level:_____ Age:_____ Male Female

Homeschool Public School Charter School

Participates in a Physical Education Program

If yes,

Number of days this child participates in a Physical Education Program_____

Length of Physical Education class_____

Team sports this child participates in _____

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