Children's Motivation for Physical Activity

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ABSTRACT

The establishment of physical activity routines in the early stages of life is critical to form life-long physical activity habits. Children are motivated for physical activities that they enjoy but research is scarce in children younger than eight years old. Thus, the purpose of this study was to explore why children enjoyed or did not enjoy physical activities and to measure physical activity and perceived motor competence. A convergent parallel mixed-methods study design was employed. First, 2nd, and 3rd grade students at two YMCA afterschool programs wore an accelerometer on the right hip for seven consecutive days, completed Harter's perceived motor competency survey, and took part in focus groups. There was an insufficient number of first grade participants, so they were excluded from the analysis, leaving 16 total participants in 2nd and 3rd grade. There were two 2nd grade and two 3rd grade focus groups. Pearson correlations were conducted with all physical activity, perceived motor competency, demographic, and anthropometric data. Focus group data underwent thematic analysis using an inductive approach. Physical activity data revealed that over half the participants met physical activity recommendations and was similar among each YMCA site. There was a moderate positive correlation between age and percent of time spent in vigorous activity (r=0.542, p=0.045). There were moderate to high positive correlations between school site and percent of time spend in moderate physical activity (r=0.783, p=0.01), percent of time spent in vigorous physical activity (r=0.537, p=0.048), and percent of time spent in moderate to vigorous physical activity (r=0.738, p=0.003). This indicated children at the second school site had higher levels of moderate, vigorous, and moderate to vigorous physical activity. Additionally, the average perceived motor competency score was 3.0 (out of 4). There were no correlations between perceived motor

competency scores and age, grade, focus groups, or school site (p>0.05). There were four over-arching themes which included 1) physical activity is sport, 2) social influence, 3) perceived competence, and 4) physical activity characteristics. Results suggest exposing children early to wide varieties of physical activities may help minimize activities they dislike and build their perceived competence and social bonds.

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CHAPTER ONE
INTRODUCTION

Physical activity habits that are formed at a young age have been shown to track into adulthood (Creswell & Clark, 2017; Gordon-Larsen, Nelson, & Popkin, 2004; Jones, Hinkley, Okely, & Salmon, 2013; Telama et al., 2014). Therefore, the early stages of life are critical time points for the establishment of physical activity behaviors. Young children (0-5 years) primarily accumulate physical activity through play (Bayley, 1936; Cardon, Van Cauwenberghe, & de Bourdeaudhuij, 2011; Frost, Wortham, & Reifel, 2001; Pellegrini & Smith, 1998; Rubin, 1977; Rubin, Watson, & Jambor, 1978; Seefeldt & Haubenstricker, 1982). Play occupies most of their waking hours and is the primary way in which children learn about their bodies and capabilities (Frost et al., 2001; Gallahue, Ozmun, & Goodway, 2006; Malina, Bouchard, & Bar-Or, 2004). Play serves a purpose for enjoyment and recreation without a practical aim such as stacking blocks or digging in the sandbox (Cardon et al., 2011; Frost et al., 2001; Gallahue et al., 2006). During this critical time, play aids as a vital means by which higher cognitive structures are developed (Gallahue et al., 2006; Malina et al., 2004). In addition to cognitive structures, developing a sense of autonomy and initiative is formed (Bayley, 1936; Carmichael, 1970; Haubenstricker & Seefeldt, 1986; Seefeldt & Haubenstricker, 1982). Through a growing sense of independence, autonomy is expressed. Autonomy provides children the ability to manipulate factors, such as boundaries in their environment and choices of play. Furthermore, there is an expanding sense of curiosity, exploration, and active behavior, which is reflective of the child's initiative. Failure to develop autonomy and initiative may lead to negative feelings such as shame, worthlessness, and guilt (Malina et al., 2004). These developmental factors are vital

because they have a direct effect on cognitive and psychomotor functions (Malina et al., 2004). In addition to cognitive and psychomotor development, through play, young children develop their fundamental locomotor, manipulative, and stability skills, which helps them gain control over their body to build a confidence in their movements (Frost et al., 2001; Gallahue et al., 2006; Malina et al., 2004; Pellegrini & Smith, 1998). These fundamental motor skills are a foundation to build upon. This foundation allows for more complex motor skills or specialized motor skills to develop (Frost et al., 2001; Gallahue et al., 2006; Malina et al., 2004).

As young children age and move through childhood (6-12 years), play becomes less and less prevalent (Carmichael, 1970; Gallahue et al., 2006; Pellegrini & Smith, 1998; Poinsett, 1996). Children tend to be drawn to activities that include fundamental motor skills they have developed and they begin to participate in activities, such as sport and structured exercise, with a practical purpose (Balyi, Way, & Higgs, 2013; Gallahue et al., 2006; Haubenstricker & Seefeldt, 1986; Malina et al., 2004; Poinsett, 1996). Even though play may still be part of the accumulation of physical activity, children (6-12 years) tend to accrue most of their physical activity through a combination of sport and physical education class (Côté, Baker, & Abernethy, 2007). During the early portion of childhood (6-8 years), youth reach competence in fundamental locomotor and object control skills but more complex motor and specialized motor skills need to be further developed (Gallahue et al., 2006). Play during these years (6-8 years), may be necessary for more exploration and development, but during this time children start to stray away from play and towards purposeful movements, such as sport and structured exercise (Frost et al., 2001; Gallahue et al., 2006; Malina et al., 2004). This pattern is seen more frequently during the middle stages of childhood (8-10 years) and even more so in the late stages of childhood (10-12

years). During the middle stages of childhood (8-10 year), children begin to refine their fundamental motor skills, and start to develop more specialized motor skills (Gallahue et al., 2006; Haubenstricker & Seefeldt, 1986; Malina et al., 2004; Seefeldt & Haubenstricker, 1982). During the late stages of childhood (10-12 years), some children may have reached maturity and have fully developed their fundamental motor skills and have started to refine specialized motor skills (Gallahue et al., 2006; Malina et al., 2004). This development of motor competence through childhood improves confidence in movements, leading to improved perceived motor competence (Gallahue et al., 2006; Theeboom, De Knop, & Weiss, 1995; Woods, Bolton, Graber, & Crull, 2007). Higher perceived motor competence and physical motor competence leads to higher enjoyment and motivation for an activity (Theeboom et al., 1995; Woods et al., 2007). These factors have an influence on physical activity levels in children.

The physical activity recommendations for children and adolescents are the same in terms of frequency, intensity, time, and type ("U.S. Department of Health and Human Services," 2008). Despite these recommendations, the majority of youth do not engage in sufficient physical activity to meet these recommendations (Troiano et al., 2008). There is a decline in meeting recommendations when children transition into adolescence. Only 8% of adolescents meet physical activity recommendations as opposed to 42% of children meeting recommendations There is decline in physical activity levels in this transition from childhood to adolescence (Olds, Ferrar, Gomersall, Maher, & Walters, 2012; Sallis, Prochaska, & Taylor, 2000; Troiano et al., 2008; Trost et al., 2002).

Previous research has shown a direct link between and physical activity levels and motor skill development (Barnett, Van Beurden, Morgan, Brooks, & Beard, 2009; Stodden et al., 2008).

Children may only participate in those activities which include movements that they have fundamentally developed and begin to specialize. Additional research hypothesizes that it is the youth's perceived motor competence that attenuates to the participation in activities (Delorme, Chalabaev, & Raspaud, 2011). In other words, children and adolescents will participate in those activities they think they are good at or excel at. Engagement in physical activities is a choice, and research has shown that children choose to participate in activities they enjoy (Weiss, Amorose, & Kipp, 2012).

Development of fundamental motor skills, perceived motor competence, and enjoyment may be connected as children tend to enjoy those physical activities they are good at or think they are good at (Scanlan, Carpenter, Lobel, & Simons, 1993). As such, enjoyment of an activity is a determining factor in the motivation for continued participation in regular physical activity (Weiss, 2000). Therefore, to help attenuate this decline in physical activity, there needs to be development of fundamental motor skills and building of perceived motor competence to increase the enjoyment of physical activity and enhance motivation to be physically active.

Motivation has been recognized as an important influence that contributes to participation in regular physical activity (Hagger et al., 2007). Physical activity motivation is defined as the drive or desire by which an individual approaches physical activity (Jodai, Zafarghandi Amir Mahda, & Tous Maryam, 2013; Ryan & Deci, 2000a). Young children (0-5 years) are thought to be inherently motivated to be physically active (Cardon et al., 2011; Sebire, Jago, Fox, Edwards, & Thompson, 2013), which is typically seen through play (Frost et al., 2001; Pellegrini & Smith, 1998; Rubin et al., 1978). However, during the transition into late childhood (10-12 years) and adolescence, physical activity motivation may shift or change, which may result in decreased

physical activity levels (Troiano et al., 2008). Few studies have assessed physical activity motivation in children especially prior to the transition from childhood to adolescence (ages 6-8 years) (Pannekoek, Piek, & Hagger, 2013).

There is a gap in research in children below 8 years that may be attributed to the use of self-reported methods to asses motivation towards physical activity in older youth (10+ years) (Pannekoek et al., 2013; Scott, 1997). It has been assumed that younger children (aged 8 or less) have not yet developed the cognitive capacity to accurately answer self-report measures (Nicholls, 1989; Pannekoek et al., 2013). Children may experience difficulties comprehending questions and properly answering responses to items on questionnaires that were developed for young adults and adolescents (Pannekoek et al., 2013; Scott, 1997). Furthermore, parent proxy is a popular method for obtaining information about young children; however, this method had been deemed inaccurate and a secondary source of data (Pannekoek et al., 2013). Alternate methodological assessments of motivation need to take place for children less than eight years old (Scott, 1997). It is recommended that interviews or focus groups should be used in an area where the research is scarce and when exploring social aspects of life such as motivations and experiences (Green & Thorogood, 2018). When examining individual interviews and focus groups, both have their advantages (Heary & Hennessy, 2006). However, when conducting one-on-one interviews with younger children, there may be feelings of discomfort and unwillingness to speak due to the unfamiliarity with the interviewer (Morgan, 1993). Focus groups may offer a better method of assessment as they provide a comfortable atmosphere where the participants can express their thoughts, feelings, and experiences among their peers (Gibson, 2007; Morgan, Gibbs, Maxwell, & Britten, 2002).

Furthermore, the methodology to assess motivation for physical activity includes either exclusively quantitative or qualitative methods (Munroe-Chandler, 2005). A mixed methods approach would combine the strengths of qualitative and quantitative methodology to build a greater insight into motivations for physical activity in children eight years or less (Creswell & Clark, 2017; Schoonenboom & Johnson, 2017; Venkatesh, Brown, & Sullivan, 2016). As such, this combined approach can provide an understanding that might be missed using a single method (Johnson & Onwuegbuzie, 2004). Mixed methods can strengthen evidence through confirmation and substantiation of findings while the different data collection methods can neutralize each method's biases or weaknesses (Creswell & Clark, 2017).

Statement of Problem

Although numerous research studies have been conducted on motivation in older children and adolescents in the sport, physical education, and educational domains, little research has focused on the physical activity domain in younger children (Pannekoek et al., 2013; Standage et al., 2003). It has been assumed that children have not yet developed the cognitive capabilities and capacity to accurately answer self-report motivation questionnaires (Nicholls, 1989). This misconception may be due to the use of questionnaires that were developed for adults or adolescence (Scott, 1997). Therefore, the use of alternate methods needs to be implemented for children eight and younger. The use of focus groups designed for children can aid in the exploration of what motivates children to be physically active (Rebok et al., 2001; Riley, 2004). Additionally, the use of quantitative methods to collect physical activity and perceived motor competency data will enhance the understanding of the research questions.

Statement of Purpose

The primary aim of this study was to explore why children enjoy or do not enjoy physical activities through the use of focus groups. By asking the children their likes and dislikes of activities, information regarding enjoyment or unenjoyment can be gathered. Enjoyment of an activity is a main factor that drives the motivation to participate in an activity (Whitehead & Biddle, 2008). This study intended to explore the enjoyment, a determinant of motivation, for why children choose to engage in certain physical activities.in three different grades (1st, 2nd, and 3rd). This dissertation will also include an objective measure of physical activity and an assessment of perceived motor competency. The primary aim of this dissertation is to explore why children enjoy or do not enjoy physical activities during focus groups and link their responses to their physical activity levels and perceived motor competency.

CHAPTER TWO
LITERATURE REVIEW

As children grow and transition into later stages of life, physical activity behaviors and patterns change from play to more purposeful movements (Craigie, Lake, Kelly, Adamson, & Mathers, 2011; Gordon-Larsen et al., 2004; Jones et al., 2013; Taylor, Ntoumanis, Standage, & Spray, 2010; Telama et al., 2014). Young children (birth-5 years old) tend to accumulate physical activity through play (Pellegrini & Smith, 1998; Rubin, 1977; Rubin et al., 1978). Children (6-12 years old) also accumulate some their physical activity through play, but during this time, children tend to start to become involved in sport and exercise while engaging in less play (Pellegrini & Smith, 1998). When children transition to adolescence (13-17 years old), they accrue most of their physical activity through sport and exercise (Eccles, Barber, Stone, & Hunt, 2003).

Physical activity recommendations for young children (0- 5 years) do not include an intensity component and call for structured and unstructured play time (NASPE, 2009; "U.S. Department of Health and Human Services," 2018). While no physical activity data is available on comprehensive samples of young children (0-5 years), in preschoolers (3-5 years old), only 54% of meet those physical activity recommendations (Tucker, 2008). Physical activity recommendations for children (6-17 years) include intensities of moderate to vigorous ("U.S. Department of Health and Human Services," 2018). Only 42% of children (6-11 years) meet physical activity recommendations (Troiano et al., 2008). Even more alarming, only 8% of adolescents meet physical activity recommendations (Troiano et al., 2008). As such, the majority of states (83%) offer no daily elementary school recess (Slater, Nicholson, Chriqui, Turner, & Chaloupka, 2012). More recent evidence suggests physical activity patterns that are formed

during childhood are tracked to adulthood (Craigie et al., 2011; Gordon-Larsen et al., 2004; Jones et al., 2013; Telama et al., 2014).

When comparing children to adults, children participate in physical activities for different reasons than adults. Young children seem to participate in physical activities for the sheer joy of the activities whereas most adults participate in physical activities to maintain or improve health (Irwin, He, Bouck, Tucker, & Pollett, 2005). Many different factors may play a role in why children participate in physical activity or are sedentary. Factors such as social influence, motor development, perceived motor development, and enjoyment all influence motivation to engage in physical activity (Kavussanu & Roberts, 1998; Sallis, Owen, & Fisher, 2015). One conclusion for the decline in physical activity from during childhood through adulthood is that there may be a link between development of motor skills and physical activity levels (Barnett et al., 2009; Stodden et al., 2008; Williams et al., 2008). Others speculate that it is children's perceived motor competence that influences to the participation in activities (Delorme et al., 2011). However, research has shown that children choose to participate in activities they enjoy (Weiss et al., 2012). Development of fundamental motor skills, perceived motor competence, and enjoyment may be connected as children enjoy those physical activities they are good at or think they are good at (Scanlan et al., 1993). Therefore, to help this decline in physical activity there needs to be development and competence of fundamental motor skills and building of perceived motor competency to increase the enjoyment of physical activity. As such, enjoyment of an activity is a determining factor in the motivation for continued participation in regular physical activity (Weiss, 2000).

Motivation is a degree of determination, drive, or desire with which an individual approaches or avoids a behavior (Kleinginna & Kleinginna, 1981; Ryan & Deci, 2000b). Motivation has a direction and intensity which is reflective of effort (Kleinginna & Kleinginna, 1981; Ryan & Deci, 2000b). As a child ages, physical activity levels decline, which may be an indicator of decline of motivation for physical activity.

Different theoretical frameworks have been created in attempt to explain human behavior and motivation behind those behaviors. Two common motivation theories are Self-Determination Theory and Achievement Goal Theory. These frameworks have been applied to physical education, sport, and physical activity research in adults, adolescents, and children (Pannekoek et al., 2013). However, limited research regarding children's motivation for physical activity has been established and much is generalized to children from findings in adolescents and adults (Pannekoek et al., 2013). The purpose of this chapter is to review the literature of motivation and physical activity related research and how its related to enjoyment and perceived motor competence. Additionally, a review on the research on two motivation theoretical frameworks, Self-Determination Theory and Achievement Goal Theory, will be conducted. These frameworks provide the best insight to figure out why children like or dislike activities, as a way to look at their motivation.

Self-Determination Theory

The Self-Determination Theory a metatheory and is composed of three sub-theories: cognitive evaluation theory, organismic integration theory, and the basic psychological needs theory (Deci & Ryan, 1985). The cognitive evaluation theory differentiates extrinsic and intrinsic motivation, with the focus on determinants of intrinsic motivation (Deci & Ryan, 1985). Physical

activities in the absence of external contingencies and supported by interest, enjoyment, and choice are considered to be intrinsically motivated. However, not everyone inherently enjoys engagement in physical activities, so they may participate in physical activity for reasons that are extrinsic to the individual.

The second sub-theory is organismic integration theory, which extends from the cognitive evaluation theory to the distinction of the types of extrinsic motivation (Ryan, 1982). The organismic integration theory which details a graded continuum of differing types of motivation/regulation styles that range from least self-determined types to more self-determined types. The least self-determined regulation type is *external regulation* which occurs when an individual engages in a behavior for the purpose of fulling an external demand such as a reward or avoidance of punishment. Next on the continuum is *introjected regulation* which the individual engages in a behavior from external pressures such as avoidance of shame, guilt, or need for approval. *Identified regulation* is when engagement in a behavior is thought to be important and have some sort of value to the individual usually brought on by health. Finally, the most self-determined form of external motivation is *integrated regulation* which occurs when the behavior is done by choice and is closely tied with personal value or identity. This form of regulation is the most autonomous form of externally regulated motivation and the activity is separate from the outcome. There is a *threshold of autonomy* located between introjected and identified regulation types. This threshold is the point where the activity is being done by choice rather than an external factor. This point is a common place to group self-determined types of motivational constructs (i.e. identified, integrated, and intrinsic) and less self-determined types of motivational constructs (i.e. external, introjected, and amotivation). It is important to note that

this continuum does not represent a development of individuals but rather the process by which individuals assimilate behaviors. An individual can be at any point on the continuum and move along it in either direction in addition to simultaneously hold multiple motives to engage in physical activity.

Finally, in order to describe socio-contextual factors on motivation, the basic physiological needs sub-theory is used. This sub-theory includes competence, autonomy, and relatedness (Deci & Ryan, 2008; Ryan & Deci, 2000a; Ryan & Deci, 2000b). Competence refers to the perception of success and being effective from the challenges faced in one's environment. Autonomy is the feelings of personal choice or control. Relatedness is the social connection to others reflected by feelings of acceptance and belonging. The fulfillment of these three basic physiological needs are met by socio-contextual factors, then more self-determined types of motivational constructs are likely to emerge (Ryan & Deci, 2000a; Ryan & Deci, 2000b). For high levels of self-determined motivation to occur, the satisfaction of these three needs must be met.

Self-determination theory has been studied in various domains including but not limited to general behavior, education, recess, sport, physical education, and physical activity (Pannekoek et al., 2013). While much of the research has been conducted in adults, some studies have researched this theory in children but most of the target populations have been focused on adolescents (Pannekoek et al., 2013). This may be due to the hypothesis that younger children would not be sufficiently cognitively developed to understand internalized forms of extrinsic motivation (Nicholls, 1978; Vallerand, 1997). However, more recently, studies have shown that children as young as eight may be able to identify with more internalized forms of extrinsic

motivation (Bong, 2009; Dweck, 2002; Fry & Duda, 1997) and may differ between domains (Dweck, 2002; Fry & Duda, 1997). Furthermore, these differences may be due to levels of experience within the specific situation or domain (Butler & Elliot, 2005). In the physical activity domain, the cognitive ability of when children begin to identify with internalized forms of motivation for extrinsic physical activity is unknown. The studies outlined will highlight the research on children and adolescents using self-determination theory in various domains.

General Behavior

Early studies involving children and using Self-Determination Theory focused on general behaviors. Much of the early literature involved qualitative data, such as interviews. For example, one study by Chandler and Connell (1987) used one on one interviews to find out what behaviors children (aged 5-13 years) liked or disliked (Chandler & Connell, 1987). The researchers found that the liked behaviors were linked type of motivation. For disliked behaviors, extrinsic motivation was more prevalent in the younger ages (5-7 years old) while higher frequencies of internalized motivation were present in the older ages (8-13 years old). This was the first study to reveal that motivation types are conceptually and developmentally distinct and should be examined separately based on age of the subjects (Chandler & Connell, 1987). Similarly, another study examined the comparison of rewards (external regulation) and autonomy-support (promotes more self-determined regulations) during 'uninteresting' tasks (Joussemet, Koestner, Lekes, & Houlfort, 2004). They found that the autonomy-supportive environments were associated with higher forms of self-regulation towards the free-play session, indicating they were participating in the uninteresting task on their own. This study showed that

autonomy-supportive environment without rewards, even for an uninteresting task, may enable a high level of motivation.

Pertaining to general behaviors, assessments of sedentary habits, life satisfaction, and leisure time activities took place in youth. Much of the literature has shown the influence of parenting style on how their children's spare time is spent (Leversen, Danielsen, Birkeland, & Samdal, 2012; Lubans et al., 2013). One study conducted by Lubans and colleagues (2013), found that a controlling parenting style was associated with more sedentary time of youth. The researchers also found that amotivation was positively associated with higher levels of self-reported screen-time (Lubans et al., 2013). Additionally, how youth spend their spare time is connected with the satisfaction of their basic psychological needs, their leisure activity participation, and their overall life satisfaction (Leversen et al., 2012). The higher the level of fostering of the psychological needs is associated with higher levels of motivation for more active forms of activities.

Early research using Self-Determination Theory started with general behaviors and have developed into more specific domains. Main findings from these early studies reported that children and adolescents will have higher intrinsic motivation for behaviors they like, creating an autonomy supportive environment will prompt higher motivation for uninteresting tasks, and satisfaction of the three basic psychological needs was associated with higher life satisfaction and motivation for leisure time physical activities.

Education

Self-Determination theory has been studied in youth extensively in the education domain. Motivation for school has been found to be a vital component for academic success including

grade point averages, standardized testing, and learning comprehension (Fortier, Vallerand, & Guay, 1995; Grolnick, Ryan, & Deci, 1991; Guay & Vallerand, 1996; Pintrich, 2003; Ratelle, Guay, Vallerand, Larose, & Senécal, 2007; Reeve, 2002). Motivation, in the education domain, has been associated with greater cognitive outcomes (retention and processing) (Grolnick & Ryan, 1987; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). Higher motivation towards a class lesson was correlated with learning the lesson quicker and retaining more information (Grolnick & Ryan, 1987; Vansteenkiste et al., 2004). Furthermore, the motivation towards a particular subject has been shown to be different across age groups. Younger children seem to show high motivation towards all subject while older children showed high motivation for certain subjects they enjoyed (Guay et al., 2010). Older children begin to focus their attention and motivation on school subjects they like and less motivation for those subjects they dislike.

Many studies in the education domain have focused on children's and adolescents' motivation towards school and how teaching style or classroom environment relates to academic success (Baeten, Dochy, & Struyven, 2013; Fortier et al., 1995; Grolnick et al., 1991; Guay et al., 2010; Guay, Ratelle, & Chanal, 2008; Guay & Vallerand, 1996; Pannekoek et al., 2013; Ratelle et al., 2007). The research has shown that teacher support is related to the fostering of students' basic psychological needs, which is a determining factor in motivation (Reeve, 2002, 2006; Ryan & Grolnick, 1986). One example from Guay and Vallerand (1996) examined students' motivation towards school and its relation to academic achievement (Guay & Vallerand, 1996). The main finding from this study was that parental and teacher autonomy support predicted more autonomous motivation towards school, which predicted better academic achievement over the 1-year period. This is an important finding because it shows that parents'

and teachers' influences on children's motivation to learn, which affects academic performance. A similar study found that if teachers elicit an autonomy supportive teaching style, children were more likely to have higher motivation towards educational activities resulting in better understanding of the material and better grades. These findings have been replicated in a number of studies examining teaching style (Reeve, 2002, 2006) and parenting style (Grolnick et al., 1991).

Examining children's and adolescents' educational outcomes using Self-Determination Theory yielded a number of outcomes. First, higher levels of motivation lead to greater learning and retention. Second, an age dependent form of motivation towards school subjects was found. Finally, teacher style has a major influence on motivation towards school, which influences academic achievement. Furthermore, academic achievement has been found to be related to physical activity. Higher levels of physical activity are related to greater academic achievement (Coe, Peterson, Blair, Schutten, & Peddie, 2013).

Sport

Participation in sport has been considered to be an inherently rewarding activity that brings positive health and well-being (Ryan & Frederick, 1997). However, many different factors contribute to the motivation to participate in sport. Much of the Self-Determination Theory sport motivation research examined perception of coach support and how that perception influences a youth athlete's basic psychological needs and motivation (Balaguer et al., 2012; Coatsworth & Conroy, 2009; Moreno-Murcia & Hernandez, 2013; Mouratidis, Vansteenkiste, Lens, & Sideridis, 2008). The main findings in the literature indicate that how youth perceive their coach's support and/or style has an impact on the fostering or thwarting of their basic

psychological needs (Balaguer et al., 2012; Coatsworth & Conroy, 2009). More coach support has been shown to elicit fostering of the three basic psychological needs (Balaguer et al., 2012; Coatsworth & Conroy, 2009). For example, one study examined youth soccer players and their perceptions of the structure instilled by the coach and how that affected their perceived need satisfaction and motivation (Curran, Hill, & Niemiec, 2013). They found that the satisfaction of the three psychological needs mediated a positive association between coaching structure and behavioral engagement or motivation for soccer. This suggests that the structure instilled by a coach is vital to need satisfaction and motivation in sport. Other research has focused on the perceptions of coach support, needs thwarting, and burnout. Similar results across multiple studies found that the climate a coach creates directly impacts the fostering or thwarting of the three basic psychological needs, which directly influences burnout and motivation in sport (Balaguer et al., 2012; Gonzalez, Tomas, Castillo, Duda, & Balaguer, 2017).

Furthermore, additional youth investigations in the sport domain were conducted with slight alterations or additions. A study conducted by Coatsworth and colleagues (2009) examined youth swimmers and their perception of their coaches' support, need satisfaction, and self-perceptions (including perceived competency) (Coatsworth & Conroy, 2009). They found that the higher quality perception of coach support was associated with satisfaction of the three basic psychological needs which was associated with higher perceived competency (Coatsworth & Conroy, 2009). Additionally, the perceived competency was associated with higher motivation (Coatsworth & Conroy, 2009). Interestingly, other researchers have found similar results with the same variables but with self-esteem (Gagne, 2003). The results from Coatsworth (2009) and Gagne (2003) may suggest that self-esteem and perceived competency relate to motivation. One

other similar study examined the same variable but with the addition of moderate to vigorous physical activity by accelerometry outside of youth soccer (Fenton, Duda, & Barrett, 2016). The authors found that perceptions coaches predicted motivation towards soccer and motivation predicted percent of time in moderate to vigorous physical activity. The findings may suggest that coach perception in a sport setting influence not only the motivation towards that sport but levels of physical activity outside of sport. Finally, the length of time youth has been engaged in a particular sport has been shown to influence motivation (Hendry, Crocker, & Hodges, 2014). One study found that youth who participated in their sport the longest scored significantly lower on motivation scales (Hendry et al., 2014). Furthermore, these results may provide evidence that the longer and at a higher level an individual participates in a sport may prompt lower forms of motivation, which may be why sport participation declines during the adolescent years (Olds et al., 2012; Sallis et al., 2000; Troiano et al., 2008).

Self-Determination Theory in the sports domain is one of the most studied and has established many conclusions. Perceptions of the coaching climate created has an impact on the satisfaction or thwarting of the three basic psychological needs. Furthermore, the longer an athlete has participated in a sport, the motivation towards that sport will be. Additionally, the satisfaction of the needs influence motivation towards sport, sport burnout, and physical activity outside of sport.

Physical Education

The study of children's motivation to engage in physical education is important because it may have an influence on cognitive, affective, and behavioral outcomes including the adoption of a physically active lifestyle outside of physical education that may track into adulthood

(Biddle, 2001). Similar to the sport domain, much research is focused on the perception of support from the physical education teacher and that influence on fostering of the three basic psychological needs (Standage, Duda, & Ntoumanis, 2006; Zhang, 2009). One example from Standage and colleagues (2012), found that support from physical education teachers predicted the satisfaction of needs, which predicted motivation in class. Additionally, motivation towards the class predicted physical activity levels (i.e. step counts/day) (Standage, Gillison, Ntoumanis, & Treasure, 2012). This suggests that physical education teachers have an impact on the physical activity levels not only during class, but also outside of physical education.

Other research on Self-Determination Theory in the physical education domain focused on motivation and physical activity levels during physical education classes. One example from Aelterman and colleagues (2012) showed that physical education motivation influenced the levels of moderate to vigorous physical activity. Higher motivation was associated with higher levels of moderate to vigorous physical activity (Aelterman et al., 2012). Similarly, another study showed that steps during physical education were higher in those that elicited higher motivation for that class (Lonsdale, Sabiston, Raedeke, Ha, & Sum, 2009).

Furthermore, not only does the research point to higher levels of physical activity during physical education class, but also outside the class. One study by Zhang (2009) examined the predicted strength of motivation towards physical activity behavior during and outside of physical education class, perceived enjoyment, and effort during physical education class (Zhang, 2009). They found that higher motivation for physical education class was positively associated with enjoyment, effort, and physical activity outside of class (Zhang, 2009). Similarly, another study found that those students who identified with higher motivation were associated

with higher levels of moderate-to-vigorous physical activity during the physical education lesson and leisure-time (or outside of class) (Owen, Astell-Burt, & Lonsdale, 2013).

In conclusion, physical education research using Self-Determination Theory showed a few major contributions to were similar and different to other domains. The physical education teaching style and climate teachers create during classes (similar to coaching and teaching domains), had a direct association to need satisfaction, which influence motivation towards physical education class, which impacts physical activity outside of physical education class. Additionally, enjoyment during physical education class was directed related to physical activity levels outside of class.

Recess Physical Activity

Self-determination theory has been used to examine physical activity motivation and physical activity levels during recess. Children can accumulate up to 40% of their total daily physical activity during recess (Beighle, 2012); therefore, it is important to increase physical activity and motivation for activity during recess. One study examined the relationship between fifth grade students' basic psychological need satisfaction during recess, level of recess physical activity motivation, and physical activity level during recess (Stellino & Sinclair, 2013). It was found that recess physical activity motivation was predicted by all three psychological needs for boys, but it was predicted by only competence for girls. Additionally, recess physical activity was predicted by recess physical activity motivation and autonomy for all normal weight children, and only competence for overweight children. These findings suggest that recess physical activity behavior is based on gender and weight status in children. This may imply that satisfaction of specific needs should be targeted based on physiological factors.

Physical Activity

One recent review study evaluated physical activity using Self-Determination Theory in children and adolescents and concluded that very little research has been examined in children in this domain (Owen, Smith, Lubans, Ng, & Lonsdale, 2014). This review included 46 studies of children and adolescents with the lowest mean age of any single study in the review being only 10 years (Owen et al., 2014; Sebire et al., 2013). This review indicates there is a lack of Self-Determination Theory research in children less than 10 years old. Additionally, every study included in this review used quantitative methods to assess motivation (Owen et al., 2014). Therefore, alternate methods need to be explored to fully understand this age group. The review concluded that there was weak to moderate correlations between motivation and physical activity levels in children (Owen et al., 2014). The authors also noted the substantial heterogeneity in the associations found between the studies. Thus, more research is needed in needed in this age group.

Much of the literature pertaining to Self-Determination Theory, physical activity, and youth have shown similarities to other domains such as sport and physical education (Pannekoek et al., 2013). However, one study by Gerber and colleagues (2011), concluded that organized sport and non-organized sport should be viewed separately. The authors discussed how non-organized sport participation depends on more volitional processes (Gerber, Mallett, & Pühse, 2011). This finding provides evidence that motivation for participation in non- organized sport may be different that organized sport physical activity. Examining the motivational physical activity domain, one commonality in results include satisfaction of the three basic psychological needs in associated or predicts higher levels of physical activity motivation, which is associated

with higher physical activity levels (Brunet, Gunnell, Teixeira, Sabiston, & Belanger, 2016; Sebire et al., 2013; Verloigne et al., 2011). One such study examined 7-11-year-old children and found that physical activity, measured by accelerometry, was influenced by motivation for physical activity (Sebire et al., 2013). Additionally, that motivation was predicted by the three basic psychological needs (Sebire et al., 2013). These results suggest that motivation for physical activity is based on enjoyment and satisfaction of the three basic psychological needs, which is similar to that of adults (Sebire et al., 2013). Similarly, the three basic psychological needs, motivation, physical activity relationship has been replicated in healthy youth and obese youth, showing similar results, which suggests the relationship is not dependent on weight status (Brunet et al., 2016). Furthermore, just as other domains, perceived competence has been shown to have an influence on motivation for physical activity (Bagøien & Halvari, 2005). This suggests similarities across domains and that perceived competence may play a role in children's physical activity motivation.

Literature in this domain has also shown the perception of parent support and its influence on need satisfaction, motivation, and physical activity levels (Pannekoek et al., 2013). McDavid and colleagues (2012) determined that youth's perception of parent support has similar influence as their physical education teacher in terms of motivation for physical activity and physical activity levels (McDavid, Cox, & Amorose, 2012). A better perception of support from their parents showed grater motivation and physical activity. Similarly, another study showed similar results (Vierling, Standage, & Treasure, 2007). However, to our knowledge, only one study using the Self-Determination Theory specifically examined noncompetitive physical activity as the other studies did not address this issue (Christiana, Davis, Wilson, McCarty, &

Green, 2014). The purpose of the study was to examine youth motivation to engage in noncompetitive outdoor physical activity. As expected, support from parents resulted in higher motivation towards physical activity. Additionally, motivation was associated with higher levels of noncompetitive outdoor physical activity. These results are similar to what was found in the sport and physical education settings (Aelterman et al., 2012; Balaguer et al., 2012; Coatsworth & Conroy, 2009; Fenton et al., 2016; Hendry et al., 2014; Lonsdale et al., 2009; Owen et al., 2013; Standage et al., 2003; Zhang, 2009). Even though these studies yielded similar results in other domains, studies are limited in younger populations (aged 5-8) in all domains, but more so in the noncompetitive physical activity domain.

The main conclusions in the physical activity domain show some similar results to other domains. The satisfaction of the three psychological needs have a direct association to increasing physical activity levels. Additionally, the three basic psychological needs have an impact on motivation towards physical activity. Also, parent support, has an influence on the three basic psychological needs, which influence motivation and physical activity. However, research is limited in children less than 10 years old. Additionally, alternate methodology (i.e. other than quantitative), is necessary to gather more information on younger children.

Summary

Self-Determination Theory has been used with youth in a number of domains including general behavior, education, sports, physical education, recess, and physical activity. However, the research is limited to adolescent or high school aged youth and do not include younger children. Additionally, much of the physical activity domain included sport or physical education

and did not examine just habitual physical activity. The incorporation of alternate methods and younger age groups may fully capture why physical activity levels decline in this age group.

Achievement Goal Theory

Achievement Goal Theory focuses on the individual's reason(s) why they engage in a behavior that is relevant to competence-related beliefs (Nicholls, 1989). This theory outlines individual goals in achievement situations which are underlined by successes or failures and how they are interpreted. How these successes or failures are interpreted creates and individual's perception of their ability. This theory consists of mastery and performance goal orientations. *Mastery goal* orientated individuals focus on the learning, improvement, and task understanding aspects and competence is evaluated on self-referenced standards. *Performance goal*-oriented individuals focus is to demonstrate competence and outperforming others and competence is based on the comparison to others. These goals can further be broken down to whether competence is valanced as positive or negative through approach (success) or avoidance (failure) dimensions. This results in a 2x2 framework consisting of four different types of goals with each providing different sets of antecedents, processes, psychosocial, motivational, and behavioral outcomes (Elliot & McGregor, 2001; Elliot & Murayama, 2008; Nien & Duda, 2008). This 2x2 framework produces four possible types of orientation goals: *mastery approach, performance approach, mastery avoidance, and performance avoidance*. *Mastery approach* goals are expected to produce the most adaptive outcomes as both the mastery orientation and approach goal are focused on learning and improvement (Elliot & McGregor, 2001). *Performance approach* goals are characterized as 'valuable, yet vulnerable' because even though the goal is centered around learning and improvement, the individual orientation is focused on the need for

achievement and comparison to others performances, which produces negative motivational constructs such as fear, need for self-validation, and self-protection concerns that disrupt learning and improvement (Elliot & McGregor, 2001). *Mastery avoidance* goals while the orientation is focused on learning, the goals are focused on avoidance of misunderstanding or failing to learn or master a task. This type of construct can produce an individual to avoid activities that are unfamiliar or new. Finally, *performance avoidance* goals are centered around the performance of others and avoidance of the appearance of failure in an activity. This type of construct is detrimental to motivation as individuals tend to choose to only participate in activities in where they succeed and avoid those they will not.

Achievement Goal Theory Research

Achievement motivational theories have been developed and studied as early as the 1970's. Achievement theories were originally developed in educational domains, examining orientation attributes as to why certain people succeed or fail (Nicholls, 1978, 1989). The basis of achievement behavior is mediated by causal attributions for success or failure (Nicholls, 1978). Effort and ability are the main factors that are determined by developmental factors that can led to these successes for failures. Nicholls was one of the first to explore how these influences change as children age and become more developed in educational settings (Nicholls, 1978). Additionally, achievement behavior was studied extensively in the sport domain. From this early work, the 2x2 achievement goal theory framework was established by Elliot and McGregor (Elliot & McGregor, 2001). The 2x2 framework has been applied successfully to the education and sport domains in youth and adults and the work/professional domain in adults. However, limited research has been examined in the exercise and physical activity domains, but

some research has been focused on the physical education domain. It is important to review the education domain to understand how the Achievement Goal Theory developed and how findings are similar or different across domains and where the research is lacking in children less than 10 years old. The present literature review will outline Achievement Goal Theory studies in different domains in youth.

An early study conducted by Nicholls (1978) examined only eight children (one child in each age from 5-13 years old) (Nicholls, 1978). Nicholls hypothesized that there are selected cognitive developments that mediate the development of achievement motivation that can be observed through four levels of reasoning between effort and ability. The participants watched films of other children working on tasks that was graded out of 10 points. The participants were asked to rate their level of effort and ability on each of the four films (1. high effort-high ability 2. high effort-low ability 3. low effort-high ability 4. low effort-low ability). Additionally, the teachers of the participants rated their achievement level during class time. Nicholls found that children at the youngest ages (5-7 years) were unable to distinguish between effort and ability and the oldest children (12-13 years) were able to. Furthermore, the achievement behaviors, as rated by the teachers, occurred at about the same time as the development of distinguishing between effort and ability. This suggests that children develop achievement behaviors (either positive or negative) when they begin to differentiate between effort and ability. This is the first study to show these findings and reveal no gender difference. Another study that used similar methods examined the same age children (5-13 years) in the academic domains and found similar results in both older and younger children (Fry & Duda, 1997).

From these early studies, achievement goals have been further confirmed to further expand past theories to propose Nicholls' achievement orientation theory (Nicholls, 1984; Nicholls, 1989). Additional research pertaining to the task and ego goals and orientations was conducted (now known as the mastery and performance orientations). The earliest research done on task and ego orientations was conducted in 1946 and examined learning and retention in college students (Alper, 1946). However, it was not until research from Nicholls (Nicholls, 1984) and Dweck (Dweck & Elliott, 1983) that sparked an abundance of further research on task and ego orientations in the education and sport domains.

During the late 1980's and early 1990's, a number of studies examined students' goal orientations in school and whether they were associated with their beliefs about how success was achieved (Nicholls, Cheung, Lauer, & Patashnick, 1989; Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990; Nicholls, Cobb, Yackel, Wood, & Wheatley, 1990). One such study conducted by Nicholls (1989) examined individual differences of the dimensions of task and ego orientations and student's belief on attainment of academic success (Nicholls et al., 1989). They found that task orientated students believed that hard work, understanding the material, and collaboration with peers was needed for academic success. Additionally, ego-oriented students believed that success in school came from attempts from outperforming others and having superior knowledge. These results are similar to another study conducted specifically in mathematics and students' theories of success in the classroom (Nicholls, Cobb, Yackel, et al., 1990).

Duda (1989) was the first to examine goal orientation and perceived purpose in high school athletes (Duda, 1989). The study included 321 mixed sex, varsity high school athletes in a

variety of sports. The results showed that males had significantly higher ego orientations than females, while females had significantly higher task orientations. Furthermore, athletes who identified with a high task orientation tended to express that sport should teach values of effort, cooperation, sportsmanship, enhancement of self-esteem, and honesty. Additionally, high task orientation was shown to have a negative correlation with improvement of social status. On the other hand, athletes with high ego orientations had positive correlations with beliefs about sport reflecting the extrinsic benefits and personal gains of sport participation. Ego orientation was a positive predictor of the view that sport should help a person attend college, move a person up the career ladder, and earn more money. These results suggest that coaches, physical educators, and parents should try and inspire young athletes to try their best, cooperate, and obey the rules to try and convey task orientations.

It is not clear from Duda's work whether goal orientations in the sport domain are related with beliefs about the causes of success like the education studies. Another study conducted by Duda and Nicholls (1992) examined the task/ego dimensions of achievement motivation and how that influenced student's beliefs of success in both the sport and academic domains (Duda & Nicholls, 1992). The study included 207 high school students that were asked to complete several questionnaires to assess goal orientations, beliefs about the cases of success, level of satisfaction and interest, and perceived ability in sport and the classroom. They found that success in both the classroom and in sport, ego-oriented goals were associated with beliefs that success demands high ability, where task-oriented goals were associated with beliefs that success demands effort, collaboration, and interest. Additionally, no association was found with perceptions of ability and intrinsic satisfaction in the academic domain but there was an

association in the sport domain. These results further suggest that goal orientation is important in the academic and sport settings and beliefs of success. The research thus far points to the importance of promoting task-oriented goals, especially for sport to foster intrinsic satisfaction, which is directly linked to intrinsic motivation (Duda & Nicholls, 1992).

Similar to the education domain, White and Duda (1994) used the task and ego sport orientations to explore if gender differences existed in levels of sport involvement and motivation in youth (White & Duda, 1994) They discovered that the highest competitive level (i.e. club) showed to have the most ego-oriented individuals. Additionally, males showed higher ego orientations than females. This study was one of the first to show a gender difference in ego and task orientations in relation to sport in high school students. However, these results needed to be tested in younger youth. Further sport domains studies were conducted in adolescents by adapting questionnaires. Fox and colleagues (1994) examined specifically the task and ego orientations on its influence on motivation in adolescents (Fox, Goudas, Biddle, Duda, & Armstrong, 1994). They found that the low task/low ego group consisted of mainly females and had the lowest participation and motivation for sport. The high task group had the greatest motivation for sport and most sport participation compared to the high ego group. These results lead to the conclusion that task-orientation for adolescents revealed to be the determining factor for motivation in sport.

Despite the evidence in the two dimensions of goal-orientations in the sport and education domains, some researchers found there were missing pieces in the theories (Elliot, 1999; Pintrich, 2003). It has been argued that individuals' reasoning for engagement in certain behaviors can be better understood by considering the purpose of engagement and the criteria

they use to judge their performance. Extending where Fox (1994) began, the 2x2 achievement goal framework was developed. Elliot and McGregor (2001) were the first to show evidence of four independent achievement goal profiles using this framework in the education domain (Elliot & McGregor, 2001). They found that the four distinct achievement goals showed different patterns of associations. Approach and mastery were individually associated with greater achievement on the SAT compared to avoidance and performance. Additionally, SAT scores negatively predicted performance-avoidance goals and class-room engagement predicted mastery-avoidance goals. Further studies partially replicated this study in the same domain (education) and found similar results (Finney, Pieper, & Barron, 2004; Jowkar, Kojuri, Kohoulat, & Hayat, 2014). The findings suggest that teachers have a major influence on dictating mastery and approach orientations through the classroom environment they create. Furthermore, Bong (2009) examined if the 2x2 framework had differences in age and education performance (Bong, 2009). Participants included 1,196 children from 1st through 9th grade. The younger children (grades 1-4) endorsed more mastery-approach goals while the older children (grades 5-9) endorsed more performance-approach goals. These findings are important as they show a distinct tendency of goal orientation across age groups and revealed that young children endorsed all four types of goals. Young children were not thought to be able to cognitively able to endorse all types. This is one of the few studies that examined children this young in any domain.

Examining the sport domain, the development and validation of the achievement goal scale for youth sports was not until 2008 by Cumming and colleagues (Cumming et al., 2008). There was a significant amount of research using achievement goal theory in the sport domain but no validated measurement (Sarrazin, Roberts, Cury, Biddle, & Famose, 2002). However,

despite Cumming validating the scale in 9-14-year-old children, there was a failure to reveal a difference in comprehension between mastery-avoidance and performance-avoidance orientations in the youngest children (9-10 years). This suggests that children 10 and under may not have the cognitive capabilities to distinguish between avoidance orientations. This is inconsistent with previous findings from Bong (2009) in the academic domain, where children as young as 6 years old endorsed both approach and avoidance goals (Bong, 2009). Further studies in the sport domain were conducted and all found similar results. The orientation of youth endorses towards an activity will determine the amount of motivation towards that activity (Li et al., 2011; Sarrazin et al., 2002). This suggests that athletes who focus on task mastery and skill improvement will have higher motivation and will lead to better performance. Therefore, coaches and parents should try and set mastery goals for children to elicit the most effort.

While achievement goal theory is well studied in academics and sport, there is almost no research conducted the habitual physical activity domain with younger children (less than 10 years old). This gap can be addressed by more research done with habitual physical activity in preadolescent children.

Integrating Theories and Mixed Methods Approach

The integration of Self-Determination Theory and Achievement Goal Theory has been investigated in the youth sport and physical education domains but not in the youth physical activity domain. These two theories together, can provide complimentary explanations to better understand the complexity of motivated and unmotivated behavior (Pannekoek et al., 2013). Children's goal orientation is likely to impact the three psychological needs, which will determine the regulation of motivational constructs from Self-Determination Theory, resulting in

physical activity behavioral outcomes (Cerasoli & Ford, 2014; Moreno, González-Cutre, Sicilia, & Spray, 2010; Ntoumanis, 2001; Pannekoek et al., 2013; Wang, Chatzisarantis, Spray, & Biddle, 2002). Mastery orientations seem to facilitate the fostering of need satisfaction compared to performance orientations (Pannekoek et al., 2013). With mastery orientations, the focus is on improvement and learning, which brings competence in an activity, autonomy as the individual is volitionally focused on the activity, and relatedness as there is more a focus on teamwork (Cerasoli & Ford, 2014; Moreno et al., 2010; Ntoumanis, 2001; Wang et al., 2002). Performance orientations focus on outperforming others and the outcome of an activity, which decreases competence as the sole attention is not on the skill acquisition, produces less autonomy as the individual is focused on the performance of others, and less relatedness since a feeling of rivalry may arise from the comparison to other performances (Cerasoli & Ford, 2014; Moreno et al., 2010; Ntoumanis, 2001; Wang et al., 2002). Furthermore, the integration of these two theories should be applied to identify at what age youth differentiate types of physical activity motivational orientations and goals to determine their fostering of psychological needs. Additionally, these orientations and need satisfaction will play a role in their regulation of physical activity motivation on the self-determination continuum.

Furthermore, much of the data on youth motivation for physical available is of either quantitative or qualitative methods (Pannekoek et al., 2013). A mixed methods approach would combine the strengths of qualitative and quantitative methodology to build more insights in motivations for physical activity in children eight years or less (Creswell & Clark, 2017; Schoonenboom & Johnson, 2017; Venkatesh et al., 2016). As such, this combined approach can provide an understanding of potentially valuable information that may be missed using a single

method (Johnson & Onwuegbuzie, 2004). Mixed methods can strengthen evidence through confirmation and substantiation of findings while the different data collection methods can neutralize each method's biases or weaknesses (Creswell & Clark, 2017).

Integrated Self-Determination Theory and Achievement Goal Theory Research

The relationship between the Self-Determination Theory and Achievement Goal Theory has been examined in the physical education and sport domains but not the habitual physical activity domain (Pannekoek et al., 2013). Additionally, these theories have only been investigated in late childhood to adolescent-aged youth and not younger children.

In the sport setting, one study found a positive relationship between mastery goals and more autonomous motivation, and a negative relationship between mastery goals and more controlling types of motivation in children as young as 9 years old (Cumming et al., 2008). However, there was no relationship found between performance goals and controlling types of motivation in the youngest age group (9-10-year old). From this study, a hypothesis was established that consistent relationships between achievement goals and level of self-determined motivation emerges in late-childhood and adolescence; however, only one study has been conducted to focus on these relationships in younger children (Conroy, Kaye, & Coatsworth, 2006). This study examined 7-18-year-old swimmers and the effect of achievement goals on different levels of motivation from the self-determination motivation continuum. This is the first and only study to examine the achievement goal 2x2 framework and its relationship to self-determined motivation types in children. They found that mastery-approach goals were positively correlated to higher levels of self-determined motivation types and intrinsic motivation and negatively correlated to externally regulated motivation types. The opposite relationships

were found for both mastery-avoidance and performance-avoidance goals. Finally, interestingly, performance-approach goals not associated with intrinsic motivation and only related to external motivation types. The results of this study were consistent with previous findings in adults and older samples of youth, but these results should be taken with caution as the age of participants was not taken into account as the results were found in the entire sample, which was a very broad range. Additionally, the study used questionnaires that were only validated for older youth. Since age was not considered in this study, it remains unclear if the relationships found in older samples of youth are consistent in across all ages in the sports domain (Conroy et al., 2006).

Similar to the sport domain, the physical education domain has not been examined in younger children. Also, research in this realm has been extended to associations and predictions between achievement goal orientations, motivation in physical education class and physical activity in physical education and physical activity outside of class. One study investigated elementary and middle school students and associations between achievement goals and motivation in physical education classes (Mouratidis, Lens, & Sideridis, 2010). They found that students with higher forms of self-determined motivation in physical education classes also endorsed mastery-approach goals and were less likely to endorse outcomes goals. Furthermore, it was just the opposite for students with more controlled (less self-determined) motivation in physical education classes such that they endorsed more performance and avoidance goals, independently. A different study conducted by Standage and colleagues (2003) examined achievement goal orientations, perception of psychological needs, level of motivation, and intention of physical activity outside of physical education class (Standage et al., 2003). They found in middle school physical education students (n=328), that a mastery goal orientation had

a positive association with the satisfaction of the three needs, which positively predicted self-determined motivation towards intention of physical activity outside of class. As previously mentioned, these findings have implications on physical education classes to potentially to promote physical activity motivation to many children. However, these results cannot be generalized to younger children.

There is a lack of research conducted on children using self-determination theory and achievement goal theory. In the sport domain, mastery goal orientations were associated with higher autonomous motivation and intrinsic motivation towards sport. In physical education, researchers concluded that higher forms of self-determined motivation were more likely to endorse mastery-approach orientations. Mastery-approach orientations predicted satisfaction of the three psychological needs and predicted higher physical activity levels outside of physical education class.

Motivation Research with a Mixed Methods Approach

Much of the mixed method youth motivational research includes an intervention with quantitative measures (i.e. questionnaires, surveys, accelerometry, etc.) and combining a qualitative piece (i.e. interviews, focus groups, etc.) post-intervention (Munroe-Chandler, 2005). The qualitative piece usually determines the effectiveness of the intervention and identifies areas where future studies can improve. An example is from a study by Super and colleagues (2014), that aimed to improve sport participation in socially vulnerable youth (Super, Hermens, Verkooijen, & Koelen, 2014). The study included sport participation questionnaires during organized sporting programs throughout 18 months followed by interviews. The combined methods led the researchers to conclude that youth participation in sport improves their lives.

This suggests that motivating youth for participation in sport will improve their social aspects contributing to overall life satisfaction. Additionally, another study using a mixed methods approach found that youth tend to attend programs based on the staff and peers involved (Akiva & Horner, 2016). Therefore, these studies provide evidence that social aspects obtained from activities may play a large role in the motivation for engagement in the programs. However, there is a lack of youth motivation research incorporating a mixed methods approach. One reason may be that some researchers view that the combination of qualitative and quantitative methods have combating research paradigms (Andersen, Aldridge, Williams, & Taylor, 1997). Nonetheless, together the multiple methods can complement and explain each other (Denzin, 1994). Denzin (1994) state, "the use of multiple methods reflects an attempt to secure in-depth understanding of the phenomenon in question" (p. 4). Therefore, the incorporation of a mixed methods approach in youth physical activity motivation research could bring new insight to this complex issue.

Conclusions

In Self-Determination Theory research, across all domains, the main conclusions indicate that the satisfaction of the three psychological needs predict higher forms of self-determined motivation. Additionally, the climate created from parents, teacher, and coaches influences the satisfaction of those needs. Additionally, perceived competence plays a role in motivation. In the Achievement Goal Theory research, mastery goal and approach orientations predict motivation, academic performance, and sports performance. Research integrating these two theories suggests that goal orientation impacts the three basic psychological needs, which has a direct effect on

self-determined forms of motivation. Higher forms of self-determined motivation positively predict physical activity levels.

A multi-theoretical approach will provide a better picture of how and why children are motivated to be physically active in order to gain a better understanding of why there is a decline in physical activity as children get older. Based on the previous studies, the habitual physical activity domain in younger children is lacking in terms of research. There are many different factors that may influence motivation for physical activity in children.

The goal of this dissertation will be to explore what motivates children to be active, through asking what children enjoy about physical activity. Focus groups will be used to concentrate on the 'why' children enjoy or do not enjoy physical activities to explore their motivations for engagement. Additionally, physical activity levels and perceived motor competence will be measured to integrate with the focus group data in the discussion section. As such, this combined approach (mixed methods) can provide an understanding that might be missed using a single method (Johnson & Onwuegbuzie, 2004). The combination of multiple methods will add rigor, breadth, and depth to this investigation (Flick, 1992).

CHAPTER THREE
MATERIALS, METHODOLOGY, AND METHODS

Study Design

A convergent parallel mixed methods study design provided the opportunity to measure levels of physical activity and perceived motor competency and compare them with findings regarding children's physical activity experiences and preferences. The study took place during the YMCA afterschool programs at two participating Knox County elementary schools. The study involved the collection of basic demographic data (age, sex, etc.), anthropometric variables (height, weight), physical activity levels, perceived motor competence, and physical activity experiences. Physical activity experiences were collected in small (3-5 children) focus groups. Approval for this study was granted by the university's institutional review board and the elementary school institutional review board. Additional approval was granted by each participating elementary school principal and the YMCA afterschool program director.

Rationale for Mixed Methods

In order to explore children's motivation for physical activity, a qualitative methodology is the most appropriate approach. However, it is suggested that to develop more complete understanding of the current research problem is to obtain different but complementary data (Creswell & Clark, 2017). Therefore, collecting complimentary quantitative data through physical activity levels and perceived motor competency provided a better understanding and interpretation of the results. The convergent parallel mixed method approach included the collection of both types of data (qualitative and quantitative) and analyzation of the data

separately. Additionally, with this approach, the results were separate, and the interpretation was merged (Creswell & Clark, 2017).

Focus Group Methodology

This dissertation is underpinned by ontological relativism and epistemological constructivism. This paradigm assumes that reality is fluid, multiple, and dependent on the meanings given to objects, events, and practices through an individuals' past experiences (Smith & McGannon, 2018). Through the ontology and epistemology, it guided what the researcher could infer from the focus group data and how to theorize meaning. Using this research paradigm, theorization of motivations and experience were made in a unidirectional relationship between meaning and experience (Braun & Clarke, 2006; Braun, Clarke, & Weate, 2016; Potter & Wetherell, 1987; Riessman, 1993; Widdicombe & Wooffitt, 1995; Willig, 1999). As such, this dissertation seeks to understand our participants' experiences with physical activity as related to their participation through actions and self-awareness (Smith & McGannon, 2018).

Rationale for Focus Group

The use of qualitative methods, specifically focus groups, was chosen for a number of reasons. From a public health perspective, this age group (6-9 years old) is crucial for the development of regular physical activity habits as these habits have been shown to track into adulthood (Craigie et al., 2011; Gordon-Larsen et al., 2004; Singh, Mulder, Twisk, van Mechelen, & Chinapaw, 2008; Telama et al., 2014). Physical inactivity during childhood has been associated with many health concerns that are pertinent later in life including, but not limited to, cardiovascular disease, obesity, and type 2 diabetes (Erikssen, 2001; Mavrovouniotis,

2012; Shrestha & Copenhaver, 2015; Sinha et al., 2002). Another reason is the lack of physical activity motivation research within the target age range (6-8 years) (Pannekoek et al., 2013). Therefore, there are no self-report questionnaires, pertaining to physical activity motivation, that have been created and validated in this age group and parent report on their children has been shown to be inaccurate (Pannekoek et al., 2013). Consequently, focus groups should be used in an area where the research is sparse (Green & Thorogood, 2018). Additionally, previous qualitative experts have argued that it is most appropriate to use qualitative methods when researchers are attempting to relate understanding to some aspect of social life (Green & Thorogood, 2018; Neuman, 2013). Qualitative research aims to answer questions of the 'how' or 'why' and address experiences or perspectives (Green & Thorogood, 2018; Neuman, 2013). Understanding the motivation for engagement in physical activities can provide essential information on development of intervention strategies for children to enjoy physical activity to potentially develop life-long physical habits (Craigie et al., 2011; Gordon-Larsen et al., 2004; Singh et al., 2008; Telama et al., 2014). Due to the lack of research in this age group, one could not easily know the experiences and perspectives of children's motivation towards physical activity prior to this exploratory dissertation.

Focus Group Data Collection

Focus group sessions lasted approximately 45 minutes in duration (Bricki & Green, 2007) at the YMCA after school programs at the Knox County elementary schools. Four of the six focus groups included a minimum of three to a maximum of five similarly aged child participants (Gibson, 2007; Gill, Stewart, Treasure, & Chadwick, 2008; Morgan et al., 2002). The focus groups were split into similarly aged participants based on grade level, including first,

2nd, and 3rd graders for groupings (see appendix E) (Morgan et al., 2002). The two 1st grade focus groups each only had two participants enrolled and therefore was excluded from the analyses. All focus group participants were arranged in a circle, so the participants and the principal investigator (PI) could see one another. Each focus group session was digitally recorded and transcribed verbatim within 24 hours following the session.

All focus groups were led by the PI and assisted by a research assistant. Throughout each session, the PI controlled the flow of the sessions. Additionally, the PI had the responsibility of probing and directing discussions to extract as much vivid detail from everyone in the focus groups. The research assistant oversaw handling the logistics of each session including helping with the equipment (when needed), operating the digital recorder, keeping track of time, taking notes on responses to questions and interactions between participants throughout the discussion, debriefing with the PI post-session, and providing feedback and coding on the analysis. The research assistant did not participate in the discussions (Gibson, 2007; Gill et al., 2008; Krueger, 2014; Morgan et al., 2002). The focus groups were run in a similar format starting with a welcome, overview of topic, ground rules, icebreaker activity, followed by main questions, and ending with a closing question and statement (Gibson, 2007; Gill et al., 2008; Krueger, 2014; Morgan et al., 2002). The welcome was a brief introduction from the PI and research assistant. The overview of the topic indicated why the children were asked to participate in the focus group and what they were going to be discussing for the duration of that session. The ground rules were written on a white board and included rules by which everyone must follow; such as only one person talks at a time and everyone must be respectful and listen to everyone else (see appendix F). Next was the icebreaker activity, which was the choosing of pseudonyms. The PI wrote their

chosen name on a nametag for the participants to wear for the duration of the focus group. The purpose of this activity was to familiarize the participants with one another and build rapport between the PI and participants. Following this activity, the main questions were asked through a card game (see appendix G). The card game consisted of each participant taking a card with a question on it. The PI or participant asked the question for the group to answer. This card game activity lasted for the duration of the focus group until all questions have been asked. A 'final thoughts' question was asked once all main questions have been discussed. The final thoughts included a single question asking the participants if there is anything else they would like to share about physical activities or anything else they discussed during the focus group.

It is important that the PI not just ask the main questions but follow a sequence of questions to try and gather as much rich and vivid detail from the participants as possible. This includes four different types of basic questions (Gibson, 2007; Gill et al., 2008; Krueger, 2014; Morgan et al., 2002): 1) main questions, 2) follow-up questions, 3) probing questions, and 4) prompted questions.

Main questions are open-ended questions that served the purpose to start a conversation and engage the participants. These provided rich, deep, and unexpected answers that went in many directions. These questions were used to explore the primary aim of the dissertation as to what aspects of physical activities do children enjoy and not enjoy and why. The focus group contained 6 main questions (see appendix G).

Follow-up questions inquired about the main question answers. It served to gather details and helped expand answers. Some follow-up questions were anticipated but depending on where the main question answers went, many of the follow-up questions were decided by the PI based

on the direction of the conversation. Examples of anticipated follow questions are shown in the interview guide in appendix H.

The main purpose of the probing questions was to give clarity to a main or follow-up question. Probing questions were improvised and selected when needed. General probing questions are shown in the interview guide in appendix H. In addition to probing questions, non-verbal probes were used to give clarity to answers such as remaining silent, nodding of the head, or different expressions to 'probe' for more answers. These non-verbal probes were used when deemed appropriate by the PI.

Prompts are cues or aides to recall by triggering some sort of memory association. Prompts brought the attention of participants to a topic they previously mentioned but not voluntarily discussed. Prompts included names, things, people, products, or activities. Examples of prompts are shown in appendix H.

Focus Group Analysis

The method that was used to analyze the focus group transcription data was thematic analysis with an inductive approach. Thematic analysis is a method for analyzing qualitative data that identifies and reports patterns or themes from those data (Braun & Clarke, 2006; Braun et al., 2016; Tuckett, 2005). The inductive approach (or bottom up approach) means the themes identified are strongly linked to the data themselves and not driven by theory (Patton, 1990). Other methods are theoretically bounded (Potter & Wetherell, 1987; Riessman, 1993), but with thematic analysis there is no bound theoretical framework and can be combined with a number of epistemological views (Braun & Clarke, 2006; Braun et al., 2016; Tuckett, 2005). This dissertation was conducted in an epistemological constructionism and ontological relativism

paradigm, which is most appropriate to use with no bound theoretical frameworks (Braun & Clarke, 2006; Braun et al., 2016).

There were six phases to the thematic analysis as shown in table 3-1. It is important to note that this is not a linear process but more of a recursive process that involves movement between phases when needed (Braun & Clarke, 2006).

The first phase was familiarization with the data. This first phase included reading and re-reading the transcribed data. The data were transcribed by the PI, and this provided a start to familiarization with the data (Riessman, 1993). During this initial phase, note taking in the margins on ideas for potential codes was conducted.

The second phase was generating initial codes, which started in phase one with the notes and ideas during the familiarization process. The initial codes were aimed to find a sematic feature of the data and help organize the data into meaningful groups (Braun & Clarke, 2006; Braun et al., 2016). The coding process was worked through the entire data set. After all the data were initially coded, the next phase was to search for themes.

In the third phase, the analysis was re-focused into a broader view and the investigator started to group codes together into potential themes, this is also called axial coding (Braun & Clarke, 2006; Braun et al., 2016; Tuckett, 2005). Additionally, to help organize the potential themes, thematic maps were created for all the potential themes. After the potential themes have been identified the reviewing of the themes took place.

The fourth phase involved the refinement of the potentially identified themes in two levels. The identified data within each theme should cohere in a meaningful way and should reveal distinct differences between themes. For the first level of refinement of themes, each

Table 3-1 Steps and Description of Thematic Analysis

Phase	**Description of the process**
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

coded excerpt for a theme was read and re-read to identify if they appear in a coherent pattern. If they did not appear in a coherent pattern, consideration of reworking the theme, creating a new theme, or moving excerpts to different themes took place. In the second level, a similar process was conducted to refine the themes but in relation to the entire data set and to check if the thematic map reflected the meaning in relation to the entire data set (Braun & Clarke, 2006; Braun et al., 2016). This process identified if themes 'work' with the entire data set and to code any additional data within themes. If the thematic map did not fit the data set, then there was further refinement and coding until all the themes fit.

The fifth phase was the defining and naming themes. In this phase the themes were defined and refined as to identify what each theme was about, and which aspects of the data captured each theme. Each identified theme was accompanied by a detailed analysis that identified the 'story' behind each theme and how it fits into the overall 'story' of the data set. Additionally, sub-themes were identified, which assisted the 'storytelling' of the more complex overarching themes. At the end of this phase, each theme was clearly identified and named.

The sixth and final phase was producing the report which included producing a 'clear story' of the data that convinced the reader the quality and validity of the analysis (Braun & Clarke, 2006; Braun et al., 2016). This phase included rich and vivid examples and extracts of themes from the data. Additionally, the narrative of the findings included an argument in relation to the research question.

Focus Group Biases, Reliability, and Trustworthiness

The assessment of my own biases and motivations pertaining to this dissertation is important as to ensure that my biases do not affect how I analyze, interpret, and report the

findings (Sparkes & Smith, 2013). First, being a white-privileged male comes with its own biases. “White skin privilege” comes with advantages in western society including aspects of wealth, employment, and education (McIntosh, 1988). Being male also comes with biases. Societal norms of ‘being a man’ means being tough, competitive, strong, and autonomous (O'Brien, 2009), which altered my biases at a young age. My experience with physical activity is another bias as I was always involved in sport and a division I college athlete. I, also, have always been physically active outside of sport. Also, my experience in studying self-determination theory and achievement goal theory is a potential bias. Additionally, how I expected the children to respond to the questions, based on the child population at the YMCA afterschool programs, is another bias. One exercise to display my biases with expectation of the answers was running through the focus group questions and writing the expected responses from the children. However, just the acknowledgement and displaying these biases openly reduces the likelihood of their influence (Wolcott, 1995). A technique to enhance my self-awareness of my biases was the use of a ‘critical friend’ to provide alternative reflections, viewpoints, and exploration in the analysis process (Sparkes & Smith, 2013). The ‘critical friend’ is trusted individual who asked challenging and provocative questions to provide the data to be examined through a different lens (Sparkes & Smith, 2013).

In quantitative research, reliability is one of the most important components of determining consistent, reproducible, and sound research. However, in qualitative research, reliability does not fit with qualitative assumptions (Pitney & Parker, 2009). Qualitative research does not rely on measurements, does not perform repeated trials, does not conduct the same interview on the same person more than once; therefore, there is not a need to worry if the data

can be reproduced (Pitney & Parker, 2009). Wolcott (1995) suggests that "qualitative researchers need not address reliability at all in their work except to make sure that our audiences understand why it is not appropriate measures for evaluating fieldwork" (p. 168). Accordingly, qualitative researchers have suggested the dealing of reliability should be in the form of dependability (Guba & Lincoln, 1989). The establishment of trustworthiness in qualitative work will parallel to dependable work by providing transparency in every step of the qualitative process (Smith & McGannon, 2018; Sparkes & Smith, 2013). This dissertation contains a clear audit trail including detailed descriptions from start to finish.

To establish trustworthiness of this dissertation specific steps were taken. First, a pilot test of the focus group to refine the focus group questions and process (Krueger, 2014; Pitney & Parker, 2009; Sparkes & Smith, 2013). Second, a presentation of a thick description of the focus group data will be provided to ensure enough detail so the reader can determine their own conclusion rather than telling the reader what to think (Pitney & Parker, 2009; Sparkes & Smith, 2013). Third, two independent researchers went through the data and independently coded and thematized the data. Comparison of codes and themes took place throughout the coding process to prompt discussion and different perspectives amongst codes and themes (Krueger, 2014; Pitney & Parker, 2009; Sparkes & Smith, 2013).

Participants

To be eligible to participate in the study, children were enrolled in 1st-3rd grade at the time of the study, did not have any physical or cognitive condition that would limit their ability to participate in a focus group or physical activity, and were not currently participating in any organized sport. Organized sport is defined as an activity involving physical exertion and skill

that is governed by a set of rules in which these rules are set up by an organization or community (Bourdieu, 1978). For this study, organized sport was defined as the child participating in structured activity/sport involving a facilitating coach three or more times per week, which was written on the consent form (see appendix A). All parents/guardians of the participants provided informed consent (parental permission) for their children to participate in the study, which was attached to a parent letter explaining the study (see appendix A). All children were asked to provide verbal and written assent to participate in the study (see appendix B). Written assent was obtained for all children in the study.

YMCA Afterschool Program Visit

Participants were recruited from the YMCA after school programs at Knox County Schools. The PI visited the after-school program and provided parents with packets which included an invitation letter explaining the study, two copies of parental permission and assent forms (one to return and one to keep for their records), a demographic survey, and a security envelope for completed forms to be returned in. Once enrolled, participants were grouped into similarly aged group based on grade level. Each focus group took place in a quiet room with the lead investigator and a research assistant. No parents were present (i.e. in the room) during the focus group sessions to reduce any parental influence their child's responses. A description of the focus groups was provided in an earlier section. Following the focus group session, each participant was privately asked motor competency questions by the research assistant. Next, the participants were fit with an ActiGraph GT3X+ (ActiGraph Inc., Pensacola, FL) accelerometer

that was attached to a nylon belt and worn on the right hip for seven consecutive days. The participants returned their accelerometer to the afterschool program for the lead PI to pick up.

Demographics and Anthropometrics

The parents of the participants were asked to report their children's age, sex, grade level, and race/ethnicity, and their eligibility for free/ reduced lunch on a demographic survey. Each participant had standing height and weight assessed using standard procedures wearing light clothing and socks (Lohman & Roche, 1988) following the focus group session. Body Mass Index (BMI) was calculated and used to classify each child into percentiles based on the Centers for Disease Control BMI-for-age and sex growth charts. The classifications are $<85^{th}$ percentile (healthy weight), 85^{th}-95^{th} percentile (overweight), and $>95^{th}$ percentile (obese) (Cole, Bellizzi, Flegal, & Dietz, 2000; Cole & Lobstein, 2012).

Physical Activity Assessment

Physical activity was assessed using the ActiGraph GT3X+ accelerometer (ActiGraph Inc., Pensacola, FL), that was worn on the right hip, just above the iliac crest that was fastened with an elastic belt. Child participants were asked to wear the accelerometer for seven consecutive days, except during sleeping and water activities, such as swimming and bathing. The ActiGraph GT3X+ is a tri-axial accelerometer that measures acceleration for three axes' including the X, Y, and Z planes. The accelerometer parameters will be adjusted through the program ActiLife, which is a software system that is used to set initialization, download, and analyze ActiGraph accelerometer data. Initialization is the process of preparing the accelerometers to collect physical activity data. Downloading is the retrieving the collected data

from the accelerometer to the computer software program. Analyzing is the scoring of the data in the software program. The accelerometers were initialized to sample raw data at 30 Hz. A sampling rate of 30 Hz means that the accelerometers will take 30 samples per second. According to the Nyquist-Shannon sampling theorem, 30 Hz meets the criteria of a sufficient sampling rate for human movement (Shannon, 1949). The raw data was converted to total vector magnitude counts (total activity counts). Vector magnitude is the square root of the sum of each axis squared ($\sqrt{x^2 + y^2 + z^2}$). Furthermore, the total vector magnitude counts give a general overall level of movement because it incorporates all three axes. Additionally, the data was downloaded with the low frequency extension filter on because this is typically standard practice in the field in addition to making the accelerometer more sensitive to capture all movements of the sporadic nature of children physical activity (Pate, Almeida, McIver, Pfeiffer, & Dowda, 2006). Additionally, Evenson's 2008 child-specific cutpoints (Evenson, Catellier, Gill, Ondrak, & McMurray, 2008) were used to determine intensity level of activity and to gather information on physical activity recommendations. These cutpoints were used because they have shown to be the most accurate for this age group on the hip site location (Trost, Loprinzi, Moore, & Pfeiffer, 2011). The total vector magnitude counts were used demographically to gather the general physical activity levels of the child participants.

Perceived Motor Competence Assessment

Perceived motor competence was assessed using the Harter's Scale of Perceived Competence and Acceptance (see appendix D) (Harter & Pike, 1984). This self-report uses five different side-by-side scenarios where the child responded with the statement that is most like him/her in terms of their physical ability. The scale is scored from 1-4, with 1 indicating low

perceived motor competency and 4 indicating high motor competency. A score of 1 or 2 indicates low perceived motor competency and a score of 3 or 4 indicated higher perceived motor competency. The five questions were averaged to gather an overall perceived motor competency for physical activity. The assistant researcher explained the assessment to the children and read each question and recorded the participant's response on a data sheet. This assessment was completed after the focus group session.

Statistical Analysis

Quantitative data was analyzed with SPSS version 24 (IBM Corporation, Armonk, New York). Means and frequencies were calculated for all demographic, anthropometric, physical activity, and motor competency data. Pearson correlations were conducted for all physical activity data, perceived motor competency data, age, grade, and school site. Independent samples t-tests were run to discern whether there were differences in any of the variables between school sites.

CHAPTER FOUR
MANUSCRIPT

Abstract

There is a sharp decline in physical activity levels during childhood. Thus, the establishment of proper physical activity routines in the early stages of life is critical to form life-long physical activity habits. Children tend to be motivated for physical activities that they enjoy but research in this realm is scarce in children younger than eight years old. Thus, the purpose of this study was to explore why children enjoyed or did not enjoy physical activities and to measure physical activity and perceived motor competence. A convergent parallel mixed-methods study design was employed. First, 2nd, and 3rd grade students enrolled at two different YMCA afterschool programs wore an accelerometer on the right hip for seven consecutive days, completed Harter's perceived motor competency survey, and took part in focus groups. However, there was an insufficient number of first grade participants to use their data, so they were excluded from the data analysis, leaving 16 total participants in 2nd and 3rd grade. There were two 2nd grade and two 3rd grade focus groups, which consisted of three to five participants each. Pearson correlations were conducted with all physical activity, perceived motor competency, demographic, and anthropometric data. Focus group data underwent thematic analysis using an inductive approach. Physical activity data revealed that just over half the participants met physical activity recommendations and was similar among each YMCA site. There was a moderate positive correlation between age and percent of time spent in vigorous activity (r=0.542, p=0.045). There were moderate to high positive correlations between school site and percent of time spend in moderate physical activity (r=0.783, p=0.01), percent of time

spent in vigorous physical activity (r=0.537, p=0.048), and percent of time spent in moderate to vigorous physical activity (r=0.738, p=0.003). These correlations indicated an association of higher physical activity with the second school site. Additionally, the average perceived motor competency score was 3.0 (out of 4), which indicates this sample contains a moderately high perceived motor competence. However, there associations between perceived motor competency scores and age, grade, focus groups, or school site (p>0.05). Four over-arching themes were found as to why children enjoyed or did not enjoy physical activities, which included 1) physical activity is sport, 2) social influence, 3) perceived competence, and 3) physical activity characteristics. Children equated physical activity to sport. Social influence found to have five subthemes including 1) peers, 2) parents, 3) siblings, and 4) gender norms. Perceived competence was displayed through past accomplishments or failures, which shaped their perceived capabilities. Physical activity characteristics included four subthemes: 1) aspects of roughness and danger, 2) movement and action, 3) teammates, and competition, and 4) rules. These themes seem to be related to Self-Determination Theory's three basic psychological needs (autonomy, competence, and relatedness) and Achievement Goal Theory's orientations (mastery and performance). Results suggest exposing children early to wide varieties of physical activities may help minimize activities they dislike and build their perceived competence and social bonds.

Introduction

Physical activity habits formed at a young age have been shown to track into adulthood (Craigie et al., 2011; Gordon-Larsen et al., 2004; Jones et al., 2013; Telama et al., 2014). Therefore, the establishment of proper physical activity routines in the early stages of life is critical (Bayley, 1936; Cardon et al., 2011; Frost et al., 2001; Pellegrini & Smith, 1998; Rubin,

1977; Rubin et al., 1978; Seefeldt & Haubenstricker, 1982). As children grow and develop from young children (0-5 years) through childhood (6-12 years), they accumulate physical activity in different ways (Carmichael, 1970; Frost et al., 2001; Gallahue et al., 2006; Haubenstricker & Seefeldt, 1986; Malina et al., 2004; Poinsett, 1996). Young children typically play, which aids as a vital means to develop higher cognitive structures, including comparative thinking structures, symbolic representation structures, and logical reasoning structures (Gallahue et al., 2006; Malina et al., 2004). These higher cognitive structures are important for developing fundamental motor locomotor, manipulative, and stability skills, which helps them gain control over their body to gain confidence in their movements (Frost et al., 2001; Gallahue et al., 2006; Malina et al., 2004; Pellegrini & Smith, 1998). Fundamental motor skill development provides a basis and the building blocks for specialized motor skills (Frost et al., 2001; Gallahue et al., 2006; Malina et al., 2004).

Once fundamental motor skills have been developed and refined, which happens during childhood (6-12 years), children begin to develop specialized motor skills (Gallahue et al., 2006; Haubenstricker & Seefeldt, 1986; Malina et al., 2004; Seefeldt & Haubenstricker, 1982). Specialized motor skills are necessary for success in certain types of movements that are utilized in sport and recreation (Gallahue et al., 2006). One example to illustrate this concept is if a child develops a fundamental skill of throwing and builds confidence in that skill, they may choose to engage in a sport that uses throwing, such as softball or baseball, and begin to specialize that skill. As children age, they tend to move away from play and begin to participate in more organized physical activities and sport (Frost et al., 2001; Gallahue et al., 2006; Malina et al., 2004).

Development of motor skills contributes to a child's perceived motor competence (Gallahue et al., 2006; Theeboom et al., 1995; Woods et al., 2007). Children tend to participate in activities that incorporate their most developed (or perception of developed) motor skills (Gallahue et al., 2006). In other words, children tend to participate in activities that think they excel at. Additionally, physical activity is linked to motor skill development (Barnett et al., 2009; Stodden et al., 2008; Williams et al., 2008). As such, some youth may not develop some motor skills, leading to a decline in physical activity levels from the transition between childhood to adolescence (Gallahue et al., 2006; Olds et al., 2012; Sallis et al., 2000; Troiano et al., 2008; Trost et al., 2002). Only 8% of adolescents are meeting physical activity recommendations as opposed to 42% of children meeting recommendations (Troiano et al., 2008). This decline could be an indicator that children are not being physically active due to either 1) the lack of developed specialized skills for certain physical activities or 2) the child's perception that they have not developed those specialized skills to participate in certain physical activities (Stodden et al., 2008; Theeboom et al., 1995; Woods et al., 2007). However, being physically active is a choice, and research has shown that children tend to participate in activities they enjoy (Weiss et al., 2012).

Development of fundamental motor skills, perceived motor competence, and enjoyment may be connected as children tend to enjoy those physical activities they are good at or think they are good at (Scanlan et al., 1993; Robinson, 2011). Furthermore, enjoyment of an activity is a determining factor in the motivation for continued participation in regular physical activity (Weiss, 2000). Therefore, to help attenuate this decline in physical activity, there needs to be development of fundamental motor skills and building of perceived motor competence to

increase the enjoyment of physical activity and potentially enhance motivation to be physically active.

Motivation for physical activity is defined as the drive or desire by which an individual approaches physical activity (Hagger et al., 2007). Motivation is an important influence that determines participation in regular physical activity. Young children are inherently motivated to be active (Sebire et al., 2013), but their activity declines as they age (Troiano et al., 2008). Few studies have assessed physical activity motivation in children especially prior to the transition from childhood to adolescence (Pannekoek et al., 2013). Therefore, there is a lack of physical activity motivational research pertaining to children less than eight years of age (Pannekoek et al., 2013).

This gap in research may be attributed to the use of self-reported methods to assess motivation towards physical activity in older youth (10+ years) (Pannekoek et al., 2013; Scott, 1997). It has been assumed that young children (aged 8 or less) have not yet developed the cognitive capacities to accurately answer self-report questionnaires (Nicholls, 1989; Pannekoek et al., 2013). Children may experience difficulties comprehending questions and properly responding to items on questionnaires that were developed for adolescents and young adults (Pannekoek et al., 2013; Scott, 1997). Furthermore, parent proxy is a popular method for obtaining information about young children, however, this method had been deemed inaccurate and a secondary source of data (Pannekoek et al., 2013). Alternate methodological assessments of motivation need to take place for children less than eight years old (Scott, 1997). It is recommended that focus groups should be used as a first step in an area where the research is sparse and when exploring social aspects of life such as motivations and experiences (Green &

Thorogood, 2018). When examining individual interviews and focus groups both have their advantages (Heary & Hennessy, 2006). However, when conducting one-on-one interviews with younger children, there may be feelings of discomfort and unwillingness to speak due to the unfamiliarity with the interviewer (Morgan, 1993). Focus groups may offer a better method of assessment as they provide a comfortable atmosphere where the participants can express their thoughts, feelings, and experiences among their peers (Gibson, 2007; Morgan et al., 2002).

Furthermore, the methodology to assess motivation for physical activity includes either exclusively quantitative or qualitative methods (Munroe-Chandler, 2005). A mixed methods approach would combine the strengths of qualitative and quantitative methodology to elicit further insights into motivations for physical activity in children eight years or less (Creswell & Clark, 2017; Schoonenboom & Johnson, 2017; Venkatesh, Brown, & Sullivan, 2016). This combined approach can provide an understanding that might be missed using a single method (Johnson & Onwuegbuzie, 2004). Mixed methods can strengthen evidence through confirmation and substantiation of findings while the different data collection methods can neutralize each method's biases or weaknesses (Creswell & Clark, 2017). The use of multiple methods can complement and explain each other (Denzin, 1994). Denzin (1994) state, "the use of multiple methods reflects an attempt to secure in-depth understanding of the phenomenon in question" (p. 4). Therefore, the incorporation of a mixed methods approach in youth physical activity motivation research could bring new insight to this complex issue.

Therefore, the purpose of this study was to explore why children enjoyed or did not enjoy physical activities through small focus groups and to measure physical activity and perceived motor competence. Gathering the reasons why children like or dislike certain physical activities

will reveal what motivates their engagement in those activities. The questions aimed to capture experiences and views on physical activities and their enjoyment of activities. Additionally, the use of the quantitative portion to collect physical activity and perceived motor competency data will enhance the understanding of the qualitative data. According to Pannekeok (2013), insights on motivation for physical activity in this age group can inform design for interventions to promote enjoyable physical activities to increase motivation (Pannekoek et al., 2013). This is important as well-designed physical activity interventions could play a critical role in prevention and treatment of overweight and obesity in young children (Janssen et al., 2005).

Methods

Study Design and Participants

A convergent parallel mixed methods study design provided the opportunity to obtain qualitative data regarding children's physical activity experiences and preferences and to utilize measures of levels of physical activity and perceived motor competency to provide insight into the children's activity experiences and preferences. The study took place during YMCA afterschool programs at two participating public elementary schools (school site 1 and school site 2). The YMCA afterschool programs are unique to each school that participates. Each program includes many choices for children enrolled such as arts and crafts, physical activity opportunities, and homework help. The program begins immediately following school and lasts until 6pm but parents may pick up their children at any time. This study involved the collection of basic demographic data (age, sex, etc.), anthropometric variables (height, weight), physical activity levels, perceived motor competence, and physical activity experiences. Physical activity

experiences were collected in small (3-5 children) focus groups. Approval for this study was granted by the university's institutional review board and the public-school system institutional review board. Additional approval was granted by each participating elementary school principal and the YMCA afterschool program director.

To be eligible to participate in the study, children were enrolled in 1st-3rd grade at the time of the study, did not have any cognitive or physical condition that would limit their ability to participate in a focus group or physical activity, and were not currently participating in any organized sport. Organized sport is defined as an activity involving physical exertion and skill that is governed by a set of rules in which these rules are set up by an organization or community (Bourdieu, 1978). For this study, participation in organized sport was defined as the child participating in structured activity/sport involving a facilitating coach three or more times per week, which was written on the consent form (see appendix A). Additionally, a minimum of three focus group participants was needed to be included in the analysis. All parents/guardians of the participants provided informed consent (parental permission) for their children to participate in the study, which was attached to a parent letter explaining the study (see appendix A). All children were asked to provide verbal and written assent to participate in the study (see appendix B). Written assent was obtained for all children in the study.

Afterschool Visit

Participants were recruited from the YMCA after school programs at the two elementary schools. The principal investigator (PI) visited the after-school program and provided parents with packets which included an invitation letter explaining the study, two copies of parental permission and assent forms (one to return and one to keep for their records), a demographic

survey, and a security envelope for completed forms to be returned in. Once enrolled, participants were grouped into similarly aged group based on grade level. Each focus group took place in a quiet room with the PI and a research assistant. No parents were present (i.e. in the room) during the focus group sessions to reduce any parental influence on their child's responses. Following the focus group session, each participant was privately asked motor competency questions by the research assistant. Next, the participants were fit with an ActiGraph GT3X+ (ActiGraph Inc., Pensacola, FL) accelerometer that was attached to a nylon belt and worn on the right hip for seven consecutive days. The participants returned their accelerometer to the afterschool program for the lead PI to pick up.

Rationale for Mixed Methods

In order to explore children's motivation for physical activity, a qualitative methodology is the most appropriate approach for young children. However, it is suggested that to develop a more complete understanding of the current research problem it is necessary to obtain different but complementary data (Creswell & Clark, 2017). Therefore, collecting complimentary quantitative data through physical activity levels and perceived motor competency may provide a better understanding and interpretation of the results. The convergent parallel mixed method approach included the collection of both types of data (qualitative and quantitative) and analysis of the data separately. Additionally, with this approach, the results were separated, and the interpretation was combined in the discussion (Creswell & Clark, 2017).

Qualitative Methodology

This study is underpinned by ontological relativism and epistemological constructivism. This paradigm assumes that reality is fluid, multiple, and dependent on the meanings given to objects, events, and practices through an individuals' past experiences (Smith & McGannon, 2018). This epistemology guided what the researcher said about the focus group data and how to theorize meaning. Using this research paradigm, theorization of motivations and experience were made in a unidirectional relationship between meaning and experience (Braun & Clarke, 2006; Braun et al., 2016; Potter & Wetherell, 1987; Riessman, 1993; Widdicombe & Wooffitt, 1995; Willig, 1999). As such, this study seeks to understand the participants' experiences with physical activity as it relates to their participation through actions and self-awareness (Smith & McGannon, 2018).

Qualitative Data Collection

Focus group sessions lasted approximately forty-five minutes in duration (Bricki & Green, 2007) at the YMCA after school programs at each school. Each focus group included a minimum of three to a maximum of five child participants (Gibson, 2007; Gill et al., 2008; Morgan et al., 2002). The focus groups were split into similarly aged participants based on grade level, including 1st, 2nd, and 3rd grade for groupings (Morgan et al., 2002). All focus group participants were arranged in a circle, so all participants and the PI could see one another. Each focus group session was digitally recorded and transcribed verbatim within 48 hours following the session.

Every focus group was run in a similar format starting with a welcome, overview of topic, ground rules, icebreaker activity, followed by main questions, and ending with a closing

(Gibson, 2007; Gill et al., 2008; Krueger, 2014; Morgan et al., 2002). The welcome was a brief introduction from the PI and the research assistant. The overview of the topic indicated why the children were asked to participate in the focus group and what they were going to be discussing for the duration of that session. The ground rules were written on a white board and included rules by which everyone must follow such as only one person talks at a time and everyone must be respectful and listen to everyone else (see appendix F). Next was the icebreaker activity, which was choosing of pseudonym names. The participants also wrote their chosen name on a nametag to wear for the duration of the focus group. The purpose of the icebreaker activity was to familiarize the participants with one another and build rapport between the PI and participants. Following the icebreaker activity, the main questions were asked through a card game (see appendix G). The card game consisted of each participant taking a card with a question on it. The PI or participant asked the question for the group to answer. This card game activity lasted for the duration of the focus group until all questions have been asked. A 'final thoughts' was asked once all main questions have been discussed. The final thoughts included a single question asking the participants if there is anything else they would like to share about physical activities or anything else they discussed during the focus group.

Qualitative Analysis

The method that was used to analyze the focus group transcription data was thematic analysis with an inductive approach. Thematic analysis is a method for processing qualitative data that identifies and reports patterns or themes from that data (Braun & Clarke, 2006; Braun et al., 2016; Tuckett, 2005). The inductive approach (or bottom up approach) means the themes identified are strongly linked to the data themselves and not driven by theory (Patton, 1990).

Other methods are theoretically bounded (Potter & Wetherell, 1987; Riessman, 1993), but with thematic analysis there is no bound theoretical framework and can be used with a number of epistemological views (Braun & Clarke, 2006; Braun et al., 2016; Tuckett, 2005). This study was conducted in an epistemological constructionism and ontological relativism paradigm, which is most appropriate to use with no bound theoretical frameworks (Braun & Clarke, 2006; Braun et al., 2016).

Reliability and Trustworthiness

To establish trustworthiness of this study, specific steps were taken. First, a pilot test of a focus group took place to refine the questions and process (Krueger, 2014; Pitney & Parker, 2009; Sparkes & Smith, 2013). Second, the two researchers discussed their potential biases as expectations. Additionally, mock focus groups amongst the researchers took place to establish what they expected the participants to say, which contributed to biases. Third, a presentation thick description of the focus group data to provide enough detail so the reader can determine their own conclusion rather than telling the reader what to think (Pitney & Parker, 2009; Sparkes & Smith, 2013). Fourth, two independent researchers analyzed the data and independently coded and thematized the data. Comparison of codes and themes took place throughout the coding process to prompt discussion and different perspectives amongst codes and themes (Krueger, 2014; Pitney & Parker, 2009; Sparkes & Smith, 2013).

Quantitative Assessments

Demographics and Anthropometrics

The parents of the participants were asked to report their children's age, sex, grade level, race/ethnicity, and their eligibility for free/reduced lunch on a demographic survey. Each participant had standing height and weight assessed using standard procedures wearing light clothing and socks (Lohman & Roche, 1988) following the focus group session. Body Mass Index (BMI) was calculated and used to classify each child into percentiles based on the Centers for Disease Control BMI-for-age and sex growth charts. The classifications are $<85^{th}$ percentile (healthy weight), 85^{th}-95^{th} percentile (overweight), and $>95^{th}$ percentile (obese) (Cole et al., 2000; Cole & Lobstein, 2012).

Physical Activity Assessment

Physical activity was assessed using the ActiGraph GT3X+ accelerometer (ActiGraph Inc., Pensacola, FL), that was worn on the right hip, just above the iliac crest that was fastened with an elastic belt. Child participants were asked to wear the accelerometer for seven consecutive days, except during sleeping and water activities such as swimming and bathing. The accelerometers were initialized to sample raw data at 30 Hz. Additionally, the data were downloaded with the low frequency extension filter on because this is typically standard practice in the field in addition to making the accelerometer more sensitive to capture all movements of the sporadic nature of children physical activity (Pate et al., 2006). Activity counts per minute (just the x-axis) and Evenson's 2008 child-specific cutpoints (Evenson et al., 2008) were used to determine the intensity level of activity.

Perceived Motor Competency Assessment

Perceived motor competence was assessed using the Harter's Scale of Perceived Competence and Acceptance (see appendix D) (Harter & Pike, 1984). This self-report uses five different side-by-side scenarios where the child responded with the statement that is most like him/her in terms of their physical ability. The scale is scored from 1-4, with 1 indicating low perceived motor competency and 4 indicating high motor competency. A score of 1 or 2 indicates low perceived motor competency and a score of 3 or 4 indicated higher perceived motor competency. The five questions were averaged to gather an overall perceived motor competency for physical activity. The assistant researcher explained the assessment to the children and read each question and recorded the participant's response on a data sheet. This assessment was completed one on one with a research assistant after the focus group session.

Quantitative Statistical Analysis

Quantitative data were analyzed with SPSS version 24 (IBM Corporation, Armonk, New York). Means and frequencies were calculated for all demographic, anthropometric, physical activity, and motor competency data. Pearson correlations were conducted for all physical activity data, perceived motor competency data, age, grade, and school site. Independent samples t-tests were run to discern whether there were differences in any of the variables between school sites.

Results

The primary aim of this dissertation is to explore why children enjoy or do not enjoy physical activities during focus groups and link their responses to their physical activity levels

and perceived motor competency. By asking the children their likes and dislikes of activities, information regarding their enjoyment or unenjoyment can be gathered. Enjoyment of an activity is a main factor that drives the motivation to participate in an activity (Whitehead & Biddle, 2008). The study intended to explore the enjoyment, a determinant of motivation, for why children choose to engage in certain physical activities. The quantitative assessments allowed for a mixed methods approach to better understand the participants' responses and draw conclusions from the data. A total of 20 participants took part in the focus group sessions. However, the two, first-grade focus groups only contained two members each; therefore, they were excluded from the analysis, leaving 16 participants in 2nd and 3rd grade. The qualitative analysis of the data revealed four over-arching themes that include: sport is physical activity, social influence, perceived competence, and characteristics of physical activity. There were no differences, in terms of themes between grade level (2nd and 3rd), or between the two afterschool programs. Through the use of a convergent parallel mixed methods approach, it allowed the quantitative data to assist in the interpretation of the qualitative data in the discussion.

Quantitative Results

Fourteen of the 16 participants recruited into the study returned the accelerometer. The 14 participants wore the accelerometer for at least two days with an average of six. All 14 participants were included in the physical activity data analysis. All 16 participants completed the perceived motor competency survey with the researcher and took part in the focus group session. The demographics and anthropometrics of each participant are shown in Table 4-1.

Table 4-2 includes the physical activity and perceived motor competency scores for each focus group member. The average demographic and anthropometric data, physical activity data,

and perceived motor competency scores are included in Table 4-3 by focus group, and for all of the participants. There were two different elementary school sites. The first site included focus group numbers 1 and 3, while the second site included focus group numbers 2 and 4. Eight of the 14 participants met physical activity recommendations. There was a moderate positive correlation between age and percent of time spent in vigorous activity (r=0.542, p=0.045). Older participants had higher percent time spent in vigorous physical activity. There were moderate to high positive correlations between school site and percent of time spend in moderate physical activity (r=0.783, p=0.01), percent of time spent in vigorous physical activity (r=0.537, p=0.048), and percent of time spent in moderate to vigorous physical activity (r=0.738, p=0.003). This indicated the second site was associated with higher levels of moderate, vigorous, and moderate to vigorous physical activity. However, independent sample t-tests indicate there were no differences in percent of time spent in moderate, vigorous, or moderate to vigorous physical activation and school site. There were no further significant correlations in terms of physical activity (p>0.05). Additionally, the average perceived motor competency score was 3.0 (out of 4), which indicates this sample contains a moderately high perceived motor competence. However, there were no significant correlations or differences between perceived motor competency scores and age, grade, focus groups, or school site (p>0.05).

Table 4-1 Demographics

Table 4.1. Demographics

Focus Group Number	Pseudonym Name	Sex	Age (years)	Height (cm)	Weight (kg)	BMI ($\frac{kg}{m^2}$)	BMI Percentile	Race/Ethnicity	Eligible for Free/Reduced Lunch
Second Grade									
Focus Group 1	Dwayne "The Rock" Johnson	M	7.6	117.6	27.3	19.7	95	White, Non-Hispanic	No
	Brock Lesner	M	7.8	123.4	26.3	17.3	79	White, Non-Hispanic	No
	John Cena	M	7.6	122.9	27.3	18.1	88	White, Hispanic	No
	Unicorns	F	8.4	127.3	30.1	18.6	85	White, Non-Hispanic	No
	Renaldo	M	8.4	127.8	26.9	16.5	62	White, Non-Hispanic	No
Focus Group 2	Supergirl	M	8.1	130.3	29.6	17.4	79	White, Non-Hispanic	No
	Flamethrower	M	8.5	140.7	31.9	16.1	53	White, Non-Hispanic	No
	Batman	M	8.4	136.1	29.6	15.9	51	White, Non-Hispanic	No
Third Grade									
Focus Group 3	Spikey	M	8.8	122.4	27.3	18.2	83	White, Non-Hispanic	No
	Ava	F	9.3	132.3	30.0	17.1	61	White, Non-Hispanic	No
	OtherFlash	M	9.0	137.7	31.9	16.8	63	Black/African American, Non-Hispanic	Yes
	Baller	M	8.6	143.3	30.2	14.7	18	Black/African American, Non-Hispanic	No
	Flash5	M	9.4	124.7	26.0	16.7	57	White, Non-Hispanic	No
Focus Group 4	Strongman	M	9.6	132.8	27.3	15.5	28	White, Black/African American, Non-Hispanic	No
	Soccerqueen	F	9.3	143.0	30.9	15.1	23	White, Non-Hispanic	No
	Baseballman	M	9.7	138.4	29.8	15.6	28	White, Non-Hispanic	No

Table 4-2 Physical Activity and Perceived Motor Competency

Table 4.2. Physical Activity and Perceived Motor Competency								
Focus Group Number	**Pseudonym Name**	**Wear Time (min per day)**	**Average MVPA (min per day)**	**Counts per minute (X-Axis)**	**Percent spent in Light Physical Activity**	**Percent spent in Moderate Physical Activity**	**Percent spent in Vigorous Physical Activity**	**Perceived Motor Competency**
				Second Grade				
Focus Group 1	Dwayne "The Rock" Johnson	488.0	46.8	778.9	40.68%	6.30%	3.29%	2.8
	Brock Lesner	823.8	75.4	770.9	40.04%	6.20%	2.96%	4
	John Cena	INC	INC	INC	INC	INC	INC	3.4
	Unicorns	679.5	44.5	734.4	48.68%	5.02%	1.53%	2.8
	Renaldo	660.7	72.7	801.7	42.80%	6.93%	4.06%	3.2
Focus Group 2	Supergirl	257.2	30.9	829.5	31.84%	8.11%	3.93%	2.8
	Flamethrower	707.4	115.7	976.4	43.21%	9.69%	6.66%	2.8
	Batman	603.5	76.8	1045.1	42.71%	8.72%	4.00%	2.4
				Third Grade				
Focus Group 3	Spikey	679.4	80.2	714.1	45.40%	7.69%	4.12%	2.6
	Ava	INC	INC	INC	INC	INC	INC	2.2
	OtherFlash	519.7	63.0	984.4	41.49%	7.24%	4.88%	3.2
	Baller	690.5	52.7	553.1	33.36%	4.39%	3.24%	2
	Flash5	394.9	43.9	898.4	35.55%	5.99%	5.14%	3.6
Focus Group 4	Strongman	610.1	89.6	833	30.11%	7.46%	7.23%	4
	Soccerqueen	509.5	74.5	1068.2	44.18%	9.29%	5.33%	2.8
	Baseballman	154.1	18.8	800.9	37.94%	8.15%	4.01%	3.6

Table 4-3 Demographics, Physical Activity, and Perceived Motor Competency Averages

Table 4.3. Average Demographics									
Focus Group Number	**Age (years)**	**Height (cm)**	**Weight (kg)**	**BMI ($\frac{kg}{m^2}$)**	**BMI Percentile**	**Wear Time (min per day)**	**Average MVPA (min per day)**	**Percent Meeting Recommendations**	**Perceived Motor Competency**
Second Grade									
Focus Group 1 (n=4* or 5)	7.9±0.4	123.8±4.1	27.6±1.4	18.0±1.2	81.8±12.5	*663.0±137.5	*59.8±16.4	*50%	3.2±0.5
Focus Group 2 (n=3)	8.3±0.2	135.7±5.2	30.4±1.3	16.5±0.8	61.0±15.6	522.7±235.7	74.5±42.4	66.7%	2.7±0.2
Third Grade									
Focus Group 3 (n=4* or 5)	9.1±0.4	132.1±8.7	28.5±2.4	16.4±1.9	56.4±23.7	*571.1±141.0	*59.9±15.6	*50%	2.7±0.7
Focus Group 4 (n=3)	9.6±0.3	138.1±5.1	29.4±1.9	15.4±0.2	26.3±2.9	424.6±239.6	60.9±37.3	66.7%	3.5±0.6
Second and Third Grade									
Combined Focus Group (n=14* or 16)	8.7±0.7	131.3±8.0	28.7±2.0	16.8±1.5	59.6±24.8	*522.3±184.8	*63.8±25.4	*57.1%	3.0±0.6

Qualitative Results

Figure 4-1 illustrates the themes and sub-themes for enjoyment and non-enjoyment of physical activities. The following sections describe the themes and subthemes supported by representative quotes.

Theme 1. Physical Activity is Sport

One main theme from this study was that the participants did not differentiate the term 'physical activity' from 'sport'. Although this study intended to explore enjoyment and motivation for participation in general physical activities, almost all the participants discussed 'sports' when they were asked about their 'physical activity' experiences and preferences. One example is from Baseballman. When asked what kinds of physical activities do you like to do, he responded, "Baseball. Sports, I like sports." A different example is from Flamethrower, when asked the same question said, "Well, I, I like to play football, basketball, baseball, and um, soccer, and sometimes I play rugby."

Theme 2. Social Influence

Social influence was an overarching theme that the children cited in activities they like and dislike. The subthemes of social influence include 1) peers, 2) parents, 3) siblings, and 4) gender norms.

Subtheme: Peers

Most of the participants stated that they do the activities they enjoy with a 'friend' and often identified members in the focus group session. An example is from Brock Lessner, when asked who he does his physical activities with, stated, "Usually, like you, you, you [points to

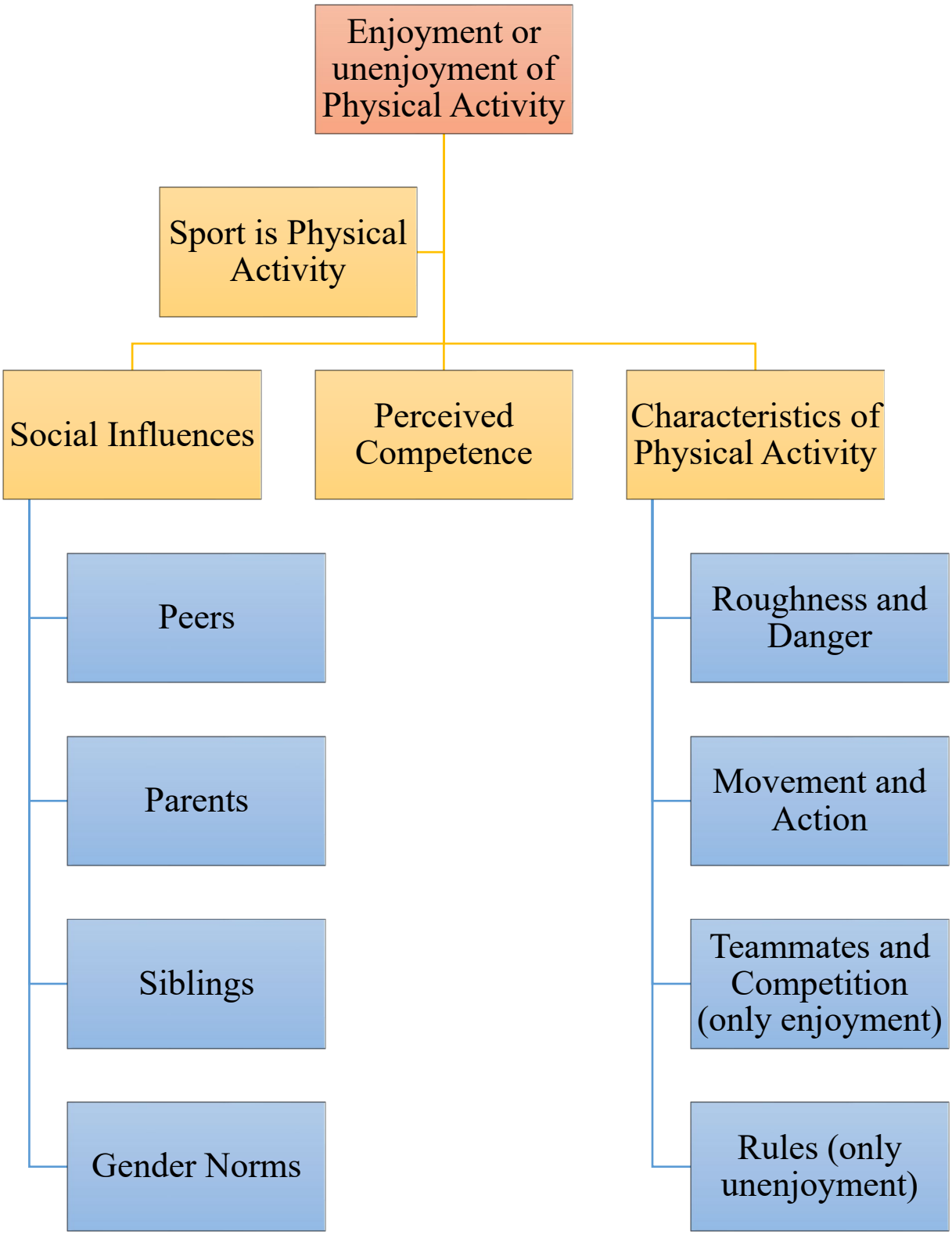


Figure 4-1 Themes and Subthemes

friends around table].” A different example is shown from Baseballman who said, “…now I play basketball with my best friend, one of my best friends. Umm, our season just ended we got, we lost in the playoffs and then, um, then we play basketball pretty often, we go to each other’s houses a lot.”

Interestingly, when the participants discussed activities they did not enjoy, they said that their friends did not participate in those activities. One example was from SoccerQueen, who said, “Ahh, I don’t really think any of my friends play tennis or football.” The participants stated their friends do what they do such as Baseballman who explained, “Most of my friends play baseball and basketball.”

Furthermore, some members discussed how friends can leave them out of physical activities. John Cena stated that some physical activities make him feel “sad” and when asked to further explain, he said, “It make me, um, sometimes they make me feel left out. Because sometimes people don’t let me play.”

Subtheme: Parents

Many of the participants talked about participating in physical activities with their parents. Parents participating in activities with their children is call co-participation. The participants discussed doing activities they like with their parents (i.e. co-participation) such as Renaldo, who stated,

> It’s like the same thing that John Cena said but it’s like I- I- I like baseball sometimes and I like to like hit balls in the backyard with my Dad or practice catching. But I usually like to jump on the trampoline with him or like catch and throw footballs with him.

Other participants talked about their parents providing support for new activities that they enjoyed. An example is from Strongman that explained the support he got from his dad to try new sports;

> […] have you ever heard of a sport named hockey? Yeah but we don't have skates and so we did it on the yard and we started doing yard hockey and then my dad came out and says I thought you liked football? And I said I do like football but sometimes I, ah-, um, I want to play a different sport and he took me to go ice skating with my friend and my friend. Um, so we start skating and then I got into hockey. And same thing with basketball I- I have a hoop and I- I used to shoot basketball when I was little cuz I- I had a little basketball so I actually can make it.

This illustrates the support Strongman's father gave him to try hockey and basketball, two activities he said he 'loved' to participate in.

Participants also described activities they did not enjoy because their parents forced them into participating. Strongman discussed how his father 'makes him do' a very structured regimen to keep him strong and in shape for football. He said,

> Well, football can be tiring, um, cuz my, um, I also when I started football my dad used to wait, he wanted me to be strong for so I wouldn't get knocked down and stuff. So, it, he wanted me to have strong arms and like strong legs and he wanted me, he- he, didn't want me to grow fat on me, so, like, like to keep my abs but I can have more space to hit people, so, at usually I still do it but like, 5:30 in the morning I would wake up even before school, like cuz I did it this morning, 5:30. Before school I would run like five raps, laps around the whole neighborhood, like five and without stopping and um, also I

have, I have each night I have to do at least 100 push-ups, 50 by 50. But my dad makes me do it.

Subtheme: Siblings

In addition to peers and parents identified as social influences, siblings were discussed. One example for siblings' influence in activities was Baseballman, who talked about physical activity with his younger brother;

> […] I like wrestling with my brother in the yard cuz he'll ask me [Baseballman] do you wanna wrestle? And I'll say yes and he'll tell me let's go outside and then we'll wrestle in the grass and then, um, I just like playing sports and doing it.

Other participants talked about becoming involved in certain activities because their siblings were involved in them such as Spikey, who said, "I just kind of got into soccer and the others [physical activities] because of my [older] brother."

Interestingly, the participants that talked about their older siblings, seemed to engage in activities in what their older siblings previously participated in. Those with younger siblings talked about how they 'played' with their younger siblings in a non-sport context. It appeared that older and younger siblings had different influences on physical activity participation.

However, participants also described how their siblings had some influence on the disengagement from physical activities. This disengagement may be from the negative physical activity experiences from their siblings. Again, Spikey said, "I don't, I don't like, um, football because, because my [older] brother broke both of his ACL's."

Subtheme: Gender Norms

One subtheme that emerged from two focus groups (one 2nd and one 3rd grade) was gender norms. In both instances, it was brought up by male participants who stated they "did not like sports for girls." In the 2nd-grade focus group, Brock Lessner stated his dislike for physical activities for ladies saying, "I don't like, don't like doing physical activities that don't have a lot of action and physical activities for ladies, and physical, and bicycling." When asked what he means by 'sports for girls' other male members from the group started listing sports such as cheerleading, ballet, gymnastics, and volleyball. The lone female in the group, Unicorns, responded to the Brock Lessner and the other males by saying, "Almost all sports are allowed to have girls in them." The response to Unicorns was the male members stating they were not good at those activities.

In the other instance, during a 3rd-grade focus group from Flash5, who stated he did not like volleyball and tennis. When asked what he did not like about those activities, his response was, "Well, I feel like it's like a girly sport." He also mentioned, "I just, usually when it's on TV or something it's, it's a girls match." When asked to further explain, Flash5 said, "I-, I feel like throughout the like world it's usually a girl's sport. More girls like play them." All the other male participants (Baller, Spikey, and Otherflash) agreed with Flash5. The sole female, Ava, in this focus group did not talk about this topic.

Theme 3. Perceived Competence

In the present study, competence in physical activities was described through the children's past accomplishments and their perceived capabilities (i.e. what they think they are 'good' and 'bad' at).

Those participants who described achieving accomplishments during their experiences with physical activity stated they enjoyed that activity. An example came from Renaldo, who excitedly talked about the accomplishment of riding his bike without training wheels. Renaldo said, "I-I-I was like so determined to like to like finally get to ride my bike the right way and then I did and was like really happy and my mom let me have a Snicker's bar." Renaldo stated he felt very "determined" to accomplish this goal and was highly motivated to do so.

Some participants described specific accomplishments in a sport setting that led them to 'win' games. One example was described in a 3rd-grade focus group by Baseballman, that talked about his experience with football and said, "I tried it and I liked it and we won the championship my first year. I got the winning interception."

Furthermore, some of the participants brought up negative past experiences where they failed in the activities they did not like to do. Flamethrower did not enjoy golf and described his frustrations;

> Yeah, golf! Like, for some reason, like every time I play golf I just hit it like I just… it was, the hole was just really far away and I missed every single time cuz I would hit, eh, sometimes I would hit it but not a lot. It was like 16% chance and I would hit it and it would go past it and then I would hit it from there and then I would score. I meant like I missed every single time, so, it was just hard. Sometimes like I just hit passed, missed, missed, missed, missed and that didn't happen very much but sometimes it did so.

In a different focus group, Unicorns, said "I don't like baseball too because, one, I never ever hit-the-ball." Both the quotes above illustrate that past failures construct a low perceived competence, which is why they do not enjoy those activities.

Participants in the focus groups had a perception of their capability in physical activities. It was clear from the participants that they knew what they are 'good' and 'bad' at and provided examples of past experiences. This perception provides information on how the child feels about his/her ability to participate in an activity. Most participants had a perception that they were 'good' at the activities they enjoyed doing. In similar fashion, the participants had a perception that they were 'bad' at the activities they did not like to do. An example of a 'good' perception of capability can be seen with SoccerQueen, who said, "And I like basketball because I'm really good at making hoops very far away and like at really weird angles so, that's why I like that, um, basketball too." Another example came from Brock Lessner, who described how he got good at baseball by relating it back to a chapter from a book;

> Um, once I read a chapter book called Cliff the Archer, and it's about a boy named Cliff and he wants to be an archer and then it tells, um, the reader like how he becomes an archer and every time, every chapter he gets better and better and that's kind of how I got to a really good baseball player.

Furthermore, participants had more to say about activities they felt they were 'bad' at, compared to those they felt they were 'good' at. During a 3rd-grade focus group, Baller was asked what activities he does not like to so and he said, "Hockey because I can't even skate." When asked how that makes him feel he responded, "[Bored] Because I really don't know how to play good." Another example is from a 2nd-grade focus group from Supergirl who described why he did not like certain activities;

> Um, soccer, um, because and cross-country. I don't really like soccer because I can't really run fast and I can't really like kick the ball like that hard and some people like keep

like guarding me and it's like just like really hard to like do it. And I don't really like cross country because I'm kind of slow.

It was clear that these participants know what they are 'good' at and what they are 'bad' at. The participants were asked how they would feel about the activities they do not like to do if they were 'good' at them. Practically all participants stated they would enjoy the activities they were 'bad' at if they were better at them. One example from OtherFlash, who found golf boring, said, "No. I think that, um… that um… it would probably be fun." Another example was said by Supergirl who said, "I think yeah because I because if I was better at kicking and running, um, I would like to play soccer and I would do the cross-country fast class."

Theme 4. Characteristics of Physical Activity (Sports)

The characteristics of physical activities influenced the participants' enjoyment in an activity. Participants discussed how certain features of physical activity contributed to the enjoyment or unenjoyment of physical activities. Characteristics of a physical activity include features unique to a specific activity such as the speed or flow, specific rules, people involved, etc. There were four subthemes that included 1) roughness and danger, 2) movement and action, 3) teammates and competition, and 4) rules.

Subtheme: Roughness and Danger

Many of the participants shared positive and negative connotations towards the roughness and danger aspects of physical activities (or sports). Roughness is a term used to describe the physical aspects of a sport such as wrestling or tackling in football. Roughness was seen as an aspect that some participants enjoyed, and some did not enjoy. Many of the male participants

talked about how they enjoyed the 'roughness' or 'physical parts' of sports they enjoyed. Brock Lessner, when asked what he likes about sports, said, "They are fun, and I like to be rough, so especially football." Similarly, Flash5 said, "I like hockey cuz it's kind of like, it's rough like football." All three female participants reported disliking the roughness in certain sports.

Danger is a term used to describe the characteristic of a sport that the children felt they might get injured such as tearing an ACL or getting hit in the face. Danger was a characteristic that all the participants did not enjoy. Interestingly, in a 2nd-grade focus group, there was a discussion of the danger of injury from certain sports. Two different participants (Ava and Baller), brought up getting injured in basketball and soccer. Ava mentioned, "I don't like, about basketball, I just think it's kind of dangerous to me." When asked how, she responded, "Because I like feel like I'm going to get hit in the nose or something." In a separate conversation, Baller brought up he did not like soccer and when asked why he said, "[I don't like] Soccer, you get kicked. You could get kicked in the face." Ava responded to Baller saying, "Soccer is a dangerous sport cuz one of my friends broke her finger and her arm." During this conversation Flash5 mentioned, "If it's something, I like football cuz like you have so many pads and it's hard to get hurt."

Subtheme: Movement and Action

Many of the focus group sessions included discussions about movement, action, and energy levels associated with physical activities and sports. These aspects were determining factors whether a participant enjoyed or did not enjoy an activity. Kinesthetic and tactile sensations derived from specific movements and actions within an activity led to enjoyment or

lack of enjoyment. Baseballman discussed why he does not enjoy soccer and why he enjoys baseball and compares the two;

> Umm, right now, like it doesn't really make me feel very energetic. It's like, not very fun to me, it's just because I like to, I don't know, like, I know soccer is running but I like, like in baseball especially I like sliding into bases and stuff. So, umm, I just don-, don, it's not really fun to me when I play sports and it's not interesting to me.

Other participants simply stated they like movement involved in the activity such as Spikey, who talked about tennis and said, "I like the movement to hit the ball." These quotes illustrate the movement sensations they enjoy from the activities. A different example came from Unicorns, who said, "What I like about it [physical activities] is that it is very calming." When asked to explain more she said, "Yeah when I'm outside, like when I'm playing with the sand we have. And like when like…but when I'm, like normally I'm when I'm riding my brother's scooter the wind just hits my face."

Subtheme: Teammates and Competition

Another characteristic of physical activity that was talked about was teammates and competition. While there is a main theme of social influence, when analyzing the data, it was different in the fact that the participants talked about teammates and competition in a way that eluded to a characteristic of an activity they enjoyed; therefore, these factors encompassed a subtheme in characteristics of physical activities and sport. One example is shown from Batman, who said, "Well, hide-and-go-seek and tag are fun because you get to play with your friends. And soccer is fun because you get to um, you get to work with your teammates." From a different focus group, two participants mentioned how they like competition in the physical

activities they enjoy doing. Spikey said, “Um, I like, I like the competition in basketball and soccer.” Flash5 stated, “Yeah. Um, I like the competition and being active, like I get to be active a lot and not be bored in the house.”

Subtheme: Rules

Some participants stated their lack of enjoyment was simply the rules of the activity. There were no discussions on rules that alluded to activities they enjoyed, just discussions that led to lack of enjoyment. An example is from Dwayne Johnson, who said,

> This is what I don’t like about soccer [as he pounds his hands on the table]. You can’t touch the ball with your hands, and you can’t catch the ball and feet are soo horrible. Feet are so horrible for sports. This is why baseball is better cuz in baseball you can use all your hands, but in soccer you can’t.

Strongman also talked about why he does not like the rules in soccer but for different reasons;

> Cuz soccer, the only reason why I don’t like soccer is because there’s all those yellow cards and, tha-tha-that doesn’t make sense but like, slide tackles, that’s dumb. I just don’t like that. And you can’t really often even touch somebody, if you touch somebody it’s a yellow card, basically to me. That’s what it feels like. And, I mean I’ll, I like it because, it was ju-, it just should have more, a little bit more physical stuff in there.

Interaction between Themes

Participant discussions seemed to overlap among themes. A schematic of the interactions is shown in Figure 4-2. The following sections illustrate these interactions with participant quotes.

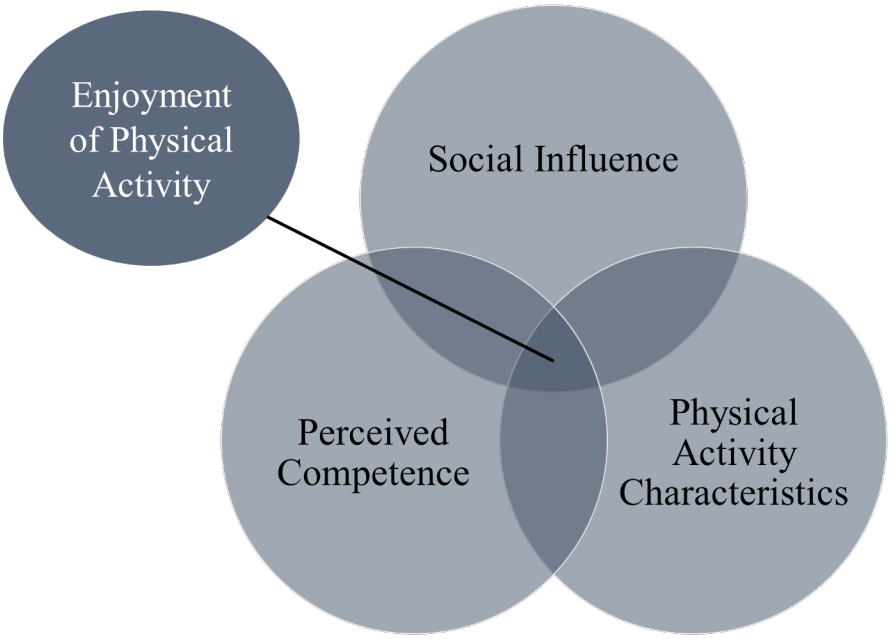


Figure 4-2 Schematic of Theme Interactions and Enjoyment

Social Influence and Perceived Competence

Some participants discussed how a social influence made them 'good' at an activity they enjoyed. One example came from OtherFlash, who said,

> Like, I grew up in track, like, I saw my sister run when I was a baby like when I was about 2 or 3 or 4. Um, I was watching her doing, ah, going to track practice and track meets, yeah that's how I'm fast.

Other participants talked about how social influences made them scared or embarrassed in activities they did not enjoy. Supergirl talked about how people not watching him made him embarrassed in cross country;

> Um, and cross country makes me, um, kind of scared because or embarrassed because I'd be embarrassed if I was like, like behind all the other people, you know I feel embarrassed because I feel like people aren't watching me.

Social Influence and Physical Activity Characteristics

Participants discussed social influence on physical activity (sport) characteristics in activities they did enjoy. One example from a 3rd-grade focus group involved Flash5 and how his mom does not let him participate in activities that are rough. Flash5 talked about his mom picking soccer for him to play. He said, "I'm only allowed to play three sports at a time, so I play… um… so she wanted me to do soccer instead of football cuz that's how moms are." When asked what 'that's how moms are?' he said, "They don't let, my mom just doesn't let me do rough, rougher things."

Perceived Competence and Physical Activity Characteristics

Perceived competence seemed to overlap with physical activity characteristics. Some of the participants discussed how letting their teammates down by losing a game. One example in a 2nd-grade focus group came from Supergirl, who said,

> Well, basketball kind of makes me feel scared because like whenever I'm in games I'm scared if I win or lose, because in the last game if you win, if you won, you got the trophy. But I'm scared I'll let down my teammates.

Other participants stated why they did not like a certain activity based on the physical activity characteristics and that was why they did not like that activity. One example was stated by Strongman, who said,

> It's not very fun without contact. I mean indoor stuff, like tennis is okay I don't, it's, it's not bad, bad. But I mean, I would, I mean I like it but, um, I don't really like it cuz it doesn't have any contact, tennis, and the thing that you swing with. And, I don't really like them because, it makes, it makes me feel bad cuz it feels, soccer makes me feel bad because I'm not very good at soccer and you don't get the contact people and contacting is my thing like hitting people is my thing.

Social Influence, Perceived Competence, and Physical Activity Characteristics

In a few instances, social influence, perceived competence, and physical activity characteristics overlapped. One participant, Flamethrower, described how basketball made him feel. He said, "So, in basketball sometimes, it's just, I like to use my hands, and when I shoot, like one-handed, I'm really good at it, and it just feels good." When asked what he meant by 'it just feels good' he said, "It feels good that I'm scoring points and my parents are watching me do good."

Discussion

Using a convergent parallel mixed methods design, this study explored children's enjoyment, a determinant of motivation, for physical activity through focus group questions asking what the participants like and dislike about activities they enjoy and do not enjoy. This study provides an important contribution to the literature and is one of the few studies that have explored motivation, physical activity, and perceived motor competency in a mixed method design in young children (ages 6-8 years). The following section first discusses the quantitative results then provides discussion regarding the qualitative themes and subthemes: 1) sport is

physical activity, 2) social influence (peers, parents, siblings, teacher, coach, and gender norms), 3) perceived competence, and 4) physical activity characteristics (roughness and danger, movements and action, teammates and competition, and rules). The discussion merges both quantitative and qualitative data to help better understand the results.

Physical Activity and Perceived Motor Competence

In our sample, 57% of the children were meeting physical activity recommendations. This is higher than national average of 42% for children aged 6-11 years (Troiano et al., 2008). Additionally, there were no differences in perceived motor competency scores between focus groups or school site and all the scores were relatively high (average 3.0/4). In the literature, young children (7 years old and younger) tend to exaggerate their perceived motor competence (Harter & Pike, 1984; Nicholls, 1978; Nicholls & Miller, 1983). They equate effort to their ability. The participants in the current study were at an age where their higher cognitive functions are developing, and it is uncertain where each participant was in terms of cognitive development. While some of the participants scored as low as 2, some scored a 4 (highest possible score) on the perceived motor competency scale. However, there is a link between high perceived competency and higher physical activity levels in this age group (6-12 years) (Fisher et al., 2005), but we did not see this association in the current study. Testing actual motor competency may be more help understand this relationship in this age group.

Physical Activity is Sport

The qualitative data in the present study revealed that the sample of children did not differentiate physical activity from sport. This suggests that to these children, sport is physical activity. They are one in the same. The definition of physical activity is ‘any bodily movement

produces by skeletal muscles that results in energy expenditure' (Caspersen, Powell, & Christenson, 1985). Everyone performs physical activity in order to sustain life, but the amount is a personal choice and varies from person to person (Caspersen et al., 1985). Physical activity can be categorized into occupation, leisure, conditioning, sports, and household chores (Caspersen et al., 1985). The children seem to recognize only a narrow view of the definition of physical activity to the categories of just sport and leisure. One study conducted by Trost and colleagues (2000), examined fourth-grade students' understanding of the concept of physical activity and concluded that children have a limited understanding of what physical activity is (Trost et al., 2000). Specifically, misinterpretation of common household physical chores (such as sweeping, vacuuming, etc.) as sedentary activities and working on a computer as a physical activity (Trost et al., 2000). The participants in this study were not provided a definition of physical activity and it was left up to the children to interpret what physical activity was. The focus group data suggest that the children equate sport to physical activity.

Social Influence-Peers

Previous research has illustrated strong links between enjoyment and motivation for physical activity and social influence (Sallis et al., 2000; Wang, 2017; Weiss, 2000; Welk, Wood, & Morss, 2003). The qualitative data suggests that children tend to participate in similar activities as their close friends (Weiss, Smith, & Theeboom, 1996). This is reflected in the quantitative results as those that identified each other as friends had similar moderate to vigorous physical activity levels, for example, Brock Lessner and Renaldo participated in almost the same amount of activity (75.4 min/day, 72.7 min/day, respectively). Children have a need for social acceptance or connectedness from their peers to fulfill the basic psychological need,

'relatedness,' from Self-Determination Theory (Deci & Ryan, 2008; Ryan & Deci, 2000a; Ryan Deci, 2000b). Not fulfilling relatedness brings a sense of feeling 'left out' of their peer groups and may lead to less enjoyment and motivation to participate in physical activity, thus decreasing physical activity levels (Fraser-Thomas, Côté, & Deakin, 2005). The feeling of being 'left out' by peers was expressed by some of the focus group participants.

Social Influence-Parents and Siblings

Other social influences that participants discussed included parents and siblings. Many studies have examined the role family plays in enjoyment, motivation, and physical activity (Barnett, 2008). Previous studies show that children with more co-participation in physical activities with siblings and parents tend to have greater enjoyment and motivation for physical activities (Blazo & Smith, 2018; Edwardson & Gorely, 2010). Co-participation in physical activities has been shown in previous studies to have a large influence on child physical activity participation (Cislak, Safron, Pratt, Gaspar, & Luszczynska, 2012; Lee et al., 2010). The current study is consistent with others that show children enjoy participating in activities with their parents and siblings (Blazo & Smith, 2018; Cislak et al., 2012; Lee et al., 2010). Additionally, parental support for their children's physical activities has been shown in the literature to be a predicting factor for physical activity motivation (Weiss, 2000). Parental support is important to provide opportunities for physical activity. Providing physical activity opportunities will offer an array of choices for children to try and find an activity they enjoy engaging in. Parental support for new physical activity choices is directly linked to autonomy from Self-Determination Theory (Ryan & Deci, 2000b). Studies have shown that when parents create an environment where children can make their own choices on physical activity, children are more likely to enjoy and

be motivated to engage in those activities (McDavid et al., 2012; Rutten, Boen, & Seghers, 2013). Similarly, in the present study, many of the participants said their parents allowed them to choose the activities they were involved in.

In terms of siblings, this study is consistent with previous research that has shown that siblings have an impact on physical activity choice (Blazo & Smith, 2018; Edwards et al., 2015). It appeared that children with older siblings and those with younger siblings had different discussions on how they influenced their physical activity enjoyment and participation. Those participants with younger siblings seemed to discuss how they included their younger sibling in non-sport physical activities they enjoyed. Those with older siblings talked about how they influenced them participating in sports both engagement and disengagement. Previous research has shown older sibling involvement in sport heightens engagement of younger siblings (Blazo & Smith, 2018). These findings are consistent with previous research on older and younger sibling physical activity influence (Blazo & Smith, 2018; Loucaides, Plotnikoff, & Bercovitz, 2007; Sallis et al., 2000). However, research has shown that siblings can provide sources of jealousy and rivalry in sport and physical activity experiences (Blazo & Smith, 2018). This was not found in the current study, which may be due to the young age of the participants (Nicholls, 1978). According to Achievement Goal Theory, the orientation (mastery or performance) determines how children view sport and physical activity outcomes, and younger children (less than 8 years), do not have the cognitive development to foster performance orientations (Nicholls, 1978). Therefore, the young age of the participants may not foster the feeling of competition between their siblings.

Social Influence-Gender Norms

Gender norms was a subtheme that emerged from two of the four focus groups. Interestingly, of the two instances the term 'girly sport' came up, it was discussed in two focus groups that contained a female. The sex make-up of the focus group might have played a role in diminishing the voices of the female participants, especially in these instances. Many of the participants were friends and conforming to the 'social norms' of the group was easy to do, especially when the majority of the group agreed, and it is tough for children in this age group to speak against the norm to share their opinion on a topic this complex. This finding of gender norms is consistent with previous research as there has been findings of gender norms in sport being present as early as 5 years of age (Blakemore, 2003; Cherney & London, 2006). Additionally, these gender norms become more prominent as children get older into late childhood and adolescence (Blakemore, 2003; Cherney & London, 2006).

Perceived Competence

Previous studies have shown that the higher level of perceived motor competence a child has, the greater their enjoyment is as compared to youth who reported lower levels of motor competence (Weiss et al., 1996). In the present study, many of the participants had a higher than average perceived competency (>2.0). The participants past accomplishments were only discussed in activities that they enjoyed. Past failures were only described in activities the participants did not like to do. Renaldo's perceived motor competency score (PMC: 3.2) and quote about riding his bike without training wheels is an internal source of perceived competence, which involves self-referencing past performances, effort, and achieving personal goals (Weiss, 2000). Baseballman's (PMC: 3.6) quote about winning his football championship

and getting the game winning interception is an example of an outcome source of perceived competence, which includes external rewards (i.e. trophies, awards) and event outcomes (i.e. winning, losing) (Weiss, 2000). Past accomplishments build the confidence in those physical activity movements, driving the enjoyment and motivation to participate in that physical activity (Butler & Elliot, 2005; Klint & Weiss, 1987; Roberts, Kleiber, & Duda, 1981) Many of the participants associated their enjoyment in an activity with them being 'good' or 'bad' at an activity. Past accomplishments or failures construct one's perceived capability, which both create their perceived competence (Butler & Elliot, 2005; Klint & Weiss, 1987; Weiss, Ebbeck, & Horn, 1997). Competence is one of the three basic psychological needs from Self-Determination Theory (Ryan & Deci, 2000b). Fulfilling this basic psychological need brings greater confidence in an activity, which brings more enjoyment and motivation to participate (Ryan & Deci, 2000b). These perceptions of 'good' or 'bad' were likely shaped from past accomplishments or failures (Woods et al., 2007).

The perception of how 'good' someone is at an activity has been shown to have an influence on enjoyment. In many youth sport studies of varying ages, those athletes who had a greater perception of their capabilities reported greater enjoyment than those with lower perceived capabilities (Raudsepp & Liblik, 2002; Roberts et al., 1981; Weiss et al., 1997). These responses indicate that youth of this age relate enjoyment to being 'good' at an activity. Previous research has shown that younger children (aged 5-9 years) tend to use mastery of tasks, effort, and feedback from parents to judge their physical capabilities (Weiss, 2000). While the present study showed that mastery of tasks and effort was used to judge their capabilities, feedback from parents did not come up in the focus groups. According to Achievement Goal Theory, children

under 11 years equate effort with perceived competence and enjoyment. This is due to a lack of development of higher cognitive structures that identify other factors that contribute to competence such a talent (Nicholls, 1978). However, in the present study, the participants did not equate just effort with competence in an activity. The participants equated competence with past accomplishments and failures, which may have influenced their perception of their capabilities in an activity. The participants knew what physical activities they were 'good' at and 'bad' at, even at this young of age.

Physical Activity Characteristics

Physical activity characteristics also was discussed on the participants' enjoyment or unenjoyment of physical activities and sport. Roughness was a characteristic that was found to be popular among the males but not with the female participants. This is consistent with previous studies that examined contact sports in schools and found that males enjoyed contact sports more than females (Gard & Meyenn, 2000). However, there was a unanimous agreement with all the focus group members that dangerous activities were unenjoyable. Previous research has shown that sport participation declines as the fear of injury increases (Short, Reuter, Brandt, Short, & Kontos, 2004). The discussions that arose from the movement and action subtheme hinted at intrinsic motivation from Self-Determination Theory. The participants described how they like the sensations from the activities they enjoyed, which may be indicative of pure enjoyment of the activity itself, which is intrinsic motivation (Ryan & Deci, 2000a). The participants also discussed how they enjoyed playing with their teammates and competition. There is a strong desire to form interpersonal connection and attachments, which is part of human nature (Allen, 2003; McCarthy & Jones, 2007). Physical activity and sport provide these opportunities for

children to form these connections, which is representative of relatedness (Allen, 2003). Competition was not mentioned as being a reason for why the participants did not enjoy an activity. This is not consistent with previous research that older children (aged 10 and up) showed less enjoyment with sport with more competition or rivalry (McCarthy & Jones, 2007). According to Achievement Goal Theory, orientations (mastery and performance) towards an activity focus on different outcomes (Elliot & McGregor, 2001). Mastery oriented individuals focus on learning and improvement, while performance-oriented individuals focus on outperforming others (Elliot & McGregor, 2001). According to Achievement Goal Theory research, younger children (less than 8 years), do not have the cognitive development to foster performance orientations (Cumming et. al., 2008). From the discussions in the current study it appears that competition provided positive feelings towards physical activity resulting in enjoyment and enhanced motivation for engagement, which is consistent with previous Achievement Goal Theory research (Cumming et. al., 2008). Furthermore, the rules of an activity or sport led to some participants to not enjoy it. Examining previous research, there are not many studies about enjoyment being related to specific rules in a sport or physical activity. However, this may relate back to competence (actual or perceived) from Self-Determination Theory (Ryan & Deci, 2000b). These responses may have been implying the participants' mastery or lack thereof in soccer. In the example with Dwayne, he may have not the perceived competence of using his feet to play up the level of his peers. In the other example, Strongman may not understand the rules in soccer and gets frustrated, leading to 'yellow cards' he talked about. However, despite these inferences, rules of an activity play a role in the enjoyment of them.

Interaction among Themes

The overlapping of themes suggest that each theme may have influence on one another. In Self-Determination Theory, the three basic psychological needs (competence, autonomy and relatedness) have a reciprocal relationship (Ryan & Deci, 2000b). Examining the literature, perceived competence can be impacted by the social environment (Fisher et al., 2005; Mandigo et al., 2008; Stuntz & Weiss, 2010). This was shown in the example from Supergirl (PMC: 2.8) who felt embarrassed that people were not watching him in cross country. The participants' autonomy seemed to be mostly determined by their parents. This is consistent with previous research that shows parents are the primary figure that control how much autonomy their child has (Clark & Ladd, 2000; Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987). This was also shown in the example from Baseballman, who stated his mom does not let him play the rougher sports. Parents seem to control how much autonomy they give their children and this decision is influenced by the parents' view of their child's competence in an activity (Clark & Ladd, 2000; Kuczynski et al., 1987) and the characteristics of a physical activity (Darling, 1999; Darling & Steinberg, 1993). Certain characteristics of physical activity attract children to them, which may stem from their perceived competence towards that characteristic. For example, if a child's perception is that they are good a kicking a ball, they may be more inclined to participate in soccer. How these themes relate to each other suggest that enjoyment and motivation towards physical activity and sport is complex.

Conclusions, Limitations, Future Directions, and Implications

Conclusions

The primary aim of the study was to explore why children enjoy or do not enjoy physical activities to gather insight into their underlying motivation. Additionally, physical activity and perceived motor competence data were collected to help better understand the focus group data. The focus groups revealed four-overarching themes including: 1) physical activity is sport, 2) social influence, 3) perceived competence, and 4) physical activity characteristics. Interestingly, it seemed that social influence, perceived competence, and physical activity characteristics overlapped, suggesting all three have a reciprocal interaction that may relate to the enjoyment or unenjoyment of physical activities. The mixed methods approach allowed the children to share which activities the children enjoyed and did not enjoy, in addition to determining the children's physical activity levels and their perception of motor competence. This approach used quantitative data to help explain and interpret the qualitative data.

There seemingly was a social component that every focus group participant shared about physical activity enjoyment and unenjoyment. Furthermore, peers and friendship were a large topic of conversation amongst the focus groups, which shows how influential friends are. Children tend to participate in similar activities as their friends, which was reflected in the qualitative and physical activity data. Additionally, gender norms, through the term 'girly sports', were revealed in both a 2nd and 3rd grade focus group. This was a very unexpected finding but shows that this sample of children (as young as seven years) have the engrained view of gender norms in physical activity and sport.

Perceived motor competence data demonstrated that children use their past experiences to judge their capabilities. Even though the participants had higher than average perceived motor competency scores, the focus group members already knew what they are 'good' and 'bad' at. Participants at this young age have already gathered a perception of their competence that shaped what activities they chose to engage in. There is link between perceived motor competency and actual motor competency. Exposing young children to activities that focus on fundamental skills that may help to develop and refine those skills may bring more confidence in those movements. This may translate to higher perceived competence and greater engagement in an array of activities and attenuate to limiting their perceived competence.

It was interesting to find that participants enjoyed or did not enjoy certain activities because the characteristics the activity has. However, the underlying reason for liking or disliking certain characteristics may stem from perceived competence or social aspects. For example, Brock Lessner (PMC: 4.0) identified himself as a 'good' baseball player, while Baller (PMC: 2.0) identified himself 'bad' at hockey. Children who perceive themselves as being 'bad' at a physical activity may not participate due to feelings of embarrassment from their peers.

Limitations and Future Directions

There are some limitations to this study. One is the YMCA afterschool program where the study was conducted. The YMCA program offers a variety of physical activities that are primarily sport based. Due to the nature of this program, it may have influenced the participants' understanding of the term 'physical activity'. The study intended to gather general physical activities but rather the children mostly discussed sport contexts. Additionally, the physical activity offerings from the YMCA program may have elevated the levels of physical activity of

the children as they were above the national average. Additionally, the make-up (sex and number) of the focus groups was a limitation. The focus groups consisted primarily of males, with one group being composed solely of males. This may imply that the findings are more the male perspective on why they enjoy or do not enjoy physical activities. The PI did his best to bring the female voices to the forefront to not be overshadowed by the males. Additionally, the two 1st grade focus groups were not included in the analysis due to only having two participants in each. Including younger participants might have brought different emerging themes.

Overall, future research should include focus groups in children with more female participants in addition to more groups and the inclusion of children of younger ages. It seemed these children had already adapted to social norms and had a perception of themselves and asking these questions to children younger may lead to different outcomes. Furthermore, it may be beneficial to conduct interviews with parents of the participants to gather more data on their views with what their children tend to enjoy or not enjoy. These future directions will help lay the base for future intervention designs for young children to be motivated in physical activities for life-long participation.

Implications

Several implications about children's enjoyment and motivation for physical activity can be inferred from the current study. First, children less than ten years old equate physical activity to sport. Providing a definition of what physical activity encompasses may help children understand what physical activity is (Trost et al., 2000). Second, getting young children involved in many different physical activities and sports can help develop motor competency and thus perceived motor competency. Helping build competence early can create positive and enjoyable

experiences that will help shape a child's view of physical activity to bring life-long habits (Trost et al., 2000). Involvement in activity early on in life may help children develop friendships and connections to foster their relatedness. This is important as children tend to mimic the activities as their close friends and developing those relationships through physical activity can help promote highly active children (Trost et al., 2000). Third, parents should be involved in their children's physical activity through co-participation and providing support for activity. Parents control how much autonomy they provide their children in their physical activity choices (Darling, 1999), so it is important they provide autonomy in their children's choices. Lastly, future inventions and physical activity programs for young children should incorporate family and peers to provide an autonomy supportive environment to foster competence, relatedness, and autonomy to promote enjoyment and motivation for physical activities.

CHAPTER FIVE
CONCLUSIONS

The primary aim of the study was to explore why children enjoy or do not enjoy physical activities to gather their underlying motivation. Additionally, physical activity and perceived motor competency data were collected to help better understand the focus group data. The focus groups have revealed four-overarching themes including 1) physical activity is sport, 2) social influence, 3) perceived competence, and 4) physical activity characteristics. Interestingly, it seemed that social influence, perceived competence, and physical activity characteristics had overlap on one another, suggesting perhaps all three have a reciprocal interaction that may relate to the enjoyment or unenjoyment of physical activities.

There seemingly was a social component that every focus group participant shared about physical activity enjoyment and unenjoyment, which shows how social humans are, even at a young age. Furthermore, peers and friendship were a large topic of conversation amongst the focus groups, which shows how influential friends are. Children tend to participate in similar activities as their friends, which was reflected in the qualitative and physical activity data. Additionally, gender norms, through the term 'girly sports', were revealed in both a 2nd and 3rd grade focus group. This was a very unexpected finding but shows that children as young as seven have the engrained view of gender norms in physical activity and sport.

Perceived competence in physical activities demonstrated that children use their past experiences to judge their capabilities. Even though the participants had higher than average perceived motor competency scores, the focus group members already knew what they are 'good' and 'bad' at. Participants at this young age have already gathered a perception of their competence that shaped what activities they chose to engage in. Exposing young children to

activities that focus on fundamental skills may help to develop and refine those skills to bring more confidence in those movements. This may translate to higher perceived competence and greater engagement in an array of activities and attenuate to limiting their perceived competence.

It was interesting to find that participants enjoyed or did not enjoy certain activities because the characteristics the activity has. However, the underlying reason for liking or disliking certain characteristics may stem from perceived competence or social aspects. For example, children who perceive themselves as being 'bad' at a physical activity may not participate due to feelings of embarrassment from their peers.

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APPENDICES

Appendix A: Parent Letter/Consent

Information Letter for Parents

THE UNIVERSITY of TENNESSEE
KNOXVILLE
COLLEGE of EDUCATION, HEALTH, & HUMAN SCIENCES

December 5th, 2018

Dear Parent,

The purpose of this letter is to invite you to permit your child to participate in a research study entitled: Children's Motivation for Physical Activity. This study will be open to all children aged 6-9 years old enrolled the YMCA after school program at Knox County Elementary Schools. The specific details of the study are provided in the attached consent form. This study is being conducted by Tyler Kybartas, a Ph.D candidate in the Department of Kinesiology, Recreation, and Sport Studies and Dr. Dawn Coe, Ph.D., a pediatric exercise physiologist from the Department of Kinesiology, Recreation, and Sport Studies. Please contact Tyler Kybartas with any questions concerning this study (phone: 865-974-5091, email: tkybarta@vols.utk.edu).
Thank you for your consideration.

Regards,



Tyler Kybartas, M.S.



Dawn Coe, Ph.D

Permission for Child to Take Part in a Research Study
Children's Motivation for Physical Activity

Principal Investigators: Tyler J. Kybartas, M.S.
Dawn P. Coe, Ph.D.

Your permission is requested for your child to take part in a research study. This consent form explains the purpose and requirements, of the study. Please read this form carefully. You will be given a chance to ask questions. If you decide to permit your child to be in the study, you will be given a copy of this form. If you do not permit your child to take part in the study, it will not affect your child's rights to care or services. If you do permit you child to take part, you are also free to remove your child from this study at any time without penalty.

Why is this study being done?
The primary objective of this study is to explore children's experiences and opinions about physical activity. Additionally, we are interested in the physical activity levels of children.

Who is eligible to participate?
The study subjects will be children currently in grades 1 – 3 (range of 6 – 9 years of age), who do not have any physical or cognitive condition that would limit their ability to participate in a focus group or physical activity and who do not currently participate in an organized sports team.

Criteria for participating in organized sport includes current involvement in structured activity/sport that is facilitated by a coach three or more times per week.

How long will the study last?
The study will be a total of 60 minutes and will require one (1) focus group session. Additionally, an accelerometer will be asked to be worn by your child for seven (7) consecutive days.

How many people will be in the study?
Approximately 50 children will participate in this study, but only 4-5 children will be in the same focus group with your child.

What will happen to me during the study?
During this study your child will be asked to participate in a focus group at the YMCA afterschool program, which will last approximately 60 minutes. You will be asked to sign a permission form and complete a health history questionnaire. Health and demographic information will be collected as part of the health history questionnaire. Your child will provide verbal assent or agreement to participate. Your child's height and weight will be measured.

At the afterschool program, your child will participate in a focus group that will contain approximately 6 total children of similar age. The focus group will be moderated by the lead principal investigator (Tyler Kybartas) and assisted by an undergraduate research assistant. Questions about past physical activity experiences and opinions will be asked. The focus group session will be audio recorded for future transcription and analysis. However, your child's identify will be kept a secret through the use of a pseudonym. Following the focus group session, your child will be fitted with an accelerometer elastic belt that will be worn around the waist. We ask that your child wear the device for seven (7) consecutive days excluding water activities and sleep. Following seven days, we will ask that you return the accelerometer to the YMCA afterschool program.

Will anyone know my child is in the study and how is my child's identity being protected?
A record of your child's participation in the study will be kept private and all data will be kept in a confidential file in a locked cabinet in a locked University of Tennessee faculty office for 3 years following completion of the study. After that, your child's data will be destroyed. Only the co-investigators will have access to your child's data. Study results may be prepared for presentation at professional meetings and for publication in journals. However, none of your child's personal information will be revealed. Therefore, your child's identity will be protected. Each child will choose a pseudonym; therefore, no reference will be made in oral or written reports which could link participants to the study. We will also ask the participants to not talk about anyone else's answers to any of the question in the focus group session.

What risks can I expect from being in the study?
Risks associated with this study are very minimal. The focus group may cause some uncomfortable feelings or sensitive issues to arise. Your child may refuse to answer any question that is asked. Additionally, the elastic belt may cause some discomfort. The researcher will show the child and parent how to adjust the belt to reduce discomfort if it should occur. Also, instructions on how to adjust the accelerometer will be provided. You can call the researchers at 865-974-5091 or email at tkybarta@vols.utk.edu if any issues arise with the accelerometers.

Are there benefits to taking part in the study?
There is no direct benefit to the children in this study. These findings can potentially be used to identify what motivated children to be active or not and to examine the physical activity levels across different grade levels. Findings of this study assist in the design of interventions promoting PA in children.

What happens if my child gets hurt?
In the event that your child becomes injured as a result of participating in this study, immediate treatment will be available (First Aid and/or CPR). It is important that you tell the researcher, Tyler Kybartas, if you feel that your child has been injured in this study. You can tell the researcher in person or call him at 865-974-5091.

Who do I call if I have questions about the study?
Questions about the study should be directed to Tyler Kybartas: 865-974-5091 (Phone #), tkybarta@vols.utk.edu (E-mail) and if needed, a meeting can be set up. Tyler Kybartas is always available and happy to answer all questions. Questions about your child's rights as a research participant should be directed to the University of Tennessee, Knoxville, Office of Research Compliance at 865-974-7697.

What if my child does not want to be in the study?
Your child's participation in this study is voluntary. Your child's decision whether or not to participate in this study will not affect your child's current or future relations with the researchers or the University of Tennessee. If your child decides to participate, your child is free to withdraw at any time without affecting those relationships.

PERMISSION OF PARENT OR GUARDIAN:
I have read or have had read to me the description of the research study. The investigator or her representative has explained the study to me and has answered all of the questions I have at this time. I have

been told of the potential risks, discomforts and side effects as well as the possible benefits (if any) of the study. I freely permit my child to take part in this study.

_____
Child's Printed Name

_____	_____	_____
Printed Name of Parent/Guardian	Signature of Parent/Guardian	Date

_____	_____	_____
Printed name of Investigator	Signature of Investigator	Date

Appendix B: Assent

ASSENT TO PARTICIPATE IN RESEARCH

Identification with Physical Activity Motivational Constructs in Children

1. My name is Tyler Kybartas and I'm a student at the University of Tennessee.

2. We are asking you to take part in a research study because we are trying to learn more about children's physical activity behaviors and children's thoughts about physical activity.

3. If you agree to be in this study we will first take your height and weight. Then you will take place in a focus group, which is just myself asking you and a group of other children questions about physical activity. Finally, you will wear an accelerometer belt for seven (7) days. An accelerometer measures physical activity so I will know how much activity you did for a week.

4. There are not very many risk if you are part of this study. You don't have to answer any questions you do not want to. Also, wearing the belt for a week may be uncomfortable but I will show you and your parents how to make the belt comfortable.

5. Please talk this over with your parents before you decide whether or not to participate. We will also ask your parents to give their permission for you to take part in this study. But even if your parents say "yes" you can still decide not to do this.

6. If you don't want to be in this study, you don't have to participate. Remember, being in this study is up to you and no one will be upset if you don't want to participate or even if you change your mind later and want to stop.

7. You can ask any questions that you have about the study. If you have a question later that you didn't think of now, you can call me 865-974-5091.

8. Signing your name at the bottom means that you agree to be in this study. You and your parents will be given a copy of this form after you have signed it.

_____	_____	_____
Printed Name of Participant	Signature of Participant	Date
_____	_____	_____
Printed name of Investigator	Signature of Investigator	Date

Appendix C: Health History Form

HEALTH HISTORY QUESTIONNAIRE

Today's Date: _____

Name of parent/legal guardian completing the form:_____

ABOUT THE PARTICIPANT
Please answer the following questions about your child.

Name: _____

Parent's Phone: _____ Date of Birth (month/day/year): _____

Age: _____ Gender: ___ M ___ F

Current School: _____

Current Grade: _____

How do you identify your child?
_____Asian, Non-Hispanic
_____Asian, Hispanic
_____Black/African American, Non-Hispanic
_____Black/African American, Hispanic
_____Native Hawaiian/Pacific Islander, Non-Hispanic
_____Native Hawaiian/Pacific Islander, Hispanic
_____Native American/Alaskan, Non-Hispanic
_____Native American/Alaskan, Hispanic
_____White, Non-Hispanic
_____White, Hispanic

Is this child Multiracial? _____Y _____N

Who resides in the household with your child?
____Both parents_____Single Mother___Single Father_____Grandparent(s) ___Other

Is your child eligible to receive free or reduced lunch at school?Y _____N

Please Turn Over

Health History
Has your child ever been diagnosed with any of the follow conditions? If yes, please explain.

	NO	YES	Current Condition	Explanation
Heart Disease				
Diabetes/High Blood Sugar				
High Blood Pressure				
Seizure				
Asthma or Other Lung Condition				
Cancer				
Musculoskeletal Condition or Injury				
Other Serious Illness				
Allergy				

Please describe any additional medical conditions that may affect your child's participation in physical activity.

_____

Is your child taking any medication (including prescription and non-prescription? If yes, please state below. YES _____ NO _____

Name of Medication Reason for Taking For How Long?

_____

_____

_____

Emergency Contact

Name: _____

Relationship: _____ Phone: Work: _____

Home: _____

Appendix D: Perceived Motor Competency Assessment

Perceived Motor Competence Scale for Children

- This survey is voluntary and all of your information will be kept confidential (secret).

What I Am Like

Name_____ Age____ Birthday _____ ☐ Boy ☐ Girl
Month Day (check one)

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
			Sample Sentence				
a.	☐	☐	Some kids would rather play outdoors in their spare time	**BUT**	Other kids would rather watch T.V.	☐	☐
1.	☐	☐	Some kids do very well at all kinds of sports	**BUT**	Other kids don't feel that they are very good when it comes to sports	☐	☐
2.	☐	☐	Some kids wish they could be a lot better at sports	**BUT**	Other kids feel they are good enough at sports	☐	☐
3.	☐	☐	Some kids think they could do well at just about any new sports activity they haven't tried before	**BUT**	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐
4.	☐	☐	Some kids feel that they are better than others their age at sports	**BUT**	Other kids don't feel they can play as well	☐	☐
5.	☐	☐	In games and sports some kids usually watch instead of play	**BUT**	Other kids usually play rather than just watch	☐	☐

Appendix E: Focus Group Session Breakdown

Grade (Age in years)	**1st Grade (6-7 y)**	**2nd Grade (7-8 y)**	**3rd Grade (8-9 y)**
Number of Participants (Site 1)	2	3	3
Number of Participants (Site 2)	2	5	5
Total Number of Participants	4	8	8

Appendix F: Ground Rules

Ground Rules

1. Golden Rule: treat others as you would like to be treated→ Respect each other and let everyone talk.
2. Only one person is allowed to talk at one time.
3. Everyone is to remain seated unless asked to participate in an activity.
4. It is okay if you don't agree with someone else, I want to hear about that, but please still be respectful.
5. Do not discuss what is said by others after the session ends.

Appendix G: Main Questions/Card Game

Main questions/Card game

Card game. There is a deck of cards that the kids will take turns picking the top cards. Example of question is listed below:

1. What kinds of physical activities do you like to do?
2. What do you like about those physical activities?
3. How do those physical activities make you feel?
4. What kinds of physical activities do you not like to do?
5. What do you not like about those physical activities?
6. How do those physical activities make you feel?

Appendix H: Focus Group Interview Guide

Questions	***Remarks/Rationale***
Introduction: "Hello everyone, my name is Tyler. I am going to be asking you all some questions about physical activity and play today. I invited all of you here because you are in 1-3 grade. I am really interested in your physical activities/play that you normally do. This session will be voice recorded just for research purposes and we won't use any of your names or anything. The conversation will last up to 1 hour. We will go over the ground rules and write them on the white board here, then we will choose new names, so we can hide your identity, and then we will start our game. Does that sound good?"	Before starting the focus group, all the children and parents signed assent/consent forms and were informed about the study. The introduction will serve to introduce myself and a little more information about what we will be talking about and doing for the duration of the session.
Ground Rules/Topic: Write the topic and rules on white board so everyone can see them. Have a few 'must have' rules written and ask the group if they want to add anymore rules and add them to the white board.	Shows the children participants there are rules that everyone must follow. Sets the guidelines so no one is misbehaving or totally off topic.
Choosing Pseudonym Names: Explain to children we are picking new names just for the focus group session. It can be any name they want in the entire world. We will go around the room and introduce ourselves to everyone with our new names.	First, helps confidentiality as everyone will have a pseudonym. Also, helps build rapport and more comfortability with the children in the focus group. This will help everyone get to know each other a little bit more. Also, the icebreaker will be used as the main way to gather the focus group information. Each number on the dice is representative of one of the main questions.
Card Game** Explain the rules of the game. This will be the only activity during the focus group session.	The main questions. This is the main purpose and tool to answer the questions from the researcher.
MQ: What kinds of physical activities do you like to do? **FQ:** Do you do these with anyone? Where do you do these? Who picks this activity? **PQ:** Can you describe more?	Aims to explore what PA they like to do
MQ: What do you like about those physical activities? **FQ:** Do you always like this activity? **PQ:** Can you tell me more?	Aims to explore why they do the PA's they like

MQ: How do those physical activities make you feel? **FQ:** Is this every time you do these? How long do you feel like this? **PQ:** Do your friends feel like this too?	Aims to explore how they feel when they do the PA's they like
MQ: What kinds of physical activities do you not like to do? **FQ:** How often do you do this PA? Do you do these with anyone? Where do you do these? Who picks this activity? **PQ:** Tell me more.	Aims to explore what PA they don't like
MQ: What do you not like about those physical activities? **FQ:** Do you always not like this PA? **PQ:** Can you describe more?	Aims to explore why they don't like those PA's
MQ: How do those physical activities make you feel? **FQ:** Does this PA always make you feel this way? **PQ:** Please tell me more.	Aims to explore how they feel when they do those PA's they don't like
Closing: "Is there anything else you thought about during the focus group or anything you would like to add about physical activities you like or dislike? Awesome, that is all for the focus group! I would like to thank each one of you for participating."	Gives them the opportunity to add anything they want before the focus session has come to a close.

****Card game will serve as beginning of focus group main questions.**
MQ→ Main Question; FQ→ Follow-up Question; PQ→Probing Question/Probes

VITA

Tyler John Kybartas was born October 23, 1989 in Mesa, AZ. He was raised in Tucson, AZ with his brother, E.K., and sister, Erika, by their parents Edmund and Marlys Kybartas. He attended Sabino High School and graduated in May 2008. He then received his Bachelor of Science in Kinesiology and Health Promotion from the University of Wyoming in Laramie, WY in August 2012. Following his Bachelors, he stayed at the University of Wyoming and obtained his Master of Science in Kinesiology in December 2014. He then attended the University of Tennessee in Knoxville, TN. There he obtained his Doctor of Philosophy in Kinesiology and Sport Studies with a specialization in Exercise Physiology and a minor in Epidemiology in 2019. Following his Ph.D., he went on to accept a position as an Assistant Professor in the department of Kinesiology and Recreation at Illinois State University in Normal, IL.