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ABSTRACT

PERCEIVED PHYSICAL COMPETENCE AMONG ADOLESCENT MALES WITH MILD MENTAL RETARDATION

By

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This study examined the relationship between perceived and actual basketball competence and the influence of these perceptions on sport participation preferences and motivation to participate in sport among 25 adolescent males with mild mental retardation. Using Pearson product-moment correlations, a statistically significant relationship was found between perceived and actual basketball competence on the push pass for accuracy and on the jump and reach. The relationships between perceived and actual competence on the speed dribble and free throw shooting were not statistically significant. Frequency distributions indicated that participants preferred to play baseball, basketball, soccer, and horseback riding; as well as "play alone at home or with the family," "with friends at school," and "in the community." Subjects participated in sport so they could "be with friends," "improve their skills," and "have fun." Reasons for inflated perceptions of perceived competence scores

included: (a) subject characteristics; (b) educational placement; (c) comparisons with reference groups, (d) response bias; and (e) poor illustrations on the pictorial scale. Limited exposure to playing and watching sports such as track and field, and volleyball, the quality of involvement in terms of the type and effectiveness of the support and feedback given when participating in sports, and the opportunity for success added insights into participation preferences and motives of adolescent males with mild MR.

DEDICATION

This thesis is dedicated to my parents Carol and Paul Shapiro for their love, and continued support, and encouragement.

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Chapter One: Introduction

Overview of the Problem

Disabilities such as mental retardation (MR) can interfere with a person's abilities to learn and/or perform within any educational environment, including physical education (Jansma & French, 1994). MR often is associated with considerable delays in areas such as fundamental motor patterns, physical fitness, and the learning of complex motor skills (Block, 1991). From infancy, the child with MR may have motor development that progresses at a slower rate than expected for children with average intelligence (Connolly & Michael, 1986). This delay in development is less noticeable in infancy, but becomes more apparent as the child grows older. Research indicates that the level of physical fitness and the motor performance of boys and girls with MR is well behind published standards of the motor performance of children without MR. In skills such as dynamic strength, the shuttle run, standing long jump, the 50-yard dash, the 300-yard run, and the softball throw, the scores for individuals with MR lagged anywhere from one to four years behind the

performance of children without MR, even though children with MR approach children without MR in physical development (Chasey & Wyrick, 1971; Corder, 1966; Rarick, Widdop, & Broadhead, 1970).

These delays and limitations in physical performance can influence the ways individuals with MR perceive themselves. Children who perceive themselves to be highly competent at an activity may persist longer and continue to attempt to master the skill. A positive perception of one's physical competence can lead to the enhancement of intrinsic pleasure and motivation toward participating in sport. A perceived lack of competence can lead to anxiety in mastery situations, consequently resulting in a decrease or withdrawal from participation in sport (Rudisill, Mahar, & Meaney, 1993).

Harter (1978) also identified actual competence as a contributing factor to a person's motivation. If a person is not aware of actual physical competence, abilities may be over estimated or under estimated. Over-estimation may lead to unrealistic expectations and unsuccessful outcomes. Experiencing failure when a task is not perceived as difficult may result in low perceived competence. A person under-estimating actual competence may have low expectations for future competence.

These latter expectations may negatively affect one's performance outcomes and motivation (Rudisill, Mahar, & Meaney, 1993).

Statement of the Problem

The purpose of this study was to examine the relationship between perceived and actual physical competence on basketball skills among 25 adolescent males with mild MR between the ages of 12 and 15 years who attended schools in regular education settings. Sport as well as team/group preferences and reasons for participating in sports were examined to provide additional insights into the the relationship between perceived competence, actual competence, and competence motivation toward sport.

Need for the Study

The prevalence of MR in the United States is estimated at 3% of the total population. The 1990 U.S. census indicated that the United States has approximately 7.5 million citizens with MR. Persons with MR comprise the third largest disability group receiving special education in the United States (Sherrill, 1993), behind learning disabilities and speech/language impairments (Jansma & French, 1994). Almost 600,000

students with MR between the ages of 6 to 21 years receive special education services (Sherrill, 1993).

Practitioners and researchers should understand the relationship that perceptions of physical competence have on motor performance and motivation toward participation in sport among adolescents with mild MR. Participation in sport serves as a forum for the development of motor skills, physical fitness, cooperation, leadership, problem-solving, turn-taking, and sharing, as well as the development of self-esteem and self-confidence (Ulrich, 1984).

Adolescents with either accurate or inaccurate positive perceptions of physical competence may be intrinsically motivated to participate in sports, may exert and sustain effort while striving toward challenging goals, and would most likely attain such goals. This success may lead to positive affective outcomes and continued or increased participation in sports throughout life. The greater opportunity for participation facilitates opportunities for the development of the above-mentioned skills (Weiss & Horn, 1990). Adolescents who have an accurate or inaccurate negative perception of physical competence will most likely avoid opportunities to participate, use minimal effort when involved in physical activity, and

experience feelings such as anxiety and low achievement levels. Negative affective feelings may cause a person to discontinue participation from sport and physical activity. These individuals may, consequently, lose out on the opportunity to develop the above mentioned skills (Weiss & Horn, 1990).

This study is important because an understanding of the relationship between perceived and actual physical competence is necessary to effectively plan, organize, and develop appropriate teaching strategies and curricula for adolescents with mild MR. This foundation can help enhance skill development, maintain or improve positive perceptions of physical competence, and avoid the negative effects of inaccurate perceptions among adolescent males with mild MR. The improvement in programs and activities has the potential to motivate adolescents with MR to participate and perform developmentally appropriate motor skills so that they may be physically active, healthy, and competent as adults.

Based on the purposes of this investigation the following hypotheses and research questions were put forth.

Hypotheses

1. A positive relationship exists between perceptions of physical competence and actual basketball competence on the push/chest pass for accuracy.

2. A positive relationship exists between perceptions of physical competence and actual competence on the jump and reach.

3. A positive relationship exists between perceptions of physical competence and actual basketball competence on the speed dribble.

4. A positive relationship exists between perceptions of physical competence and actual basketball competence on free throw shooting.

Research Questions

1. Why do adolescent males with mild MR participate in sports?

2. What sports do adolescent males with mild MR prefer to play?

3. With which teams/groups do adolescent males with mild MR prefer to play?

Assumptions

In order to draw conclusions from the results, assumptions pertaining to subject performance, test, and research design are included below:

1. The sport participation survey included lists of sports, teams/groups, and participation motives that are important to adolescent males with mild MR.

2. The perceived competence scale and the basketball skills tests were appropriate indicators of perceived competence and basketball ability respectively for adolescent boys with mild MR.

3. Adolescents with mild MR gave their true feelings as responses to the Pictorial Scale of Perceived Basketball Competence, and not responses they deemed to be socially acceptable.

4. Subjects performed their best on the basketball skills test.

5. The participants with mild MR in regular education settings were representative of other adolescents with mild MR in other regular education settings throughout this midwestern state.

Limitations

In order to avoid any unwarranted conclusions as the result of a failure to recognize deficiencies in the research methods, the following limitations were identified in this study.

Subject limitations. Subject selection was limited to adolescent boys with mild MR who were educated in regular education settings. Participants were between the ages of 12 and 15 years. Participants (n=25) included 16 African-American children, and 9 Caucasian children. The investigator could not guarantee maximum performance by any participant. It was difficult during administration of the test to determine whether the students gave responses that were socially acceptable or whether they gave responses that reflected their true feelings of physical competence.

Procedural limitations. The investigator administered the tests associated with all three of the dependent variables (the sport participation survey, the pictorial scale, and the basketball skills test). The potential for bias in participants' responses was reduced by administering the sport survey first so that responses were not influenced by the participants' perceived or actual basketball abilities. Illustrations of the basketball

skills on the pictorial scale may have been vague in that they did not specify distances required for the passing, shooting and dribbling skills. Bandura (1990) found that people tend to overestimate their capabilities, and that the discrepancy between perceived and actual ability may be more likely to occur when task factors are ambiguous. In addition, participants were asked to evaluate their ability without any physical practice at the task, so it may be more understandable for perceived ability judgments to be high.

Data collection limitations. Data collection depended on the accuracy and consistency with which the investigator administered each of the three tests. Data collection took place in the subject's school gymnasium. Conditions such as time of day, the quality of gymnasium facilities, and testing conditions varied depending on the location of the testing site. Some participants were tested following their physical education class, while others were tested prior to lunch or between classes. Participants may have been fatigued after physical education class and might have performed better at another time of day. Participants tested prior to lunch or between classes may have been eager to leave and may not have taken their time to perform some of the skills.

Gymnasium facilities could have influenced performance, as some participants performed skills against uneven brick walls or near benches.

Instrumentation limitations. The instrument used to evaluate actual competence was modified from its original source. As a result, normative data for each of the basketball skills tested in this investigation were not available to evaluate the actual basketball competence of participants with MR. The lack of an absolute reference from which to evaluate actual basketball competence limited the conclusions about the relationship between perceived and actual basketball competence of adolescents with mild MR.

Operational Definitions

Actual competence. One's ability or capacity to deal effectively with one's surroundings (Deci, 1975). For the purpose of this study, actual competence was measured in the physical domain and focused on performance at specific basketball skills.

Adolescent. Any boy or girl with or without a disability between the ages of 12 to 15 years.

Affect. Emotions or feelings that either enhance motivation and future mastery attempts or decrease future participation motivation. Positive affect is distinguished by enjoyment, happiness, pride, excitement, and pleasure. Negative affect consists of anxiety, embarrassment, shame, sadness, and disappointment (Weiss & Chaumeton, 1992).

Competence/effectance motivation. A motive that impels a person toward competence, and influences one's desire to initiate mastery attempts in particular achievement domains. The development of characteristic achievement behaviors such as perceived competence, perceptions of performance control, and affect also are influenced by one's level of motivation (Weiss & Chaumeton, 1992).

Extrinsic motivation. Behavior which is motivated by a person's need for external or outside motivational influences. Extrinsic motivation as it relates to sport and physical activity refers to those individuals who participate for social approval from adults and peers, for material rewards, and for social status.

Intrinsic motivation. Behavior which is motivated by a person's need for feeling competent and self-determining in relation to the environment (Deci, 1975). Intrinsic motivation as it relates to sport and

physical activity refers to those individuals who participate for the sheer joy, pleasure, fun, curiosity, and personal mastery involved with the experience (Weiss & Chaumeton, 1992).

Learning disability. A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell, or do mathematical calculations. Such disorders include conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term learning disability does not include children who have learning problems which are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage (Individuals with Disabilities Education Act of 1990, Section 901).

Mental retardation (MR). The American Association on Mental Retardation outlined a four-part definition of MR (Sherrill, 1993). To be classified as having mental retardation a person must: (a) have substantial limitations in certain personal capabilities; (b) have significantly subaverage intellectual functioning (an IQ measurement of 75 or below);

(c) have mental retardation as a result of an injury, disease, or abnormality that existed before age 18; and (d) be impaired in his or her ability to adapt to the environment in two or more of the following adaptive skill areas: communication, home living, work, self-care, social skills, leisure, and functional academics (Batshaw & Perret, 1992; Sherrill, 1993).

Motivation orientation. The motivational stance which the child adopts toward a specific achievement domain. This perspective provides a measure of the underlying reasons for engaging in particular achievement-related behaviors (Weiss, 1984).

Perceived competence. Perceived competence incorporates the goal of dealing effectively or competently with the environment, thereby resulting in feelings of efficacy (Harter, 1978). It is a measure of one's feelings about different dimensions of the self (Hoguin, 1990), and is based on one's desire to produce an effect on the environment. As it pertains to sport and physical activity, perceived physical competence refers to one's perceptions of ability to perform motor skills (Ulrich, 1984) as reflected in one's responses to test items on the Pictorial Scale of Perceived Basketball Competence.

Self-confidence. Self-confidence refers to the strength of the belief or conviction that one can successfully execute the behavior required to produce the outcomes (Bandura, 1977). With regard to sport, self-confidence refers to the belief or degree of certainty individuals possess about their ability to be successful in sport (Feltz, 1988). The strength of one's convictions may affect whether or not a person will try to cope with given situations. Self-confidence can determine how much effort people will expend, how long they will persist in the presence of obstacles and aversive experiences, and is believed to influence the level of performance by enhancing intensity, and persistence of effort (Bandura, 1977).

Self-esteem. A personal judgment of worthiness that is expressed in the attitudes the individual holds toward him/herself (Harter, 1983).

Chapter Two: Review of Selected Literature

This review of selected literature presents a rationale for and information on how Harter's theory of competence motivation can help understand the relationship between perceived and actual basketball competence for adolescent males with mild MR. Harter's theory also can be used to better understand how perceived competence can influence the preferences, motives, and behaviors of the same sample of adolescent males toward participation in sports. Components in Harter's theory that help to understand these relationships include age, gender, motivational orientation, and social reinforcement.

Competence Motivation Theory

Effectance motivation theory, originally conceptualized by White (1959), provides a means by which to understand intrinsic and extrinsic motivational orientations (Weiss & Chaumeton, 1992). White's theory of effectance motivation proposed that individuals are intrinsically motivated to deal effectively or competently within their social and physical

environments and do so by engaging in mastery attempts (White, 1959). If these mastery attempts result in successful or competent performance outcomes, feelings of efficacy and inherent pleasure are experienced (White, 1959). These positive feelings either maintain or enhance intrinsic or competence motivation.

Harter (see Figure 1) refined and extended White's model. Harter viewed competence motivation as a multidimensional construct that influences both the initiation of mastery attempts in particular achievement domains and the development of characteristic achievement behavior such as perceived competence (Harter, 1978; Weiss & Chaumeton, 1992). Harter differentiated mastery attempts in three general skill areas: cognitive, social, and physical. Within each domain, six components interact to maintain, increase, or decrease competence motivation. Weiss and Chaumeton, (1992) labelled these components as follows: (a) domain-specific mastery attempts; (b) influence by significant others in the form of modeling and reinforcement; (c) performance outcome in relation to task difficulty; (d) internal/external sources of information used

for judging and reinforcing personal competence and the adoption of certain performance goals; (e) perceived competence and perceptions of performance control; and (f) affective outcomes.

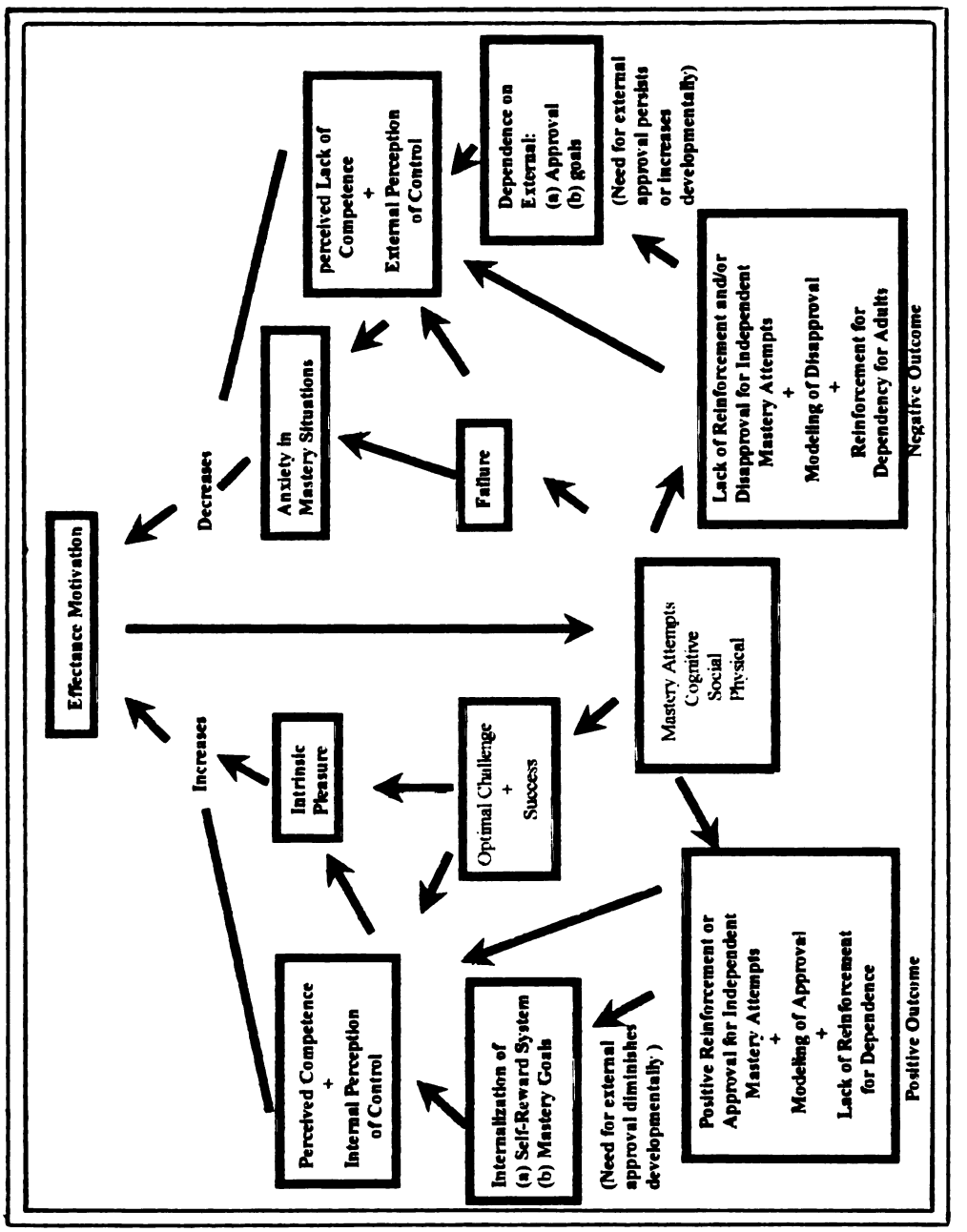

Figure 1. Harter's developmental refinement and extension of White's model of effectance motivation (Harter, 1978).

As illustrated in Figure 1, competence motivation influences one's participation in mastery attempts. A positive relationship exists between pleasure and the difficulty level of a task. Very difficult tasks may be associated with negative subjective evaluations of one's performance and ability due to the amount of time or effort required. As a result, a person does not experience maximum pleasure (Harter, 1978). Experience in mastery attempts that are optimally challenging result in positive subjective evaluations. An important mediating variable in the experience of pleasure from mastery attempts in the physical domain may be perceived ability (Harter, 1978; Ulrich, 1987).

The role of socializing agents can maintain, enhance, or attenuate competence motivation. The need to reinforce people for independent mastery attempts as well as successes is incorporated into the role of the socializing agents (Harter, 1978). At a general level, feedback can be provided to assist people in determining their mastery goals. This information helps to define those behaviors and outcomes that are important. At a specific level, information or feedback such as a reward can be provided with regard to the success and failure of one's behavior (Harter, 1978). While general feedback provides information with regard

to which behaviors are important, the more specific feedback provides confirmation regarding the success of one's attempts in a particular domain (Harter, 1978). The evaluative function of specific information may have implications for the development of perceived competence.

The nature and strength of the self-reward system the individual develops is a function of the amount and type of social reinforcement received. This source of information is internalized. The intrinsically-motivated individual may be capable of performing with limited reinforcement, where that reinforcement functions to confirm one's standards for success as well as one's perceived competence (Harter, 1978). These individuals are motivated to engage in challenging tasks, be curious, and feel confident in their ability to independently master material (Harter & Connolly, 1984). Positive evaluations of performance pave the way for the internalization of an "approving voice" as well as enhance a child's own feelings of competence or self-esteem (Harter, 1978). The externally-oriented individual received a lack of reinforcement or disapproval for independent mastery attempts and reinforcement for dependency on adults. Individuals experiencing this type of socialization history are extrinsically-oriented and tend to display a need for external

approval as well as dependence on externally defined goals for behavior (Harter, 1978). These individuals internalize such disapproval, resulting in a view of themselves as relatively incompetent. The child who thinks poorly about his/her competence and feels badly about it may avoid challenging mastery situations, preferring easier skills in which he/she can rely on the teacher's or peers judgments, feedback, or assistance (Harter & Connolly, 1984).

One's reinforcement history can have implications not only for one's motivational orientation but also for one's perceived competence and one's sense of control over the outcomes in one's life (Harter, 1978). If the message a person receives about his/her success, goodness, or worth is positive, this person is expected to demonstrate feelings of high self-esteem and a perception of competence. The combination of perceived competence or high self-esteem and an internal perception of control should enhance feelings of efficacy or intrinsic pleasure. These positive perceptions serve as mediators by maintaining or increasing effectance motivation. Negative evaluative feedback may lead to feelings of low self-esteem and to the lack of perceived competence (Harter, 1978). The combination of low self-esteem or perceived lack of competence and

external perceptions of control may lead to anxiety in mastery situations and a decrease in effectance motivation (Harter, 1978).

The Pictorial Scale of Perceived Competence and Social Acceptance (Harter & Pike, 1984) can be used to evaluate a person's competence in the cognitive, social, and physical domains. A separate score can be calculated for each domain, resulting in a self-concept profile (Ulrich & Collier, 1990). Harters' scale items for perceived physical competence were written in terms of sports and outdoor games. Although a person may feel competent in sports in general, he/she may not feel competent in a specific sport or vice versa. Ulrich and Collier (1990) modified the physical domain of Harter's pictorial scale so that it represented fundamental motor skills appropriate for children with MR between the ages of seven and 12 years. Initial results of this scale indicated positive psychometric properties. A coefficient alpha of .82 was calculated to determine internal consistency of the items on the modified scale. Test-retest reliability correlations were significant for 9 of the 10 skills on the modified pictorial scale. These results suggested that over a short period of time (three to five days) participants between the ages of seven and 12 years consistently responded to the items on the scale. A calculation of

mean scale scores indicated that the scores of participants with MR between the ages of seven to 12 years were similar to the scores of normal cognitive functioning five to nine- year-olds (Ulrich & Collier, 1990). Feltz and Brown (1984) indicated that perceived competence in a specific sport is a separate component of perceived physical competence. Investigators interested in how perceptions of competence relate to motivational and performance variables in a specific sport may find sport-specific perceived competence a useful measure.

Factors Influencing Perceived Competence

Harter's model is sensitive to developmental differences. These differences in development may be critical to the investigation of adolescent's perceptions of ability in the physical domain (Weiss & Horn, 1990). Factors affected by development that may influence one's perceptions of competence include: age, gender, motivational orientation, and social reinforcement.

Age. Results of a study by Horn and Weiss (1991) on the self-ability judgments of 134 children without MR between the ages eight and 13 years found that perceptions of academic competence declined across the preschool and elementary school years. It also appeared that there

were positive changes in the accuracy with which children without MR judged their performance competencies. Before the age of seven or eight, there was little or no correlation between children's perceptions of academic and/or cognitive competence and measures of their actual competence. Between the ages of 8 and 14, however, the correlation between perceived and actual competence increased linearly. Therefore, children without MR became more accurate in their estimates of perceived academic competence across the childhood years. Results from a study by Feltz and Brown (1984) found that the accuracy with which children without MR evaluated their soccer competence increased linearly from ages 9 to 13. This increased accuracy occurs because children become cognitively more capable of analyzing the causes of performance outcomes. With increasing age, children show an increased ability to distinguish between effort, luck, and ability as determinants of performance outcomes (Horn & Weiss, 1991).

Accuracy in competence judgments may be related to developmental changes that occur in the criteria children use to evaluate their performance outcomes (Horn & Weiss, 1991). Beginning around the ages of six or seven, children without MR begin to compare their own

performance with those of relevant peers. The use of peer comparisons increases over the middle and late childhood years, becoming one of the primary sources for redefining one's identity and of competence information for children in the early adolescent years (Harter, 1983; Horn & Weiss, 1991). The use of peer comparisons as a measure of evaluating personal sport competence increases from ages 8 to 14. Dependence on evaluative feedback from significant adults including parents, teacher, and coaches as well as dependence on game outcome decreased across the same age group (Horn & Weiss, 1991).

Developmental differences exist in reactions to feedback as it relates to expectancies of success. Young children base their judgments on social feedback, such that their objective success or failure may have little influence on their evaluations of how well they did. With positive reinforcement or approval for independent attempts, a person begins to rely less on external approval and more on the internalization of ability for success (Harter, 1978). The individual: (a) internalizes standards of what is important; (b) evaluates whether or not his/her performance was successful; (c) provides an internalized rewarding system accordingly; and (d) feels good or bad in reaction to these judgment s. With negative

reinforcement or a lack of reinforcement or approval for independent attempts, a person begins to rely more on external approval and on the externalization of ability for success.

Cognitive-developmental differences. Perceptions of physical competence are sensitive to cognitive-developmental shifts (Ulrich & Collier, 1990). Research with children, adolescents, and adults suggest that with increasing age individuals are able to differentiate more self-concept domains (Ulrich & Collier, 1990). Silon and Harter (1985), examined the self-perceptions of 126 students between the ages of 9 and 12 years who were educable mentally impaired (EMI) in both regular and special education classroom settings. The children were assessed to have an IQ between 55 and 85 points. These researchers found that children with MR do not make distinctions about specific domains, but rather make judgments about one's competence at activities in general.

Persons with MR do not structure their self-perceptions with the same degree of cognitive complexity as do children without disabilities (Silon & Harter, 1985). Whereas the perceived competence scale yields a four-factor solution among children aged 9 to 12 years without MR (scholastic competence, athletic competence, social competence, and

general self-worth), a two-factor solution was obtained for the same-aged students with MR (cognitive/physical competence and social competence). This limited ability to cognitively evaluate self-perceptions may be due to the fact that by the age of eight years, children can look at themselves as a global entity (Silon & Harter, 1985). Before age eight, children do not understand the self-worth items, produce unreliable estimates, or both. Because the mental ages of the children with MR in the study by Silon and Harter (1985) were below the age of eight years, one would not expect them to have the cognitive ability to make judgments concerning their self-worth. The factor pattern for children with MR was similar to the factor pattern that emerged in the construction of the Pictorial Scale of Perceived Competence and Social Acceptance for young children. The factor pattern that emerged for this latter group consisted of general competence and a social competence. These findings support the view that the ability to evaluate competence is less differentiated at lower cognitive levels (Silon & Harter, 1985).

As described in the section on age, several studies have examined the developmental changes in self-perceptions of competence. The ages of the subjects with MR in many of these studies ranges from 7 to 12

years (Silon & Harter, 1985; Ulrich & Collier, 1990), and from 8 to 13 years in studies involving children without MR (Feltz & Brown, 1984; Horn & Weiss, 1991). Within these age ranges, the accuracy with which one is able to evaluate his/her perceived competence is believed to increase. Research indicates that for persons with normal IQs, the critical mental age at which one has developed the cognitive skills necessary to compare themselves to their peers, to internalize their own standards for success, and to establish their own mastery goals, is between the age of 8 and 11 years (Harter, 1982; Harter & Pike, 1984). Correlations between perceived and actual competence, therefore, is believed to increase within the age group. Little research has been conducted related to the developmental changes and the accuracy of perceptions of physical competence in adolescents with MR between the ages of 12 and 15 years. It is hypothesized that adolescents between the chronological age of 12 and 15 years have developed the cognitive skills necessary to evaluate their competence in the physical domain. Like persons without MR between the ages of 8 an 11 years, a positive correlation between perceived and actual physical competence may be expected for adolescents with MR between the ages of 12 and 15 years.

Gender. Gender plays a greater role on perceptions of competence during the elementary school years than in adolescence. In a study of fifth and sixth graders (Roberts, Kleiber, & Duda, 1981), girls' feelings of competence were highly related to the preference for challenge. Affect was found to be more essential in promoting competence motivation and mastery behaviors in girls than in boys for the cognitive domain. This finding may be explained in part by the sex-role stereotypes concerning the expression of affect, in that girls and women are given more freedom to express their emotions than are boys and men in this society. For boys, the evaluation or cognitive appraisal of academic competence was a better predictor of their intrinsic mastery motivation. Gender differences with regard to the relative strength of intrinsic versus extrinsic motivation were found in older children. Boys were found to demonstrate significantly more intrinsic mastery motivation; whereas, the need for adult approval was the more important motivational determinant for girls (Harter, 1978).

The sex-type of a sport as masculine, feminine, or neutral may influence one's perceptions of competence in that activity. Lirgg (1991) conducted a meta-analysis of gender differences in self-confidence in physical activity. Although no conclusion could be reached concerning

the magnitude of gender differences in sport, males on average were more confident than females. With regard to the orientation of tasks, those judged to be more masculine than another task produced greater gender differences in self-confidence (Lirgg, 1991). The more masculine the task is considered, the greater the confidence difference between males and females. In a study of the self-efficacy and basketball shooting performance of boys and girls without MR between the ages of 9 and 12 years, boys demonstrated higher expectations than girls (Chase, Ewing, Lirgg, & George, 1994). One explanation for this difference in expectations may be related to the labelling of basketball as a masculine sport (Lenney, 1977). In this same study (Chase et al., 1994) boys reported practicing with their team twice as often as the girls reported they practiced. The increased amount of practice for boys may be due in part to the greater social desirability and support for boys basketball. Consequently boys may have gained more experience in shooting baskets than the girls at an earlier age resulting in increased performance for the boys (Chase et al., 1994). Studies investigating the relationship between performance and perceptions of basketball among boys and girls above the age of 12 years were not available.

Motivational orientation. In a study by Harter and Zigler (1974), four measures were constructed to tap different components of intrinsic and extrinsic motivation in children with and without MR of the same mental age. These measures included: (a) response variation; (b) curiosity for novel stimuli; (c) mastery for the sake of competence; and (d) preference for challenging tasks. On all four measures, the children without MR were found to demonstrate greater intrinsic motivation than children with MR (Harter & Zigler, 1974). When comparing children with and without MR matched for mental age, the children with MR manifested less pleasure over the mastery of challenging problems than did children of average intelligence (Harter & Zigler, 1974). Motivation orientation although not directly assessed in this investigation is believed to be influenced by one's perceptions of competence (Harter, 1978).

Social reinforcement. Harter (1977) conducted a study in which she examined the effects of social reinforcement and task difficulty on the pleasure derived by 64 first-grade children with and without MR on cognitive challenge and mastery. Each child was given puzzles representing four difficulty levels. Half the children were socially reinforced for their success while the other half performed in an

experimenter-absent condition. Results indicated that children with MR appeared to (a) be more concerned about failure, (b) have more doubts about their ability, particularly on the more difficult tasks, and (c) were more dependent on the adult experimenter for feedback, praise, or direction (Harter, 1977). The children without MR showed more eagerness for the more difficult tasks, made more spontaneous comments, and were likely to verbalize their enjoyment over their success (Harter, 1977). These findings supported the view that the position of effectance motivation may be of less importance in the motive hierarchy of children with MR as other motives such as fear of failure, lower expectancy of success, outer-directedness, and need for approval become more salient. Components such as curiosity, preference for challenge, and mastery for the sake of competence may be lower in the hierarchy of children with MR (Harter, 1977).

Relationship between Perceived
and Actual Physical Competence

Actual competence has been identified as an indirect mediator of motivated behavior by its effect on self-perceptions of ability (Ulrich & Collier, 1990; Ulrich, 1987). While actual competence affects perceptions

of competence, one could incorrectly perceive one's ability as low and thus choose not to participate. Conversely, poorly skilled persons could perceive their competence as high and thus be motivated to participate (Ulrich, 1987). Accurate perceptions of abilities may influence internal perceptions of control. thereby increasing or decreasing one's intrinsic pleasure and motivation to continue participation. Unrealistic expectations or perceptions of performance and ability may lead to anxiety in mastery situations negatively affecting one's performance outcomes and motivation to participate in sport (Rudisill, Mahar, & Meaney, 1993). Actual and perceived competence, therefore, interact to influence motivational orientation and the pursuit of future mastery attempts.

Researchers have found the motor performance of boys and girls between the ages of seven and 18 years with MR (IQ between 50 and 90 points) to be well behind published standards of the motor performance of children without MR (Francis & Rarick, 1960; Rarick, Widdop, & Broadhead, 1970). Research comparing the motor performance of children fitting the above criteria indicates the following:

1. In tests of strength, such as the flexed arm hang, the children with MR of either sex were not as strong as their peers without disabilities. Children with MR lagged one to three years behind the standards for children without MR (Francis & Rarick, 1960).

2. On the standing long jump, the performance of both boys and girls with MR was approximately one standard deviation below the mean or three to four years behind the performance of children without MR (Rarick, Widdop, & Broadhead, 1970).

3. In the vertical jump, a measure of explosive muscular power, children with MR were at least four years behind the development of children of the same age and sex without MR (Francis & Rarick, 1960).

4. On the shuttle run, the performance of the boys with MR consistently remained one standard deviation below the mean for boys without MR. Boys with MR were approximately four years behind boys without disabilities on this task (Rarick, Widdop, & Broadhead, 1970). The girls with MR scored between one half to one standard deviations below the mean of girls without MR.

5. In running speed, the standard for 10-year-old boys and girls without MR was above the average performance of 14-year-olds of the same sex with MR. Boys and girls with MR between the ages of 10 to 17 years remained approximately one standard deviations below the mean of boys and girls without MR, a lag of two to three years (Rarick, Widdop, & Broadhead, 1970).

6. In the softball throw, the magnitude of the delay for boys with MR remained approximately one standard deviation below the standards for boys without MR. The extent of the delay was somewhat less for the girls with MR than for the boys with MR. The level of throwing performance for the girls with MR was closer to that of girls without MR than in any other skill assessed in this study (Rarick, Widdop, & Broadhead, 1970).

Research has been conducted on basketball performance of children between the ages of 7 and 12 years (Chase et at., 1994; Gabbard & Shea, 1980; Haywood, 1978; Wright, 1967) as well as on athletes involved with junior varsity and varsity basketball teams. Research indicates that physical strength, speed, and agility may be factors influencing basketball performance (Chase et al., 1994; Gabbard & Shea, 1980; Haywood,

1978). Additional factors influencing basketball performance include the weight of the ball, the height of the basket, and the distance of the skill. Haywood (1978) found that performance on the speed pass improved when participants used a junior size basketball rather than a regulation size basketball. Older participants and boys, however, tended to perform better on a shooting task when using a regulation size basketball (Haywood, 1978; Wright, 1967). The height of the basket was also an influencing factor on basketball performance of children between the ages of 9 and 12 years. Children had better shooing scores at an 8-foot and/or 9-foot basket than with the traditional 10 foot basket (Chase et al., 1994; Gabbard & Shea, 1980). Gabbard and Shea (1980) also indicated that participants had difficulty performing a foul shooting skill from the regulation 15-foot distance. These researchers recommended adjusting the distance from the basket as well as the height of the basket to maximize the performance of children. Research on experienced male basketball players indicated that (a) using a ball that is two ounces heavier and 1-1/4 inches larger in circumference than a regulation basketball causes no difference on shooting foul shots or on the dribble test, and (b) the larger and heavier basketball significantly affects passing a ball

against a wall (Lindeburg & Hewitt, 1965). No research was available on the basketball performance of children older than 12 years of age who were not participants on varsity school teams. Information on basketball performance of persons with MR at any age also was not available.

Despite the delay in motor skills such as strength, running speed, and agility, persons with MR between the ages of 12 and 15 may have developed the cognitive skills necessary to evaluate their competence, and may perform in accordance with these perceptions. Under conditions of optimal challenge and success and/or in situations where positive reinforcement is received for independent mastery attempts, persons with MR may develop positive perceptions of competence as well as internal perceptions of control, and therefore, experience an increase of intrinsic pleasure and motivation to engage in additional mastery attempts.

Relationship between Perceived Competence and Participation Motivation

Results of investigations within the physical domain tend to support a significant relationship between perceived competence and participation in organized sport. Klint and Weiss (1987) conducted a study involving 106 males and females without MR between the ages of 7 and 25 years to

identify the motivational characteristics which distinguish competitive, recreational, and former youth gymnasts. A fairly consistent set of motivational factors were identified to describe the reasons or motives for participating in and/or discontinuing involvement in sport (Klint & Weiss, 1987). These motives included competence, fitness, affiliation, team aspects, competition, and fun. The competence-related motive includes aspects such as learning new skills, improving skills, and competing at higher levels. Fitness-related motives incorporate getting in shape, staying in shape, getting stronger, and a desire to be physically fit. Team affiliation examines the desires to be with friends, make new friends, or be involved with team spirit. Additional team factors influencing one's motives to participate are competition, fun, excitement, challenge, and action (Klint & Weiss, 1986; 1987).

For athletes without MR between the ages of 7 and 25 years, the most common reason for participation in competitive sport programs such as swimming or gymnastics were competence-related motives, fitness-related motives, fun, and challenge (Gould, Feltz, Horn, & Weiss, 1982; Klint & Weiss, 1987). Some of the less important reasons for participation included energy release (get rid of energy, release frustration), status-

related motives including want others to notice me, want to be popular with others, as well as extrinsic reasons such as to receive ribbons or trophies, like to travel, parents want me to play (Klint & Weiss, 1987). Affiliation-related motives such as best friends want me to participate, want to be with my friends, and like to meet new friends, were also less important reasons for participating in competitive sports such as gymnastics (Klint & Weiss, 1987). Recreational participants, however, were more highly motivated by fun (Klint & Weiss, 1986). Not only are children motivated into sport by a variety of reasons, but they are also motivated by different levels of involvement. Children and adolescents participate in many different sporting pursuits ranging from recreational to competitive, from unstructured to highly structured, and from developmental to elite levels (Klint & Weiss, 1986).

A comparison of children without MR indicated that children high in perceived physical competence assigned greater importance to skill development reasons such as learn new skills, improve skills, compete at higher levels, and to become more competent than children low in perceived competence. Those perceiving themselves as physically competent also cited affiliation-team atmosphere as a more important

participant motive than did those lower in their perceptions of physical competence (Klint & Weiss, 1987). Furthermore, children with high perceived social competence rated friends as a more important reason for participating than did those low in perceived social competence. Persons low in perceived competence tended to rate excitement/challenge as a more important reason for participating than did those high in perceived social competence (Klint & Weiss, 1987).

Research on sport attrition patterns in youth sport identified "other things to do" as a reason rated highest in importance for discontinuing involvement (Gould et al., 1982). Other reasons for discontinuing involvement included "I was not as good as I wanted to be," "I did not have enough fun," "I wanted to play another sport," "I did not like the pressure," "It was boring," "I did not like the coach," and "It was not exciting enough" (Gould et al., 1982, p.162).

Gender-related differences concerning reasons for discontinuing involvement were found to exist in only one area. Females rated "not liking the pressure" as a more important reason for leaving sport than males (Gould et al., 1982). Reasons for terminating involvement in competitive sport also differed with age. Adolescents aged 15 to 18

years cited "no teamwork," "parents or friends did not want me to play," "not enough challenge," and injury as more important reasons for discontinuing involvement than adolescents between the ages of 10 to 14 years, who rated "other things to do" as a more important reason for leaving sport (Gould et al., 1982).

The findings for participation and attrition patterns support the relationship between participant motives and self-perceptions of physical competence as explained by competence motivation theory. Further support of Harter's theory was found in the listing of the most and least important motives for competitive involvement in sport (Klint & Weiss, 1987). If these primary motives are met by the sport or physical activity environment, these children are more likely to continue their sport participation and enhance their perceived competence (Klint & Weiss, 1987). Therefore, to maintain optimal participation motivation, the athletic environment in conjunction with appropriate teaching strategies must be structured appropriately to fulfill these objectives and satisfy the needs of the participants.

Information on sport participation preferences and motives for persons with MR were unavailable. The observed relationship between perceived competence and participation motives in organized sport for persons between the ages of 12 to 25 without MR, however, is hypothesized to be similar for persons with MR within the same chronological age range. Like their peers without MR, if adolescents with MR positively evaluate their perceived competence and develop internal perceptions of control, they may choose to participate in sports and on teams/groups for competence-related reasons, fitness-related reasons, and for fun.

Summary

Harter's model of competence motivation serves as a theoretical framework for learning how perceptions of physical competence can influence sport participation preferences and motivation to participate in sport. Perceived competence has been theorized as having an important effect on competence motivation (Ulrich, 1984). Actual competence is believed to indirectly affect one's level of motivation by influencing one's perceptions (Harter, 1982). An understanding of these relationships may help physical educators motivate adolescents with MR to develop motor

skills, thereby affecting their perceived confidence and self-worth in general and with regard to sport. Improvements in performance and self-confidence will likely provide a more enjoyable experience so that participants may choose to continue playing sports, exert more effort, and persist longer (Chase et al., 1994).

Chapter Three: Methods

Research Design

The purpose of this study was to examine the relationship between perceived and actual physical competence on basketball skills among 25 adolescent males with mild MR between the ages of 12 and 15 years. Participants for the study were selected from regular education settings in a state in the midwest United States. Participants (a) responded to a sport participation survey to determine their preferred sports to play, the teams/groups with which they prefer to play, and their participation motives; (b) completed the Pictorial Scale of Perceived Basketball Competence; and (c) participated in a modified version of the American Association of Health Physical Education and Recreation (AAHPER) Basketball Skills Test for Boys (American Association for Health, Physical Education, and Recreation, 1966).

An ex post facto design was used to determine the relationship among the three dependent variables (sport survey, pictorial scale, and basketball skills test). Ex post facto designs describe relationships

between two or more variables. In ex post facto designs nature implements a treatment either through differences in environment in which participants find themselves, through differences in inheritance, or through a combination of these two factors (Shavelson, 1988). The investigator studied the relationship among the dependent variables after the participants had participated in various sports, thereby making this design ex post facto.

Threats to Internal and External Validity

Internal validity. The investigator was responsible for the administration of all three tests used to measure the three dependent variables. Each measure was pilot-tested to determine reliability, validity, testing procedures, and consistency of administration. The influences of history, maturation, testing, experimental mortality, and expectancy effect as threats to internal validity were unlikely given that each of the three tests were administered one after the other, on the same day within a 30-minute period of time.

External validity. External validity was influenced by the participants' reactions to the experimental arrangement. Participants may have perceived themselves as more physically competent as a result of

being the sole person in the testing environment and having the undivided attention of the researcher. The isolated environment and the individualized attention may have influenced a participant's motivation to participate at a level different from that of their typical performance. Adolescents with mild MR involved in this investigation, however, were thought to be typical of most adolescents with mild MR in regular education settings within this midwestern state.

Subjects

Subject characteristics. The sample consisted of 25 adolescent males (16 African-American, and 9 Caucasian) with mild MR. In this midwestern state, students with mild MR were identified as being educable mentally retarded (EMR). Of the total number of EMR students between the ages of 11 and 17 receiving special education services in this midwestern state 53.6% were males, while 46.4% were females. African American males comprised 18.2% of the population in special education behind African American females (13.3%), European American males (33.7%) and European American females (31.5%).

Participants ranged in age from 12 to 15 years (M =13.6, SD=1.01) and were in grades six through eight. Adolescents with mild MR were selected from regular education settings to participate in this study. In addition, participants attended regular physical education classes. All participants qualified for special education services according to federal and state definitions of MR, and had individual education plans on file at their schools. Participants were further identified by their special education coordinator as educable mentally retarded with IQs ranging from approximately 55 to 70 points. The participants had no identifiable physical, emotional, or behavioral disabilities which would influence their perceptions of competence and their performance on the basketball skills test.

For this investigation, persons with MR between the ages of 12 and 15 years served as a group from which to learn more about the underlying structure of the self-system. To minimize comparative studies between genders as well as between persons with and without MR, a population of males was selected. Use of comparative studies should be used once a better understanding of the relationship between perceived competence, actual competence, participation preferences, and motivation is developed.

Subject selection. Participants were recruited by using the following procedures:

1. Permission was received by the local school districts to conduct research using students from the district.

2. Permission was received directly from each principal, vice principal, and/or special education coordinator to conduct research involving students in their school. Special education coordinators helped to identify students with MR who qualified for this study. Students with multiple disabilities were not eligible to participate.

3. The student investigator distributed informed consent forms to a total of 30 students who met the selection criteria.

4. Adolescents whose parents responded positively to the informed consent forms were eligible to participate in this study. Power analysis indicated a sample size of 25 participants would be appropriate for determining significance of the hypotheses (Shavelson, 1988). Therefore, the first 25 students to return their permission forms were tested. A total of 4 students did not return their forms. One student returned his form after 25 students had already been selected. This person was tested, however, his results were not included in the analysis.

Informed consent. The investigator obtained approval from the University Committee on Research Involving Human Subjects (UCRIHS) to conduct this study (Appendix A). Prior to administration of the test battery, parents and subjects were provided with an explanation of the test battery, the testing procedures, and the student's rights as a participant in this study. The informed consent form was signed and returned to the investigator prior to data collection. Subjects could withdraw from the study at any time. Furthermore, there were no anticipated psychological or physical risks of injury to the subjects as a result of participation in this study.

Instrumentation

Sport Participation Survey. This survey (Appendix B) was developed by the author to assess participants' interests in playing 10 selected sports, their preferences of seven teams/groups with whom they could play, and the importance they assigned to each of 10 reasons for playing sports. The 10 sports represented lifestyle activities commonly offered in school, recreation, and neighborhood settings. The seven sport participation groups also are commonly found in school, recreation and neighborhood settings. The 10 reasons for playing sports were selected

from a study of adolescent participants in youth swimming and gymnastics (Klint & Weiss, 1986).

The format of this survey required participants to rank all the choices provided by putting the number "1" next to their first choice, the number "2" next to their second choice, and so on, until all responses were ranked. In the final analysis, the first three choices were summed in order to assess sport participation preferences for each of the three categories on the survey. After ranking their top three choices, participants appeared to have difficulty deciding the importance of the remaining choices. A panel of experts assessed content validity of the sport participation survey, the pictorial scale, and the selection of skills test procedures. The panel consisted of faculty members and graduate students knowledgeable in sport psychology and the factors that influence the performance of and participation motives of adolescents toward sport. Test-retest reliability (Norusis, 1993) was used to determine the reliability of the pictorial scale and the skills test.

Pictorial Scale of Perceived Basketball Competence. The Pictorial Scale of Perceived Basketball Competence was modeled after Harter's Pictorial Scale of Perceived Competence and Social Acceptance (Harter &

Pike, 1984a). This basketball-specific scale consisted of four sets of paired pictures depicting an adolescent boy passing, jumping, dribbling, and shooting a basketball (Appendix C). Under each pair of pictures was a series of five circles reflecting a perceived range of ability from "very good" to "not good."

The validity of the pictorial scale was assessed by a panel of faculty members in sport psychology who were familiar with Harter's theory of competence motivation and the corresponding assessment measures, and graduate students who were knowledgeable in coaching and providing basketball instruction to athletes on youth basketball teams. This panel of experts provided information on the body and limb positioning of the player depicted in the pictures, accuracy of the pictures to depict good and bad performance, and the orientation of the player in relation to the net, or the target. Reliability coefficients for the pictorial scale indicated an alpha of .94.

AAHPER Basketball Skills Test for Boys. The original AAHPER test was designed to measure general basketball ability, to stimulate motivation, and promote improvement in boys and girls between the ages of 10 to 18 years (AAHPER Basketball Skills Test Manual, 1966; Collins

& Hodges, 1978). The AAHPER test consisted of nine items, including the front shot, side shot, foul shot, under basket shot, speed pass, jump and reach, overarm pass for accuracy, push pass for accuracy; and dribbling (AAHPER Basketball Skills Test Manual, 1966; Collins & Hodges, 1978).

Hopkins (1977; 1979) found that a test battery comprised of a jump and reach task, a dribble task, a passing task, and a front shot would provide a quick and objective measure of basketball skill. The Knox Basketball Test for Boys, and the Johnson Basketball Test for Boys incorporated at least three of the four main basketball skills indicated by Hopkins (Barrow & McGee, 1964; Eckert, 1974; Collins & Hodges, 1978) thereby adding support for Hopkins' findings and the use of these four basketball skills.

In this investigation subjects completed four skills from the AAHPER basketball skills test to determine ability in passing, jumping, dribbling, and shooting a basketball. Based upon the results of a pilot test (Appendix D), the AAHPER test items for these skills were modified as follows:

1. The push pass for accuracy requires the subject to pass the ball using two hands toward a target. The target consists of three concentric circles: (a) the inner circle (18" diameter) representing a score of three points; (b) the middle circle (38" diameter) representing a score of two points; and (c) the outer circle (58" diameter) representing a score of one point. Any passes missing the target were given a score of zero. The participant takes 10 passes from a distance of 15 feet from the target. The final score was the sum of the passes for a total of 30 points (Appendix E).

2. The jump and reach task measures the height of the participant's jump by subtracting the initial reach from the final height of the jump. Each participant is allowed three jumps. The final score for this task was recorded as the best of two jumps (Appendix E).

3. The speed dribble requires the participant to dribble the ball in and out of a series of six cones. The score for this task is recorded as the amount of time in seconds needed to complete the routine. The time for two trials is recorded. The final score was the faster of the two trials (Appendix E).

4. The foul shot consists of four trials of five shots each for a total of 20 shots. All shots are taken from a distance of 10 feet from the basket. Three points are given if the ball goes in the basket, two points if the ball hits the backboard or the rim of the basket, one point if the ball hits the net, and zero points if the ball misses all targets. The participant's score for the foul shot is the sum of all the shots. A maximum score of 60 points can be achieved for this skill (Appendix E). Raw data from the pilot study for each of the four basketball skills can be found in Appendix D.

Validity of the basketball skills test was assessed by faculty and graduate students who were knowledgeable in youth sport basketball. This panel of experts provided feedback on appropriate distances for the passing and shooting tasks, as well as the relevance of these distances to the skills performed in actual game situation. Reliability scores for the push pass for accuracy from a distance of 15 feet, the speed dribble, the jump and reach, and free throw shooting were .92, .94, .98, and .74 respectively.

Data Collection Procedures

Testing was conducted between the months of March 1995 and May 1995. Participants were assessed individually on each of the three measures in the participant's school gymnasium with the investigator administering all three tests. An empty gym was preferable, however not always available. Several visits were made to each school in order to accommodate the scheduling needs of the special education coordinator, physical education teachers, and the students.

Prior to testing, the investigator took each participant out of class and walked with him to the gymnasium so that the student could become comfortable with the investigator, and the testing environment and procedures could be explained. Each participant was told that he would spend 10 to 15 minutes talking about sports, teams, and why he plays sports, as well as playing a basketball picture game. Following this discussion, the participant was told he would have a chance to play basketball. Participants were told they would be alone with the investigator for 30 minutes after which time they would return to their class.

Upon entering the gymnasium, participants sat with the investigator on the floor, away from the equipment. The sport survey was administered first to each participant, followed by the pictorial scale and the basketball skills test. The investigator read each question and corresponding list of responses on the sport survey to each participant. Subjects indicated their preferences by putting the number "1" next to their first choice, the number "2" next to their second choice, and so on, until all responses were ranked. As an answer was given, it was crossed off the list to avoid confusion and to force participants to make a decision based on the remaining choices. The question with the remaining answers were re-read to the participant. Participants were randomly asked for reasons for the order of their rankings.

To complete the pictorial scale, each participant was told to look at the pictures of the boy playing basketball, and to listen to the description given about each picture. The investigator pointed to a picture and said "This boy is very good/not very good at ..". While pointing to the corresponding circles the investigator asked the participant to indicate which picture best illustrates his basketball ability by marking an "X" in the appropriate circle (see Appendix C). The participants perceived

competence on each skill was later recorded as a number between one and five, with five being the highest score ("very good" at that skill) to one being the lowest score ("not good" at that skill). After completing these two scales, participants were given the basketball. The participants rotated through each of the four skills beginning with passing, then moving on to jumping, dribbling, and shooting. The best performance on each of the four basketball skills was recorded as the final score rather than the average of the trials. This scoring process was used (a) to reflect participants best performance, and (b) to maintain consistency with the original AAHPER Basketball Skills Test for Boys.

For the push pass for accuracy, participants were told that they had to stay behind the distance line indicated on the floor, and pass the ball using two hands to the target hanging on the wall. A demonstration of the skill and an explanation of the scoring system was provided to each participant. After each pass, the participant was told his score. The skill was completed when 10 passes had been taken from a distance of 15 feet from the target.

For the jump and reach task, participants were told to stand perpendicular to the wall, bend their knees, swing their arms up, jump as

high as they can and hit the tape measure attached to the wall. A verbal and physical demonstration was provided for each participant. The investigator stood on a chair in front of and slightly to the side of the participant so that an accurate measurement could be determined. A total of three jumps were taken. The first jump allowed the participant to practice, and provided a frame of reference for the investigator to measure the remaining two jumps. Feedback on the height of each jump was provided as incentive for the participant to jump higher on subsequent attempts. The final score was the higher of the two jumps.

The dribbling task required participants to dribble as fast as they could in and out of a series of six cones. The investigator provided a verbal and physical demonstration of the skill. The participant stood behind the starting line five feet from the first cone. On the signal "go" the participant dribbled in and out of each of the six cones and returned to cross the starting line. A practice trial was taken prior to the two timed trials. If the ball hit a cone or if the participant lost control of the ball, the trial ended and an additional trial was taken until two successful timed trials were completed. Participants were given time to rest between trials. The investigator encouraged participants to go as fast as they could by

saying things such as "keep going," "you're doing great," "excellent," and "come on, faster." Prior to the second trial, each participant was shown his time and challenged to do better. The final score was the faster of the two trials.

Free throw shooting was the last skill. Participants were shown where to stand and the scoring system was explained. The test administrator recorded the score for each shot. The participant was told the score after each shot was taken and was told when they had ten shots and then five shots remaining. Feedback such as "good shot," and "keep up the good work" were used to motivate participants.

Data Analyses

Three research questions and four hypotheses were used to guide this study (see Table 1). The relationship between perceived and actual basketball competence and the ranking of basketball as a preferred sport to play also were examined.

Table 1

Data Analyses

Hypotheses (H) or Research Questions (RQ)	Prediction/Topic	Statistical Treatment
H #1	Positive relationship between perceive and actual competence on push pass for accuracy	Pearson product moment correlation ($p<.05$)
H #2	Positive relationship between perceived and actual competence on the jump and reach	Pearson product moment correlation ($p<.05$)
H #3	Positive relationship between perceived and actual competence on the speed dribble	Pearson product moment correlation ($p<.05$)
H #4	Positive relationship between perceived and actual competence on free throw shooting	Pearson product moment correlation ($p<.05$)
RQ #1	Preferred Sports	Frequency Distribution
RQ #2	Preferred Groups/ Teams	Frequency Distribution
RQ #3	Participation Motives	Frequency Distribution

Chapter Four: Results

Three research questions were explored and four hypotheses were tested via statistical analyses. Results indicated support for Hypotheses 1 and 2 but not for Hypotheses 3 and 4.

Tests of Hypotheses

Descriptive Results. Table 2 provides the mean scores, and standard deviations for each skill on the pictorial scale and the basketball skills test. Subjects ranked themselves above four out of five points and tended to perceive themselves as "good" or "very good" on each of the four basketball skills. Out of 25 participants, only one person perceived his basketball ability as one ("not good") on free throw shooting, while a second person rated himself a two (between "sort of good" and "not good") on the jump and reach task.

Table 2

Perceived and Actual Basketball Competence Scores

Skill	n	Perceived Competence M	Perceived Competence SD	Actual Competence M	Actual Competence SD
Passing	25	4.40	.76	23.52	3.80
Jumping	25	4.36	.95	12.12	3.60
Dribbling	25	4.56	.95	12.51	3.55
Shooting	25	4.40	.96	47.50	3.95

Note. Perceived competence was scored on a 1-5 Likert-type scale.

The maximum possible score for passing was 30 points, and shooting 60 points. No limits were imposed by the test protocol for the jump and reach and speed dribble. The maximum scores for participants in this study on the jump and reach was 20 inches and the fastest score for dribbling was 8.55 seconds.

Hypothesis #1. According to Hypothesis #1, a positive relationship should exist between perceived and actual basketball competence on the push pass for accuracy. Results indicated a relationship of $r = 0.37$ (one-tailed $p = .034$), providing support for the hypothesis.

Hypothesis #2. According to Hypothesis #2, a positive relationship should exist between perceived and actual basketball competence on the jump and reach. Results indicated a relationship of $r = 0.38$ (one-tailed $p = .032$); between perceived competence and actual ability on the jump and reach, providing support for the hypothesis.

Hypothesis #3. According to Hypothesis #3, a positive relationship should exist between perceived and actual basketball competence on the speed dribble. Results indicated a relationship of $r = .02$ (one-tailed $p = .46$); between perceived and actual ability on the speed dribble. Thus, there was no evidence to show a statistically significant relationship between perceived and actual dribbling competence

Hypothesis #4. According to Hypothesis #4, a positive relationship should exist between perceived and actual competence for free throw shooting. Results indicated a relationship of $r = .21$ (one-tailed $p = .157$); between perceived and actual ability on the free throw shooting task. No statistically significant relationship was found between perceived and actual basketball shooting competence.

Pearson product moment correlations indicated positive correlations between perceived competence in jumping (r = .0208, p = .461) and passing (r = .0648, p = .379) and one's ranking of basketball as a preferred sport to play. Negative correlations were found between perceived competence in dribbling (r = -.0639, p = .381) and shooting (r = -0.776, p = .356) and the ranking of basketball as a preferred sport to play. Positive correlations were found between preference to play basketball and actual competence on the speed dribble (r = .6449, p = .000) and the push pass for accuracy (r = .0560, p = .395). Negative correlations existed between preference to play basketball and actual competence on the jump and reach and free throw shooting tasks (r = -.2848, p = .084, and r = -.5267, p= .003 respectively).

Research Questions

First, second, and third ranked items for each question, respectively, on the sport participation survey were summed to determine overall sport participation preferences and motives.

Research Question #1. Figure 2 describes the sports subjects preferred to play. The sports participants prefer to play were baseball,, basketball, soccer, and horseback riding. The least liked sports were

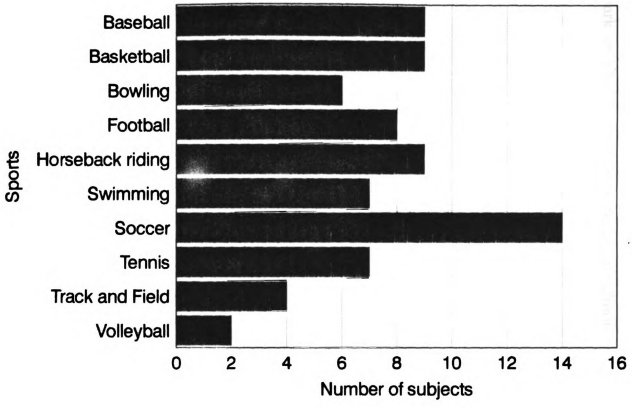

Figure 2. Sport Participation Preferences

Research Question #2. Figure 3 illustrates the types of teams or groups with whom participants preferred to play. Participants indicated a preference to play alone at home or with the family, in the community (park or YMCA), and with friends at school.

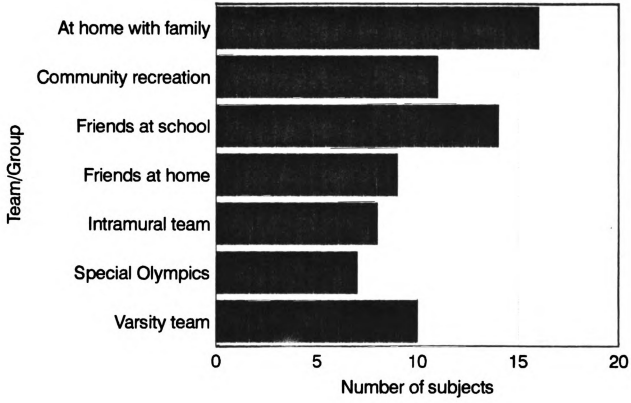

Figure 3. Team/Group Participation Preferences

Research Question #3. Figure 4 shows participants' reasons for playing sports. Participants play sports to improve skills, to be with friends, to have fun, and because they enjoy the competition. Parental encouragement, winning a medal/trophy, and an enjoyment for travelling were factors that were least important for participants in this study.

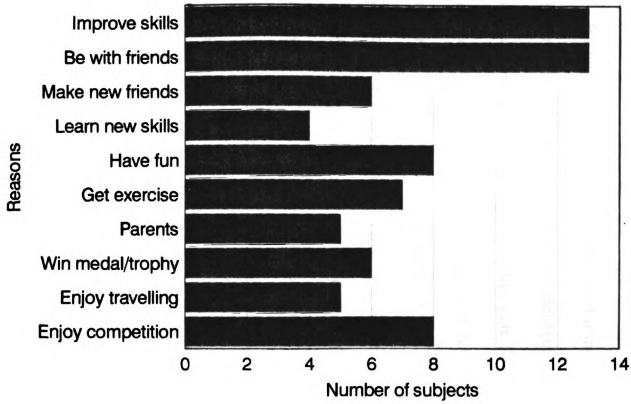

Figure 4. Reasons for Participating in Sports

Chapter Five: Discussion

Results of this study can be explained using Harter's theory of competence motivation. The relationship between perceived competence, actual competence and motivation to participate in sport may better be understood by examining: (a) the influence of development on perceived competence, (b) how perceived difficulty or lack of difficulty of a task influences motivation, (c) how opportunity for success influences motivation and perceived competence, (d) the influence of inclusion of persons with MR in regular physical education classes on actual competence, and (e) the use of social comparisons to evaluate perceived competence.

Relationship between Perceived Competence, Actual Competence, and Preferences to play Basketball

The findings of a positive relationship between perceived and actual physical competence for the push pass for accuracy, and the jump and reach for adolescent males with mild MR between the ages of 12 and 15

years indicated a trend similar to that found by Horn and Weiss (1991). These researchers found that the correlation between perceived and actual competence increased linearly between the ages of 8 and 14 years. The relationships between perceived and actual ability on the push pass for accuracy, the jump and reach, the speed dribble, and free throw shooting and preferences to play basketball may be related to player capabilities, practice conditions, and/or the type of equipment.

The significant relationship between perceived and actual passing ability may be due to the distance as well as the equipment used. Lindeburg and Hewitt (1965) found that ball size and weight significantly affected a person's ability to pass a ball against a wall. Passing a regulation sized basketball from a distance of 15 feet may have been an appropriate challenge matching the strength and skill level of the participants in this investigation (Gabbard & Shea, 1980). The inclusion of students with MR in regular physical education classes may have helped to improve the strength, and skill level of participants in this investigation. As a result of participation in regular physical education classes, the actual ability of participants with mild MR may have improved and the previous differences in strength and skill between

persons with and without MR may have been reduced. This reduced difference in actual ability may have increased the amount of success achieved by participants with MR, in turn increasing perceived basketball competence. The increase in perceived competence and the improvement in actual basketball competence may reflect the positive relationship between perceived and actual ability in the push pass for accuracy and the ranking of basketball as a preferred sport to play.

The lack of significance in the relationship between perceived and actual competence on the speed dribble may be related to the delayed performance in running speed and agility of persons with MR (Rarick, Widdop, & Broadhead, 1970). These limitations in skill may be reflected in the lack of a relationship between perceived dribbling ability and the ranking of basketball as a preferred sport to play. Results of a study by Haywood (1978) found that for the speed pass test, the ball-handling performance of participants between the ages of 9 and 13 years improved with age and experience. This researcher also found improvements in performance when participants used a junior size basketball rather than a regulation size basketball. An additional explanation for the lack of significance between perceived and actual competence on the speed

dribble may involve the quality of the ball. Although a standard basketball was used, participants commented that the grip on the ball was poor. Therefore, the skill level of participants, as well as the size of the ball and/or the condition of the ball, may have influenced performance on the speed dribble task, thereby reducing the significance of the relationship between perceived and actual dribbling ability. Although a positive relationship was found between actual dribbling ability and the ranking of basketball as a preferred sport to play, improvements in the quality and adjustments of the size of the ball may help to strengthen the relationship between actual competence, perceived competence, and the ranking of basketball as a preferred sport to play.

The free throw shooting task requires elements of strength and often is used as a measure of distance shooting performance. On tests of strength, persons with MR may lag anywhere from one to three years behind the standards for children without MR (Francis & Rarick, 1960). Participants in this study, therefore, may have lacked some of the strength needed to propel the ball to the 10 foot high basket (Chase et. al., 1994; Haywood, 1978). This lack of strength may have influenced the relationship between perceived shooting ability and the desire to play

basketball. Gabbard and Shea (1980) found that 60 fifth-grade boys (M=10.6 years) performed the free throw shooting task more efficiently when the basket height was set at 9 feet instead of the standard 10 foot basket. The potential for participants to practice this skill less as a result of the delay in strength may support the negative relationship between actual shooting skill and a person's desire to play basketball.

Relationship between MR and Perceived Competence

Participants in this study presented a positive sense of perceived competence toward basketball. This may be explained using Harter's theory, in that the level of difficulty involved with the passing, jumping, dribbling, and shooting tasks may have provided an optimal challenge through which participants could achieve success. Previous positive experiences in basketball also may have influenced perceived competence and helped participants develop internal perceptions of control. Through these positive experiences, intrinsic pleasure for participating in basketball may have been enhanced, thereby increasing the competence motivation of these adolescent boys with MR toward continued participation in basketball.

Participants in this study demonstrated high perceptions of basketball competence which is believed to lead to greater levels of intrinsic motivation. Harter and Zigler (1974) found that participants between the ages of six and eight years without MR demonstrated higher levels of intrinsic motivation than participants with MR. Silon and Harter (1985) found that because of the cognitive limitations of children with MR, they do not make distinctions about specific domains (i.e., physical, cognitive), and tend to be more dependent on external structures and guidance from others. The findings from this investigation are not supported by those of Harter and Zigler (1974) and Silon and Harter (1985). Results from this investigation suggested that adolescents with mild MR between the ages of 12 and 15 years may have developed the cognitive skills necessary to compare themselves to their peers, to internalize their own standards for success, and to establish their own mastery goals. Given positive reinforcement or approval for independent mastery attempts in past experiences in basketball, participants in this investigation may be relying less on external approval and more on their internalization of ability for success. These internalizations may increase competence motivation toward continued

participation in basketball.

Methodological explanations for these results may involve the quality of the pictures and the way participants used the pictures to determine competence. The pictures of the passing and jumping tasks may have better illustrated the requirements of the actual basketball test than the depictions of the dribbling and shooting tasks. In addition, participants were eager to select either "good" or "very good" as responses to each of the pictures. Several participants had to be told to listen to the description of the picture before making their decision. Participants' eagerness to respond may be due in part to their desire to play basketball, their boredom with the explanation of the pictures, and/or the inappropriateness of the pictorial version for persons with MR in this chronological and corresponding mental age range.

Results of this study indicated that adolescents with mild MR may be more like their peers without MR with regard to the accuracy of their perceptions of ability in basketball than originally anticipated. With age, and the increasing use of social comparisons adolescent boys with mild MR may have developed the cognitive strategies to accurately evaluate their ability in basketball. The tools used in this investigation to evaluate

perceived competence may have enabled participants to overestimate their basketball ability. The pictorial scale may not have been the most effective means by which to assess perceived basketball competence. It may be important, therefore, to test adolescents with mild MR according to their chronological age rather than focusing primarily on their mental age.

Sport Preferences

The subjects' desire to play soccer, baseball, and basketball may reflect the inclusion of these sports in many physical education curricula. Baseball and basketball games are commonly played at school during the lunch hour, are frequently seen on television, and results may be discussed within one's peer group. The prominence of baseball and basketball athletes as role models in this society helps to enhance the appeal of these sports for children and adolescents. The high ranking of horseback riding as a preferred sport to play was unexpected. When asked if they had ever had an opportunity to go horseback riding, most participants said no; however, they indicated that they thought it would be fun. The glamor and high social status associated with horseback riding, the perceived lack of difficulty involved in horseback riding, and the opportunity to achieve

success may be influencing factors on one's desire to participate.

The perceived difficulty and fear of volleyball and track and field or a perceived lack of fitness or ability in skills such as running and jumping (Francis & Rarick, 1960; Rarick, Widdop, & Broadhead, 1970) may be related to the lower preference for playing volleyball and track and field among participants with MR in this investigation. Participants in this study may have viewed these sports as being difficult to play, consequently decreasing their opportunity to achieve success. Participants may also have received a lack of reinforcement and/or disapproval for independent mastery attempts at volleyball and track and field in the past, thereby increasing their dependence on adults for reinforcement. This fear of failure and/or lack of reinforcement may have resulted in anxiety toward and a decrease in desire to play volleyball and track and field. Explanations for the chosen preferences are, or course, mere speculation. Further research is necessary to determine the reasons behind the particular preferences, thereby providing practitioners with ways to increase performance in a wider variety of activities.

Participants indicated a preference to play alone at home or with the family, in the community (at the park or the YMCA), and with friends at

school. When asked why they chose these groups, some participants indicated it was because they could play for a long time and they could win. The selection of these groups with which to play may accurately reflect participant's perceptions of their ability, the optimal level of challenge, and opportunity for success. These realistic perceptions may increase intrinsic pleasure and motivation to continue participating in sport. These same perceptions of ability, challenge and success may be unrealistic when playing on more competitive teams or with more highly skilled players. When playing with these latter groups inaccurate perceptions of competence may lead to increased anxiety about performing, thereby negatively affecting one's performance and motivation to continue participating in sports. The lower ranking of volleyball and track and field may be reflected in participants desires to play alone at home or with the family. Volleyball and track and field are sports that require the participation of others in order to gain skill and proficiency. The desire to play alone at home or with the family may not be an adequate group through which to develop skills in volleyball or track and field.

Participants in this investigation rated competence-related motives such as "to improve skills," and "enjoy competition," as well as team affiliation motives including "to be with friends" as the main reasons they participate in sport. An additional reason for participation was "to have fun." Some of the less important reasons for playing sports given by participants in this study were extrinsic reasons such as "parents want me to play," "enjoy travelling," and "to win a trophy or a medal." Klint and Weiss (1987) found that children high in perceived physical competence rated skill development reasons and team affiliation reasons as more important than persons with low perceived physical ability. Reasons for playing sports identified by participants in this study were similar to the reasons identified by the participants with high perceived competence without MR in the studies by Gould, et al., (1982) and Klint & Weiss (1987).

A relationship may exist between the sports adolescents with MR prefer to play, the teams/groups on which they prefer to play, and their reasons for playing sports. Adolescents with MR may be more likely to play on teams with and/or against people whom participants can demonstrate their abilities and achieve success. These feelings of

competence may influence a person's motivation to continue playing to further demonstrate their competence and improve their skills. One's preferences and motives toward participating in sports may change depending on the participant's perception of his competence in a particular sport, on the opportunity for success, and on the ability of the other participants.

Implications for Practitioners

Given that the goal of many practitioners is to help children develop a realistic sense of their abilities, information on the relationship of perceived and actual competence and their influence on sport participation preferences and motives can be quite revealing and meaningful to the regular and adapted physical educator (Harter & Pike, 1984). If a child's sense of self-regard is not congruent with his or her actual competence, program efforts can focus on helping to effect change in perceived competence of the child, whether it be to increase or attenuate perceptions in accordance with actual competence (Harter & Pike, 1984). Equipment modifications and practice conditions as well as particular strategies that target the enhancement of self-perceptions, can be established, and a program can be implemented and then evaluated. With

this information, educators can be more knowledgeable and effective in implementing programs that will meet the needs of participants with MR, thereby motivating them and encouraging them to maintain an active and healthy lifestyle.

Recommendations for Future Research

Little is known about the construction of the perceived competence of persons with MR, and its affect on competence motivation (Ulrich & Collier, 1990). Future research questions that can stimulate systematic research, and have implications for theory building and pedagogy include:

1. How are perceptions of physical competence in persons with MR influenced by the type of experience and the degree of success one has achieved at a particular sport? As indicated by Harter's theory (1978) optimal challenge and success has a direct influence on perceived competence and internal or external perceptions of control. In answering this question, therefore, it is important to look not only at years of athletic involvement and participation and drop-out patterns, but also at how the time spent in sport affected one's perceived competence.

2. How does affect influence a person with MR's perceptions of competence? Harter indicated that the more positive a child's affective response to his or her perceived competence, the more he or she is intrinsically motivated to complete a task. The more negative a child's affective response to his or her perceived competence, the more anxiety the child will experience in mastery situations, and the less motivated the child will be to maintain his or her motivation towards a task. When examining perceived competence, it is important to understand the participant's feelings about the sport and about their performance. These feelings also may influence the quality of one's experience in sport thereby changing their motivation toward participation in sports.

3. How do social comparisons influence perceptions of competence of persons with MR in relation to others in the same sport? As indicated by Harter (1978) with increasing age, children begin to rely more on peer comparisons and internal standards for success when determining their competence. Feltz and Brown (1984) suggested that the use of peer comparisons may decrease in importance as participants become more capable of evaluating their competence in relation to past experience. When evaluating one's perceived competence, therefore, it is important to

understand the frame of reference that is being used to judge one's abilities.

4. How do perceived social competence, and perceived physical competence interact and influence ones motivation to participate in sport? The way a person views him/herself in relation to his/her peers may influence one's perceptions of ability and motivation to participate in sport. Perceived social competence also may influence the extent to which one uses his/her peers and the nature of the comparison group being used to determine perceived ability.

5. In which sports do boys and girls with MR perceive themselves to be most proficient? An understanding in this area can help physical educators develop a curriculum so as to increase the repertoire of abilities and to continue to perfect the existing skills of students with MR. By increasing and improving skills, one is expanding the opportunity for students with MR to be more physically active throughout their lives

6. What affect does equipment modification have on perceptions of ability and performance for persons with MR? Research has indicated that ball size, ball weight, distance, as well as an individual's physical size and strength may influence performance in children (Chase et al., 1994; Gabbard & Shea, 1980; Haywood, 1978; Lindeburg & Hewitt, 1965; Wright, 1967). When developing a curriculum and individual lesson plans, it may be important for regular and adapted physical educators to understand the effect equipment and physical stature have on perceptions of ability and motivation to participate in sports.

7. What is the relationship/link between skill development and participation? Further research is needed to understand whether it is actual skill or the confidence gained from success at mastery attempts that motivates persons with MR to participate in sport and maintain an active and healthy lifestyle. An understanding in this area may help practitioners to plan a curriculum/program to meet the needs of, and increase motivation of participants with MR to participate in sports.

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APPENDICES

APPENDIX A

INFORMED CONSENT FORM

INFORMED CONSENT FORM

A persons' beliefs about his/her physical ability can influence motivation to participate in sport and/or physical activity. The purpose of this study is to understand what adolescents with mild learning difficulties think about their basketball skills and to compare their perceptions with their actual ability levels in basketball. Your child will be asked to: (1) respond to 4 pairs of pictures of people playing basketball by indicating which picture (good skill or bad skill) is most like them; (2) participate in 4 basketball activities: dribble a basketball around 5 traffic cones, shooting 20 basketballs into the basket, jumping as high as they can, and passing 10 basketballs to a target; and (3) answer some questions about why he participates in sport and/or physical activity. Your child will be asked to participate only once for a total of 20 minutes. There are no anticipated risks as a result of participation in the above skills. Your child's participation is voluntary. Your child may choose not to participate in any part of the study or withdraw from the study at any time without any penalty or loss of confidentiality.

The study and my child's part in the study have been defined and fully explained to me and I understand this explanation. I have been given the opportunity to ask questions and my inquiries have been answered to my satisfaction. I understand that my child's participation in this study does not guarantee any beneficial results to me or my child. At the completion of this study, a summary of the results will be available to you upon request.

I understand that if my child is injured as a result of participation in this research project, Michigan State University will provide emergency medical care if necessary. I further understand that if the injury is not caused by the negligence of MSU, that I am personally responsible for the expense of this emergency and any other medical expense incurred as a result of this injury.

I understand that my child will not be identified by name in any publications or presentations related to this project. The invest0igator will ensure confidentiality of the data during its collection, storage, and interpretation. Within these restrictions, results of this study will be made available to me at my request. I further understand that I am free to withdraw my consent and discontinue my child's participation at any time.

INFORMED CONSENT FORM - PAGE 2

If I have any questions at any time during the testing or afterward regarding my child's participation in this study, I am to contact Deborah Shapiro, a master's degree student in the Department of Physical Education and Exercise Science, who is responsible for this study, or Deborah's faculty advisor, Dr. Gail Dummer.

Deborah Shapiro
W645 Owen Hall
Michigan State University
East Lansing MI 48825
Phone: (517) 355-3954
E-Mail: Shapiro9@msu.edu

Gail M. Dummer
132 IM Sports Circle
Michigan State University
East Lansing, MI 48824-1034
Phone: (517) 355-4744
E-Mail: 19410gmd@msu.edu

I, _____ agree to allow my child,_____ to participate in the study of perceived and actual basketball skill to be conducted by Deborah Shapiro.

I, _____ do not agree to allow my child, _____ to participate in the study of perceived and actual basketball skill to be conducted by Deborah Shapiro.

_____ _____

Date Parent/Guardian's Signature

_____

Participant's Signature

APPENDIX B

SPORT PARTICIPATION SURVEY

Sport Participation Survey

1. Which is your favorite sport to play?

volleyball	_____
soccer	_____
football	_____
basketball	_____
baseball/softball	_____
swimming	_____
track and field	_____
tennis	_____
horseback riding	_____
bowling	_____

2. Which is your favorite team or group to play with?

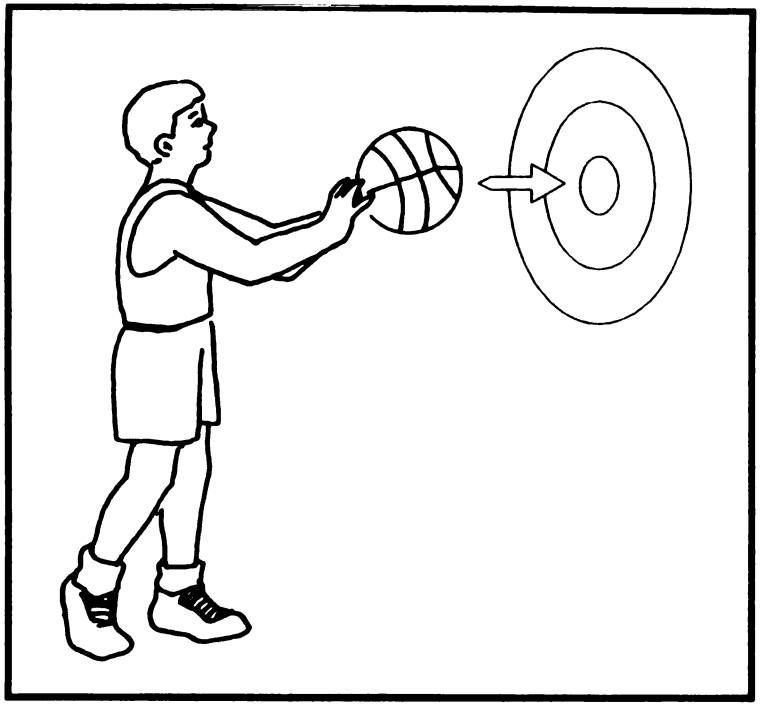
competitive school team (varsity)	_____
fun school team (intramural)	_____
special olympics	_____
community recreation	_____
friends at home	_____
friends at school	_____
alone or with family at home	_____

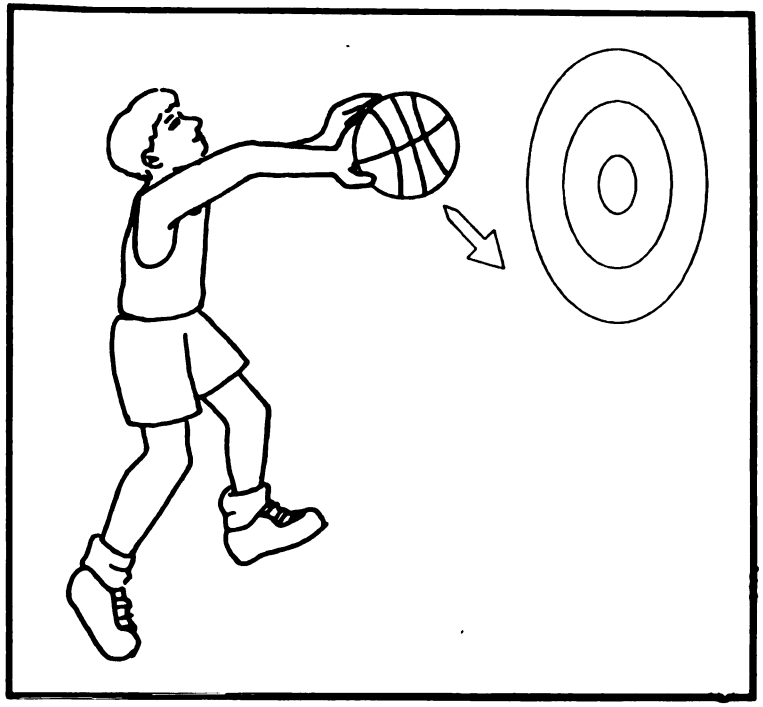
3. What's your main reason for playing sports?

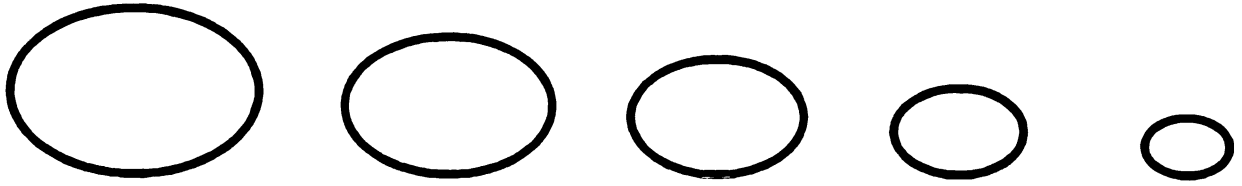
to improve skills	_____
to be with friends	_____
enjoy the competition	_____
parent or family wants me to play	_____
to have fun	_____
to learn new skills	_____
to win a trophy, medal	_____
to meet new friends	_____
to get exercise	_____
enjoy travelling with the team	_____

APPENDIX C

PICTORIAL SCALE OF PERCEIVED BASKETBALL COMPETENCE







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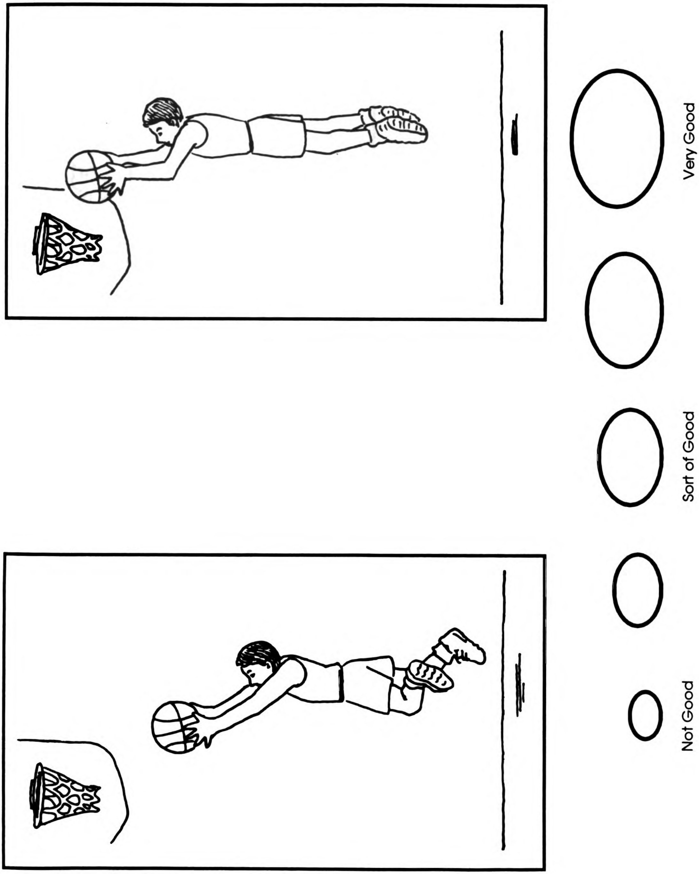
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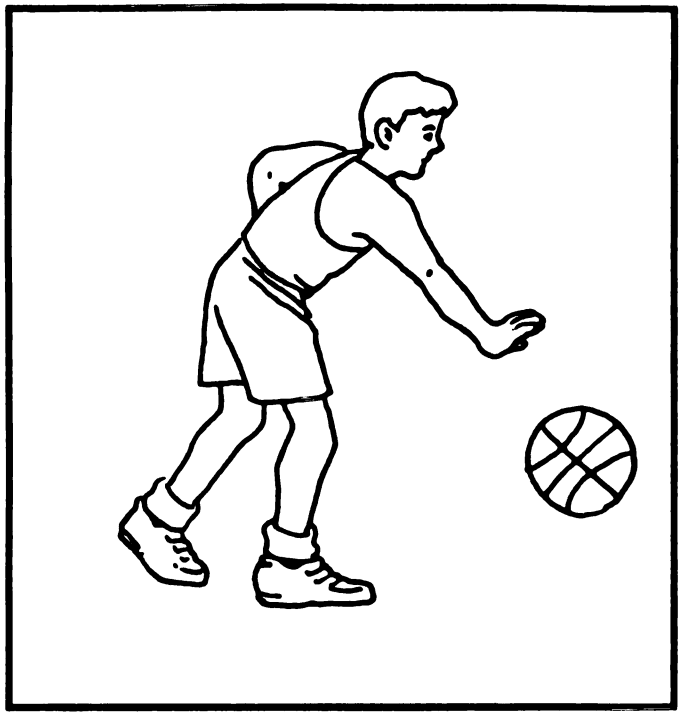

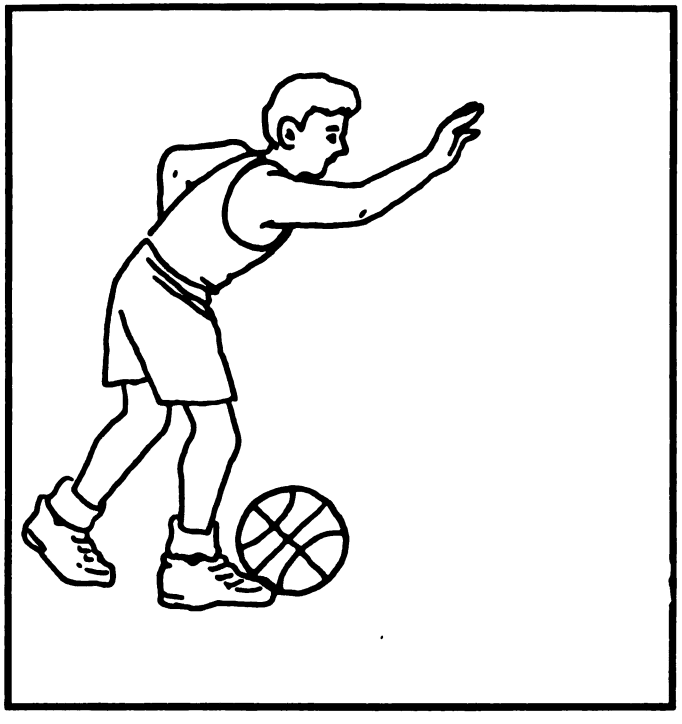

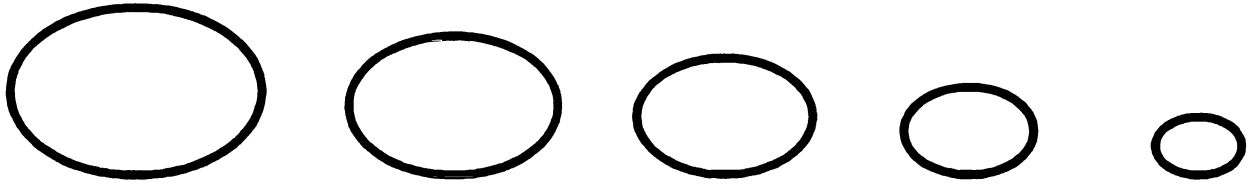

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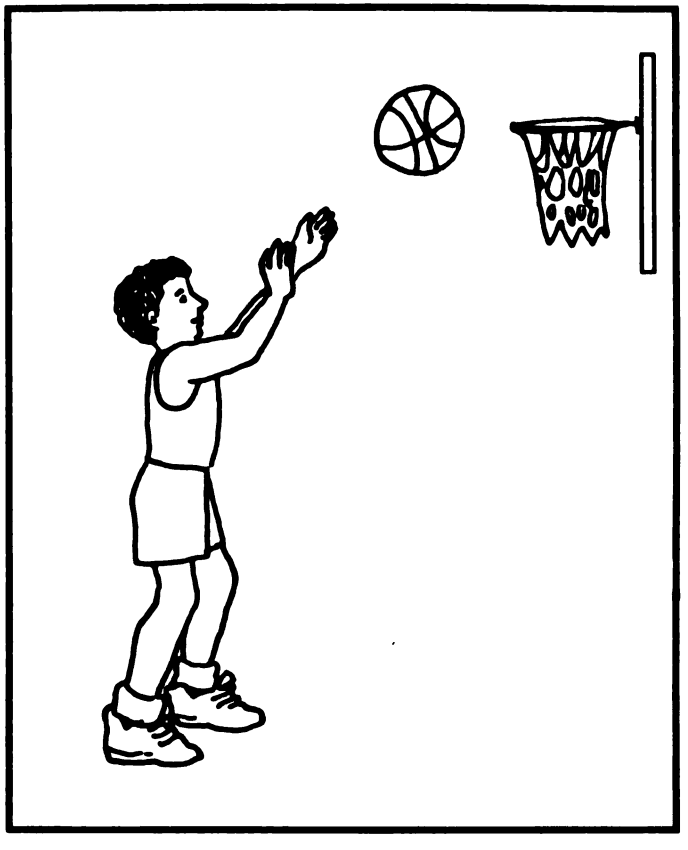

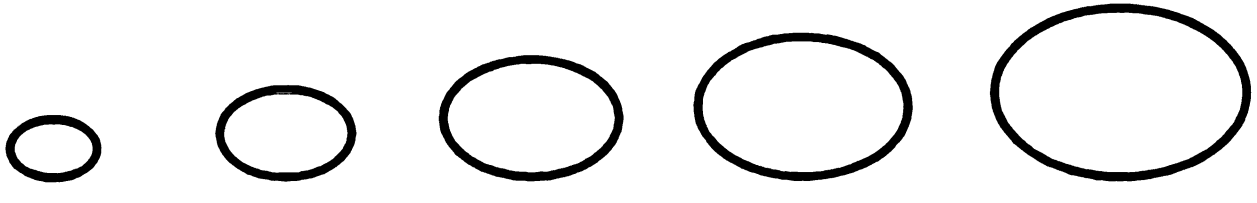

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APPENDIX D

PILOT STUDY RESULTS

Pilot Study

Purpose

The purpose of the pilot study was to determine the validity, reliability, appropriateness of testing procedures, and amount of time required to complete the sport participation survey, the pictorial scale, and the basketball skills tests.

Methods

Subjects

Subject characteristics. The sample consisted of 10 adolescent males with mild MR between the ages of 12 and 15 years (M= 14.1 SD=1.04) and were in grades six through eight. Participants were selected from regular education settings from rural midwest communities to participate in this study. All participants qualified for special education services according to federal and state definitions of MR, and had individual education plans on file at their schools. Participants were further identified by their special education teachers as educable mentally

impaired (EMI) with IQs ranging from approximately 55 to 70 points. The participants had no identifiable physical, emotional, or behavioral disabilities which would limit their ability to participate in this study.

Subject selection. Pilot study participants were recruited by using the following procedures.

(1) Permission was received from principals, and special education teachers to conduct research involving students in their schools.

(2) The student investigator met with each special education teacher and all eligible participants to distribute information and informed consent forms to students who met the selection criteria.

(3) Adolescents whose parents responded positively to the informed consent forms were eligible to participate in this study. A total of 11 permission forms were distributed. A total of ten individuals returned their forms granting permission to participate in this study. Each of these ten participants completed the full battery of tests. Only one student returned his form denying permission for him to participate in this study.

Informed consent. The investigator obtained approval from the University Committee on Research Involving Human Subjects (UCRIHS) to conduct this study (Appendix A). Prior to administration of the test battery, each parent and subject was provided with an explanation of the tests, the testing procedures, and the subject's rights as a participant in this study. The informed consent form was signed and returned to the investigator prior to data collection. Subjects could withdraw from the study at any time. Furthermore, there were no anticipated psychological or physical risks of injury to the subjects as a result of participation in this study.

Instrumentation

The sport survey (Appendix B) was developed by the author to assess participants' interests in playing ten selected sports, their preferences for seven teams/groups with whom they could play, and the importance they assigned to each of ten reasons for playing sports. The ten sports represented lifetime activities commonly offered in school, recreation, and neighborhood settings. The seven sport participation groups also were commonly found in school, recreation, and neighborhood settings. The ten reasons for playing sports were selected from studies of

adolescent participants in youth sport swimming and gymnastics (Klint & Weiss, 1986; Gould et. al, 1982).

Participants completed the Pictorial Scale of Perceived Basketball Competence to determine their perceived ability in basketball skills including passing, jumping, dribbling, and shooting. The pictorial scale was a modification of the Pictorial Scale of Perceived Competence and Social Acceptance (Harter & Pike,1984). Harter's original test assessed physical skills including climbing, skipping, jumping rope, and swinging. The pictorial scale used in this investigation incorporated pictures of an adolescent boy performing basketball skills in passing, jumping, dribbling, and shooting. Paired pictures representing good and bad performance for each of the four basketball skills was presented to the participant with some information describing each pair of pictures. Each pair of picture plates was associated with five circles ordered incrementally by size. Each circle represented a score between one and five ("not good" and "very good" respectively) on a five point Likert-type scale (Appendix C).

The AAHPER basketball skills test was used in this study. From this test, four skills were selected (push pass for accuracy, jump and reach, speed dribble, and free throw shooting) for use in this investigation

to determine basketball ability.

Procedures

Each of the 10 pilot study participants were tested twice on each of the three tests within a two-week period of time. The participants in the pilot test were not involved in the subsequent thesis research, and the results from pilot testing were not included in the final analyses presented in Chapter Four of this thesis.

Prior to testing, the investigator took each participant out of class and walked with him to the gym so that the subjects felt comfortable with the investigator, and the testing environment and procedures could be explained. Each participant was told that he would spend 10 to 15 minutes talking about sports, teams, and why he plays sports, and play a basketball picture game. Following this discussion, the participant was told he would have a chance to play basketball. Participants were told that they would be with the investigator for 30 minutes after which time they would return to their class.

The sport survey was administered first to each participant followed by the pictorial scale and the basketball skills test. The investigator read each question and corresponding list of responses on the sport survey to

each participant. Subjects indicated their preferences by putting the number "1" next to their first choice, the number "2" next to their second choice, and so on, until all responses were ranked. As an answer was given, it was crossed off the list to avoid confusion and to force participants to make a decision based on the remaining choices. The question with the remaining answers were re-read to the participant.

To complete the pictorial scale, each participant was told to look at the pictures of the boy playing basketball, to listen to the description given about each picture, and to indicate which picture best illustrated his basketball ability by marking an "X" in the appropriate circle (see Appendix C). The participants perceived competence on each skill was later recorded as a number between one and five, with five being the highest score ("very good" at that skill) to one being the lowest score ("not good" at that skill).

Participants were tested on four skills from the AAHPER Basketball Skills Test for Boys which corresponded with the skills illustrated on the pictorial scale. These skills included the push pass for accuracy, the jump and reach, the speed dribble, and free throw shooting. To complete the push pass for accuracy, participants were required to complete 10

consecutive push/chest passes from a distance of 25 feet to a standardized target consisting of three concentric circles (see Appendix E). Participants were given three points if they hit the inner circle, two points if they hit the middle circle, one point if they hit the outer circle, and zero points if they missed the target.

Participants were unable to hit the target from a distance of 25 feet. To accurately hit the target, participants used an overhead throw on most trials rather than a push/chest pass. To achieve the goal of a push/chest pass for accuracy, therefore, participants were moved closer to the target. Faculty and graduate students knowledgeable in coaching and instructing youth sport basketball indicated that a distance of 25 feet was not practical for a push/chest pass for accuracy. This panel of experts indicated that a distance of 20 feet or 15 feet would be more appropriate for this task and more indicative of what would be required in a real game situation. Participants were asked to stand behind the distance marking lines, to release the ball with two hands, and to pass the ball ten times.

For the jump and reach task, a tape measure was attached to the wall to measure the height of the participant's jump. A verbal and physical demonstration was provided for each participant. Participants

were told to stand next to the wall and reach their hand up as high as they could. They were then told to jump as high as they could and hit the tape measure. The test administrator stood on a chair in front of and slightly to the side of the participant so that an accurate measurement could be determined. The participant took three jumps. The first jump allowed the participant to practice, and provided a frame of reference for the investigator to measure the remaining two jumps.

For the speed dribble, a series of six cones were arranged in single file in a straight line (Appendix E). The participant stood behind the starting line five feet from the first cone. On the signal "go" the participant dribbled the ball in and out of the six cones and returned to cross the starting line. Participants were provided with both a physical and verbal demonstration of the skill. Each participant was given a trial before being timed. Two timed trials were taken. If the participant lost control of the ball or if the ball hit a cone, the trial ended, and an additional trial was taken until two successful timed trials were recorded. Participants were given time to rest between trials. Positive feedback and encouragement such as "you're doing great," "excellent," and "come on, faster," was given to each participant throughout the trial. Upon the

completion of the first trial, each participant was shown his time and challenged to go faster on subsequent trials.

The free throw shooting test required participants to shoot a ball to the basket (ten feet high) from the free throw line (a distance of 15 feet). Many pilot study participants had difficulty getting the ball in the basket from this distance. Faculty and graduate students knowledgable in coaching and instructing youth sport basketball suggested that many adolescent males between the ages of 12 and 15 may not have the upper body strength or the technique to shoot the ball to the basket from a distance of 15 feet. This lack of strength also was suggested by researchers as a reason for modifying youth sport basketball skills (Chase et al., 1994; Gabbard & Shea, 1980). Pilot study participants, therefore, were required to shoot the ball from a distance of ten feet away from the basket. The scoring procedure for the free throw shooting task also was changed. Original scoring gave one point if the ball went into the basket and zero points if the ball did not go in the basket. The modified scoring system allotted three points if the ball went into the basket, two points if the ball hit the rim of the basket or the backboard, one point if the ball hit the net, and zero points if the ball hit nothing.

Data Analyses

A panel of experts assessed content validity of the sport participation survey, the pictorial scale and the selection of basketball skill test procedures. Test-retest reliability (Norusis, 1993) was used to determine the reliability of the pictorial scale and the skills test.

Results and Discussion

Sport Participation Survey. No changes were made to the selection of sports, teams/groups or reasons for participation. The selection of items appeared to be sufficient to determine sport participation preferences and motives for participation in sports. Changes were made to the wording of some of the groups/teams to elicit better comprehension of the items. For example, "with friends in the neighborhood" was changed to "with friends at home," and "varsity," "intramural," and "community recreation" were more clearly defined as a competitive school team, a fun school team, and at the park or the YMCA respectively. The format of the question regarding reasons for participation was altered such that it consisted of one long list rather than two shorter lists. With the latter format, participants tended to rank order the choices in one list before looking at the other list. The use of one long list required participants to

look at all the choices before making a decision.

This test appeared to be a valid measure of sport participation preferences and motives. Participants were able to make decisions based on the selection provided. No participants asked about other options in addition to those provided. Figures 5 through 10 illustrate participant responses on the sport participation survey.

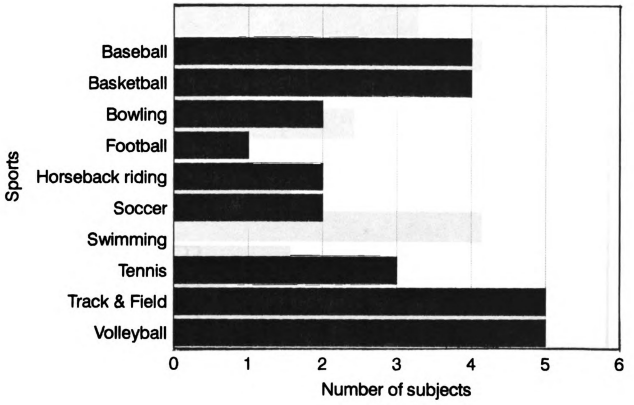


Figure 5. Pilot Study Sport Participation Preferences from Test 1

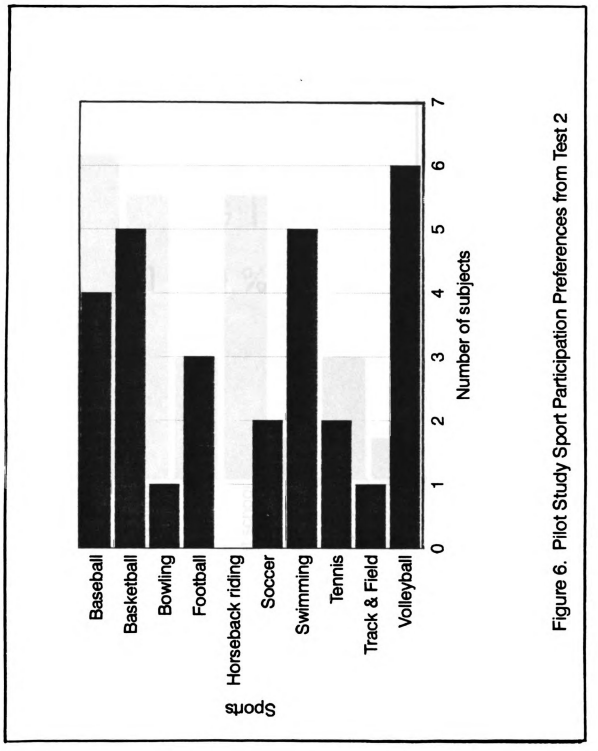


Figure 6. Pilot Study Sport Participation Preferences from Test 2

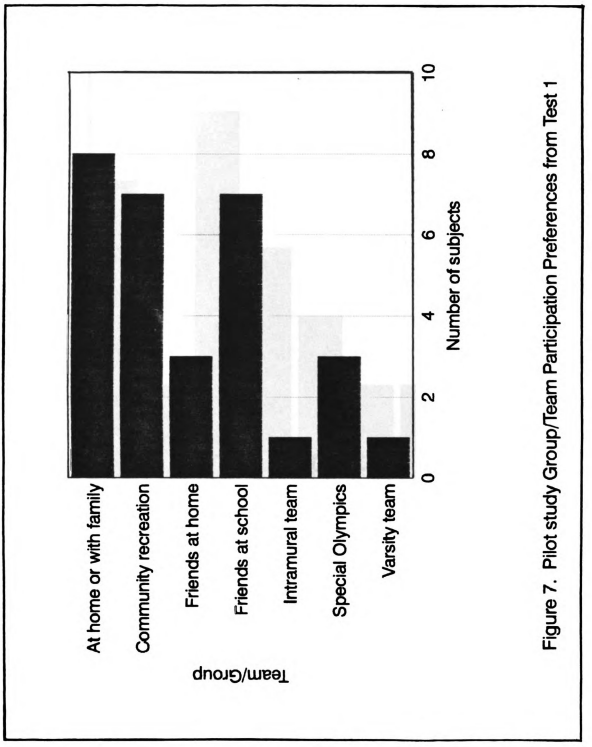


Figure 7. Pilot study Group/Team Participation Preferences from Test 1

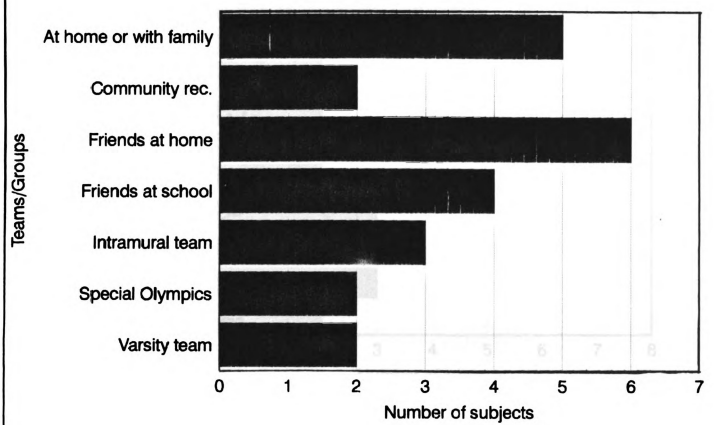


Figure 8. Pilot Study Team/Group Participation Preferences from Test 2

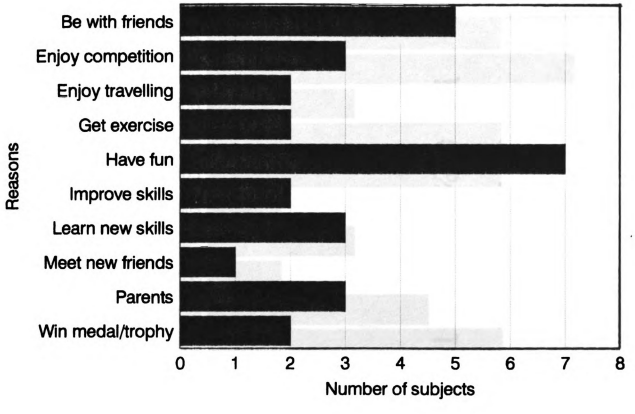


Figure 9. Pilot Study Reasons for Participating in Sports from Tests 1

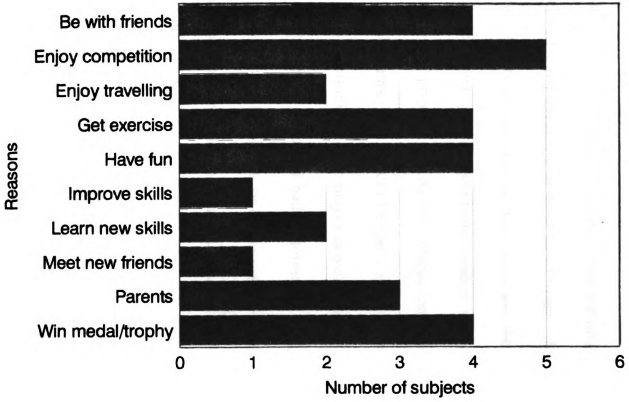


Figure 10. Pilot Study Reasons for Participating in Sports from Test 2

Pictorial Scale of Perceived Basketball Competence. No changes were made to the pictures depicting good and bad passing, jumping, dribbling, and shooting technique. Each picture clearly illustrated each of the four basketball skills. Validity of the pictorial scale was assessed by a panel of faculty members in sport psychology who were familiar with Harter's theory of competence motivation and the corresponding assessment measures, and graduate students who were knowledgeable in coaching and providing basketball instruction to athletes on youth basketball teams. This panel of experts provided information on the body and limb positioning of the player depicted in the pictures, accuracy of the pictures to depict good and bad performance, and the orientation of the player in relation to the net, or the target. This information was used to correct and improve the illustrations for each of the four basketball skills. Reliability of the pictorial scale was determined through a test-retest reliability analysis (Norusis, 1993). Test-retest reliability scores for the pictorial scale (alpha=.94) support the reliability of this scale as an effective means by which to assess perceptions of basketball competence among adolescent males with mild MR. Table 3 illustrates the scores on the pictorial scale."

Table 3

Performance of Pilot Study Participants on the Pictorial Scale of Perceived Basketball Competence

Basketball Skill	1st Test		2nd Test		Correlation between Tests 1&2	
	M	SD	M	SD	r	p
Push Pass for Accuracy	4.20	.91	4.10	.88	.52	.06
Jump and Reach	3.80	1.32	3.80	1.40	.94	.00
Speed Dribble	4.20	1.48	4.40	.84	.55	.05
Free Throw Shooting	4.00	.82	3.90	.99	.96	.00

Basketball skills test. No changes were made to the jumping and dribbling tasks outlined in the AAHPER Basketball Skills Test for Boys Procedure Manual. Modifications were made, however, to the passing and shooting tasks. As discussed in the instrumentation section, changes were made in the passing skill to decrease the distance of the pass from the original distance of 25 feet to a distance of 15 feet. Changes were made to the distance and the scoring of the free throw shooting task. As outlined in the instrumentation section, the distance was decreased from

15 feet to 10 feet. The height of the basket remained at ten feet. The scoring system was modified to recognize all shots taken on the basket, rather than just the shots that went in the basket.

Validity of the basketball skills test was assessed by faculty and graduate students who were knowledgable in youth sport basketball. This panel of experts provided feedback on appropriate distances for the passing and shooting tasks, as well as the relevance of these distances to the skills performed in actual game situations. Reliability of the basketball skills test was determined using test-retest reliability analysis. Reliability scores for the push pass for accuracy from a distance of 15 feet was .92. Test-retest reliability scores for the speed dribble, jump and reach, and free throw shooting were .94, .98, and .74 respectively.

Raw scores on the basketball skills test can be found in Table 4. Means, standard deviations, and pearson product moment correlation coefficients were calculated for each basketball skill on Pilot Tests 1 and 2 (see Table 5). The high correlations on each of the four skills indicated support for this test as an accurate measure of basketball performance for adolescent males with mild MR.

Table 4

Pilot Study Raw Scores on the Basketball Skills Test

Test No. 1				
Subject No.	Pass 15 Feet (points)	Jump & Reach (inches)	Speed Dribble (seconds)	Shooting (points)
1	19	9	13.63	48
2	28	9.5	16.28	43
3	27	12	9.85	49
4	N/A	7	15.69	48
5	N/A	12	14.31	47
6	N/A	15	10.81	48
7	29	13	10.50	54
8	19	14	13.31	45
9	20	4	15.47	40
10	25	11	11.81	43
Test No.2				
Subject No.	Pass 15 Feet (points)	Jump & Reach (inches)	Speed Dribble (seconds)	Shooting (points)
1	20	8	12.94	41
2	26	8	16.65	44
3	28	12	9.65	50
4	26	8	12.32	49
5	18	11	13.15	47
6	20	16	10.78	46
7	30	12	9.78	48
8	15	14	13.44	51
9	23	3	15.07	38
10	21	11	12.03	42

Note: N/A = no score was available

Table 5

Scores on the Basketball Skills Test

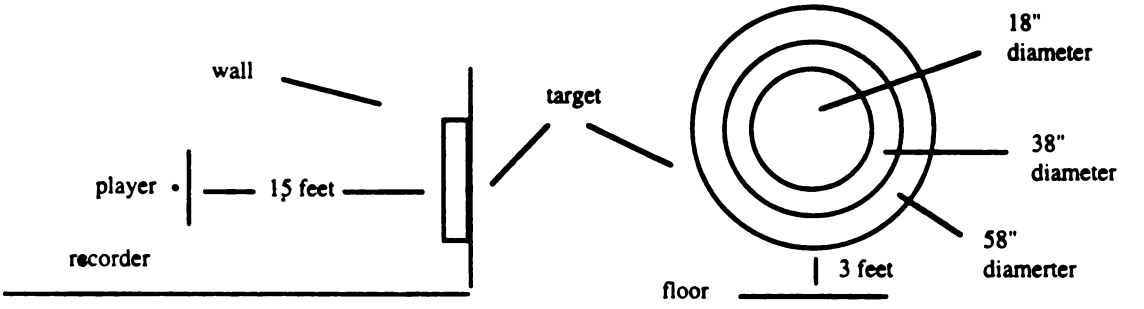
Basketball Skill	1st Test		2nd Test		Correlation of tests 1 & 2	
	M	SD	M	SD	r	p
Push Pass from 15 Feet	24.00	4.55	22.70	4.74	.85	.007
Jump and Reach	10.70	3.35	10.30	3.68	.97	.000
Speed Dribble	13.10	2.32	12.60	2.21	.89	.000
Free Throw Shooting	46.50	3.9	45.60	4.20	.59	.030

APPENDIX E

MODIFIED AAHPER BASKETBALL SKILL TEST FOR BOYS PROCEDURAL MANUAL AND SCORE SHEET

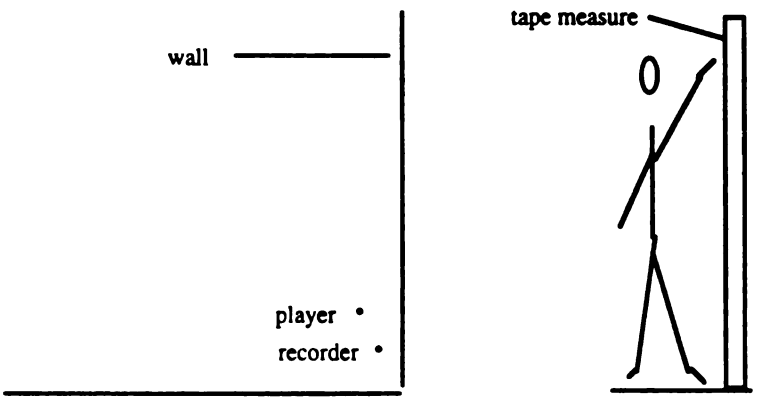
MODIFIED AAHPER BASKETBALL SKILLS TEST FOR BOYS PROCEDURAL MANUAL

Push Pass for Accuracy



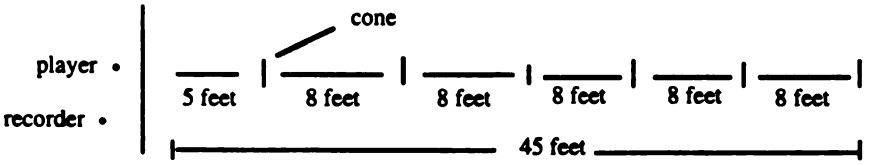
Purpose	To measure the accuracy with which a player can make a two handed push pass at a target.
Equipment	Standard inflated basketball, a target painted or marked on a piece of paper or canvas, chair, tape.
Description	The player with a basketball stands behind a line 15 feet from and parallel to the face of the target hung on the wall. The player uses a two-handed push pass (chest pass) and endeavors to hit the center of the target.
Rules	1. Passes must be made with both feet behind the passing line 2. The two-handed push or chest pass must be used 3. Three practice shots are taken 4. Ten consecutive passes are taken
Scoring	Three points are scored for balls hitting in the center circle, two points for balls hitting in the middle circle, and one point for balls hitting in the outer circle. Hits on a line count as in the next higher area. Points made on each pass should be recorded. The maximum possible score is 30 points.

Jump and Reach



Purpose	To measure the height of a player's jump over and above his reach.
Equipment	A level floor, a smooth wall surface, tape measure, chair, tape.
Description	The player stands perpendicular to the wall with his knees straight and feet flat on the floor. He reaches up as far as possible. The reach is recorded. The player then crouches, swings his arms and jumps as high as possible. The height of the jump is recorded. The distance between the initial reach and the final jump is measured and recorded.
Rules	1. The player starts his jump from a stationary position 2. The jump must be made from both feet without a hop 3. One practice is taken 4. Two trials are recorded
Scoring	The score is the distance between the mark at the top of the reach and the mark at the top of the jump. Record the distance to the nearest inch. The distance of the jump on two separate trials is recorded. The score is the best of the two jumps.

Speed Dribble



Purpose

To measure the speed with which a player can dribble a ball around obstacles.

Equipment

Standard inflated basketball, stop watch, six traffic cones.

Description

The player stands behind the starting line with a ball in hand and on the signal "go" starts with a dribble on the right of the first cone and continues to dribble in and out alternately around the remaining five cones and returns to cross the starting line. The cones are arranged single file in a straight line so that the first cone is 5 feet from the starting line and the following cones are 8 feet apart, measured from the front of each cone. The overall distance from the starting line to the far edge of the sixth cone is 45 feet.

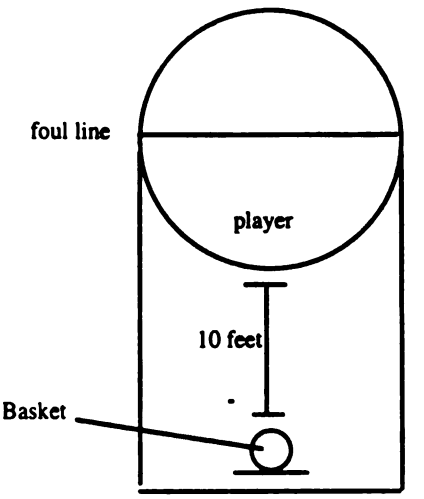
Rules

1. The ball may be dribbled with either hand
2. Legal dribbles must be used
3. The ball must be dribbled at least once as each cone is passed
4. If the ball hits the cone or the player loses control of the ball the trial is ended and an additional trial is added
5. one practice is allowed
6. Each player is allowed two trials

Scoring

The score is the time in seconds and tenths that it takes to dribble around the cones and back. Time is started on the signal "go" and stopped the instant the player crosses the starting line at the end of the trial. Two trials are timed and recorded. The best time of the two trials is the player's score on the test.

Foul Shooting



Purpose	To measure skill in shooting free throws from the dotted free throw line.
Equipment	Standard inflated ball, standard hoop.
Description	The player shoots from behind the center of the dotted free throw line. The player may shoot by any method preferred. Twenty shots are taken in series of five at a time. The player must leave the foul line at the end of each five shots and move around before continuing with his next series of shots.
Rules	1. Twenty shots are taken in all 2. The player may place his feet in any position behind the line 3. Three practice shots are taken
Scoring	Score three points for each shot made regardless of how the ball goes in the basket. Count two points if the ball hits the backboard but does not go in the basket, one point if the ball hits the net but misses the basket, and zero if the ball misses altogether. Record the score for each trial. The maximum possible score is 60 points.

MODIFIED AAHPER BASKETBALL SKILLS TEST SCORE SHEET

Name _____ Test Date _____

Number _____ Birthdate _____

Date	Trial 1	Trial 2	Trial 3
Age			
Grade			
Tests	score	score	score
Jump and Reach			
Dribble			

	0	1	2	3
Push Pass for Accuracy				

Total = _____/30

	Trial 1	Trial 2	Trial 3	Trial 4
Free Throw Shooting				

Total = _____ / 60