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Perceived Competence of Children with Visual Impairments

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Abstract: This study examined the perceptions of competence of 43 children with visual impairments who were attending a summer sports camp. It found there were meaningful differences in the perceived competence of the girls, but not the boys, after they attended the camp, and no differences in the perceptions of competence with age.

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Perceptions of competence, or the ways in which a person thinks about himself or herself, influence initiation and mastery attempts in various domains of achievement, including athletics, social acceptance, and physical appearance (Kosma, Cardinal, & Rintala, 2002). A child may perceive himself or herself as

having high ability in the social domain but low ability in the athletic or physical appearance domain (Weiss, 1984). Within a given domain, a person's goal is to improve skills, learn new skills, and demonstrate mastery of a task. Children with high perceptions of competence tend to exert more effort, persist longer, feel more in control, experience pride, and be intrinsically motivated to continue to participate (Roberts, Kleiber, & Duda, 1981; Weiss & Horn, 1990). In contrast, those who experience failure and develop lower perceptions of competence avoid participation, apply little effort and persistence, and demonstrate a negative affect in the form of anxiety and low achievement levels (Roberts et al., 1981; Weiss & Horn, 1990).

Researchers have found changes in perceptions of competence with age and gender. Changes in perceptions of competence with age reflect the greater ability of children to differentiate among luck, ability, and the difficulty of a task, as well as changes in the sources of information they use to judge their performance. With age, children rely less on evaluative feedback from parents and teachers and more on the opinions of their peers. Toward late adolescence, youths rely on internal performance criteria to make independent judgments of their competence, relying less on external information, such as feedback from others or test scores (Horn & Hasbrook, 1987; Horn & Weiss, 1991).

A meta-analysis of gender differences in perceptions of competence found that males perceive themselves as being higher in overall competence and more positive in estimating their competence than do females (Lirgg, 1991). Gender-linked movement tasks (sports or behaviors that are identified as belonging to male or female) have been found to mediate gender differences in perceptions of ability, with males displaying more confidence on masculine-type tasks—such as football or weight lifting—and females displaying more confidence in feminine-type tasks—such as ballet or gymnastics (Lirgg, 1991). The more that girls see sports as gender neutral or appropriate for girls, the more positive their perceptions of their competence are (Eccles & Harold, 1991).

In the contexts of sports and physical activity, participation is often a social activity involving groups of children, such as teams, friends, and clubs, and is viewed as a primary socializing environment for teaching children interpersonal skills and physical competencies (Weiss & Duncan, 1992). Children and youths with visual impairments (that is, those who are blind or have low vision) generally have fewer opportunities and incentives to engage in physical activities that provide the amounts and kinds of stimulation that are typical of sighted children, partly because of differences in physical appearance or poorer physical fitness, motor skills, and functional skills than their peers without visual impairments (Kef, 1997; Kroksmark & Nordell, 2001; Rosenblum, 1997;

Skaggs & Hopper, 1996; Sorensen, 1999).

Children who have difficulty performing sport and physical activity skills often have lower self-perceptions. These poor self-perceptions are likely to lead to a reduction in confidence in movement and often extend beyond the athletic domain, resulting in adverse psychosocial consequences (Bouchard & Tetrault, 2000). In addition, children who are visually impaired tend to have less extensive social networks and fewer friends than do their sighted peers (Robinson, 2002). Children with visual impairments have described schools as unfriendly, lonely places or as places where they are teased and ignored by other children (Nikolaraizi & De Reybekiel, 2001). Robinson (2002) found that children with visual impairments had low levels of perceived control over their ability to make and retain friends. As a result of poor physical fitness and motor skills, these children tend not to be included in groups or to withdraw from group activities, which contributes to greater feelings of social uncertainty, loneliness, and social dissatisfaction, and an inactive lifestyle (Kalloniatis & Johnston, 1994; Lieberman, Houston-Wilson, & Kozub, 2002; Lieberman & McHugh, 2001; Page, Frey, Talbert, & Falk, 1992).

There has been a noticeable absence of perceived competence theory in the study of disability and self-concept (Sherrill, 1997). The assessment of the perceived competence of children with visual

impairments is of critical interest from both a theoretical and a practical perspective, so that psychosocial findings can be generalized to special populations and sound and effective programs and psychological interventions can be developed to improve the athletic, physical, and social well-being, and achievement strivings of children who are visually impaired.

The study reported here investigated the perceptions of physical appearance, athletic competence, and social acceptance of children and youths with visual impairments aged 8–21 prior to and at the conclusion of a one-week developmental summer sports camp. Demographic variables, such as chronological age and gender, were examined in relation to self-perceptions across domains of competence. The following research questions guided the investigation: (1) What are the perceptions of competence of children and youths with visual impairments? (2) Do perceptions of competence change after participation in a one-week summer sports camp? and (3) Do perceptions of competence vary across age or gender?

Method

Participants

The participants were 43 children and youths who attended a one-week summer sports camp for individuals with visual impairments. Of the 43, 27

were male (*M* age = 12.37, *SD* = 2.64) and 16 were female (*M* age = 14.0, *SD* = 3.88). A total of 33 participants were children (8–14 years: *M* age = 11.57, *SD* = 1.73) and 10 were youths (15–21; *M* age = 17.6, *SD* = 2.59). The sample included 35 campers with congenital visual impairments and 5 with acquired visual impairments; 3 provided no information about the onset of their visual impairments. All the participants were at the typical grade level for their age, which suggests that they had no cognitive delays that would influence their perceptions of competence.

For participation in sports, the United States Association for Blind Athletes (USABA) classifies individuals with visual impairments into one of three categories (B1, B2, or B3) on the basis of a Snellen chart measure of visual acuity and assessment of field of vision: B1 athletes have no functional vision, B2 athletes have a visual acuity of less than 20/400 or a visual field of less than 5 degrees, and B3 athletes have a visual acuity of 20/200–20/400 or a visual field of 5–20 degrees (Ponchillia, Strause, & Ponchillia, 2002). The campers' sport classifications (see Table 1) were determined by the descriptions of the campers' fields of vision and visual acuities provided by the parents or guardians.

Instruments

The Self-Perception Profile for Children (SPPC) was developed to tap domain-specific judgments of

competence and global perceptions of worth or esteem of children aged 8–14 (Harter, 1985). Although the SPPC assesses perceived competence across six domains, only the athletic competence, social acceptance, and physical appearance scales were used in this study. Each subscale contained 6 items, for a total of 18. Items were presented in the order outlined in the SPPC, alternating among social acceptance, athletic competence, and physical appearance.

The SPPC uses a structured alternative format. First, the participants decide whether they are more like the person described on the left or right sides of the page. Second, they indicate whether the description most like them is “really true” or “sort of true” for them. This question format legitimates either choice and reduces the inclination to provide socially desired responses. Each item is later scored on a scale of from 1 (low perceived competence or adequacy) to 4 (high perceived competence or adequacy). Subscale scores are determined by averaging the 6 items for each subscale.

The Self-Perception Profile for Adolescents (SPPA) is an extension of the SPPC developed for youths aged 15–17 (Harter, 1988). The contents of the competence domains outlined in the SPPC are parallel across the child and adolescent versions. Many of the items are identical. The wording of several other items was altered by Harter (1988) to make the items appropriate for youths. Given the overlap in content across the two

versions, researchers can comfortably switch versions at the appropriate age level and still be able to compare the subscale scores across the two versions (Harter, 1988). The SPPA contains nine subscales (the six described earlier and three additional ones). Only the physical appearance, athletic competence, and social acceptance subscales were used in this study. Each subscale contains 5 items, for a total of 15. The question format, order, administration, and scoring are the same as for the SPPC.

Harter's Self-Perception Profile instruments were previously used with youths with visual impairments (Sherrill, Hinson, Gench, Kennedy, & Low, 1990). When Harter's scales are used with participants with visual impairments, they must be administered verbally, in large print, or in braille. Given that not all the participants in the current study could read a larger font or braille, the SPPC and SPPA were administered verbally to standardize the administration. Although Harter's scales are applicable to populations of children with disabilities, validation of the scales and changes in administration techniques for children and youths with visual impairments merit further attention (Sherrill, 1997). Evidence of the reliability of Harter's scales from the present study was provided using postcamp scores. The internal consistency reliability, based on Cronbach's alpha, on the total scale was $\alpha = .80$ for children and $\alpha = .71$ for youths.

The demographic profile was developed by the primary

investigator to determine the participants' (1) years of camp experience, (2) type of visual impairment, (3) sports classification, (4) age of onset of the visual impairment, (5) chronological age, and (6) gender. Only age and gender were analyzed for this article.

Research design

The data were collected using a pre-experimental one-group pretest purposive sampling design. The following discussion accounts for potential threats to internal validity, including history, maturation, and testing. The acknowledgment of such threats helps validate the inferences we made in this study. To minimize the impact of events occurring during the one-week camp on perceptions of competence, the campers rotated to preassigned sports activities. including beep baseball, goalball, track and field, tandem cycling, swimming, gymnastics, bowling, archery, and judo. All the sports offered at the camp are sanctioned by the USABA and are accessible for persons across all sport classifications of visual impairments. Campers in both the younger and older age groups participated in the same activities each day, except that the order in which the activities were completed was different. All campers had the same number of opportunities and spent approximately the same amount of time in each sport offered at the camp. The consistency in the events and the lack of choice in the daily offerings minimized potential external influences on perceptions of competence.

The assignment of the 43 counselors (27 female and 16 male) to the campers was controlled for before camp started. Each camper had the same counselor for the duration of the camp. Of the 43 campers, 12 male campers had female counselors, 15 male campers had male counselors, and 16 female campers had female counselors; no female camper was assigned a male counselor. The influence of the counselor's gender on the camper's perceptions of competence was minimized by having groups of 8–15 camper/counselor pairs travel together.

A third factor that influences perceptions of competence is related to the effects of the pretest on postcamp scores. Given that the spacing of the pre- and postcamp tests was the same for all the participants, the potential for the participants to become aware of the purpose of the questionnaire was minimal and was anticipated to be the same for everyone.

The impact of maturation on perceptions of competence between the pre- and postcamp scores was limited by the one-week period. Traditionally, a one- to two-week time frame has been used to determine test-retest reliability, with results supporting the stability of perceptions of competence across this time frame (Shapiro & Dummer, 1998; Ulrich & Collier, 1990). The consistency of perceptions of competence across a one-week reliability analysis suggests that the changes in perceived competence in the current study may

partly reflect the impact of the camp, rather than changes associated with maturation.

Data collection procedures

Each parent or guardian received information about the research project, a consent form, and a demographic questionnaire by mail two weeks before the camp started. The parents or guardians returned the consent forms and demographic questionnaires when they registered the children at the camp. The parents or guardians and the campers were able to ask questions about the study during the registration period, and the campers asked questions throughout the study.

The campers aged 8–14 completed the SPPC, and those aged 15 or older completed the SPPA. The campers completed their age-appropriate self-perception profiles the evening they arrived at the camp or the day after they arrived. They completed the questionnaires individually with the help of a test administrator. Regardless of visual acuity, the test administrator read each question aloud and recorded the campers' responses. Completion of each survey took approximately 15 minutes. The campers completed the questionnaires when they were not engaged in camp activities and then returned to their scheduled camp activities. The campers were tested on the evening prior to the last day of camp or on the last day of camp. The testing procedures were the same as those described for the precamp test.

A total of four trained researchers administered the questionnaire. Training took place over three hours and included an orientation to and practice in administering the survey. Feedback was provided by the primary investigator throughout the training to ensure that the tests would be administered consistently. The consistency of the test administration was ensured by having test administrators observe each other. All four test administrators have a minimum of a master's degree in adapted physical education and extensive experience in working with children with visual impairments.

Data analysis

Domain-specific perceived competence scores were calculated for males, females, children, and youths. Given the differences in the sizes of the groups (such as children and youths), we used a mixed model 2 (time) × 3 (competence domain) multivariate analysis of variance, with age as a covariate, to examine perceptions of physical, athletic, and social competence pre- and postcamp. A simple-effects analysis of variance and post hoc analysis were used to determine differences in perceptions of competence across the three domains. Effect sizes were calculated to determine the meaningfulness of the results.

Results

Descriptive statistics

Domain-specific perceptions of competence for the total sample, males, females, children, and youths are presented in Table 2. The mean scores for perceptions of competence ranged from 2.47 to 3.40 out of a possible 4. These mean scores fluctuated above the midpoint of the scale. There was considerable variation among the sample, with standard deviations (in parentheses) falling between .41 and .89. Using mean scores, we found that physical appearance (precamp = 3.23, postcamp = 3.36) was rated the highest, followed by social acceptance (precamp = 3.05, postcamp = 3.19) and athletic competence (precamp = 2.73, postcamp = 2.94), both pre- and postcamp.

Although no significant interactions were observed for the competence domain across age, gender, and time, a main effect for competence was observed: F (2, 36) = 6.22, p = .003. The mean scores and standard deviations for social, athletic, and physical competence were 3.12 (.60), 2.83 (.74), and 3.30 (.66), respectively. Post hoc tests for competence indicated that the mean ratings for athletic competence differed from the mean ratings for physical appearance. Neither the athletic competence nor the physical appearance ratings differed from the mean ratings for social competence.

Changes in perceived competence across time

A time (pre–postcamp) main effect was found, with the scores for perceived competence higher at the end than

at the start of camp. The mean perceived-competence scores and standard deviations (in parentheses) for boys were 3.18 (.46) at the start of camp and 3.21 (.46) at the end of camp. For girls, the scores and standard deviations (in parentheses) were 2.73 (.48) and 3.1 (.48) at the start and end of camp, respectively. A significant time-by-gender interaction was observed ($F = 13.72$, $p = .001$). A significant difference ($F = 13.72$, $p = .001$) existed between the boys' and girls' perceptions of competence at the start of camp, with the girls' perceptions not significantly different from the boys' at the end of camp.

Effect size is a measure that indicates the magnitude of differences between groups and the proportion of total variance accounted for by a given independent variable (Sutlive & Ulrich, 1998). An analysis of the effect sizes for gender differences and differences between the pre-and postcamp scores for all perceived competence variables indicated that the boys' and girls' perceptions of competence were meaningfully different at the beginning of camp, with the girls improving so that their perceptions of competence across all three domains were not meaningfully different from the boys' at the end of camp. For the social acceptance domain, the effect size for the difference between the boys and girls using the precamp means and standard deviations was .75—a moderate to high magnitude. Using the postcamp means and standard deviations, the effect size dropped to .13 because of the improvement for the girls and the

lack of improvement for the boys. Before camp, the average boy and the average girl were separated by .75 standard deviations on perceived social acceptance. Following the camp experience, the difference was extremely small—.13 standard deviations. The same pattern was found for perceived athletic competence (from $\eta^2 = .43$ precamp to $\eta^2 = .05$ postcamp) and for perceived physical appearance (from $\eta^2 = .66$ precamp to $\eta^2 = .05$ postcamp).

Discussion

This study investigated the perceptions of competence of children and youths with visual impairments who participated in a one-week summer sports camp. The high mean scores on physical appearance suggest that the campers may not have perceived their appearance as different or undesirable but, rather, that their perceptions were a reflection of the pride they felt in their looks. The low scores for athletic competence suggest that these campers may not have believed that they had the fundamental skills necessary to play many of the sports that were available at the camp. We hypothesized that the low perceptions of athletic competence among the children and youths with visual impairments in this study reflect the lack of meaningful community- and school-based opportunities to engage in athletics. The provision of physical activity programs in which USABA-sanctioned sports are taught may help to improve perceptions of athletic competence among these children and youths.

The moderate scores on social competence and the lower scores on athletic competence were somewhat unexpected. Although children's feelings about social competence are related to their involvement and performance in physical activity, it has generally been reported that those who score high on measures of social competence tend to be more physically active and have better scores on selected measures of physical fitness (Page et al., 1992). The campers in this study felt more positive about their social competence yet had low perceptions of their athletic competence. These findings suggest that children and youths who are visually impaired may think they have acquired the social skills necessary to interact and function in social settings, but these social skills may not have translated into inclusion in group physical activities. Given that perceptions of competence in athletics and physical appearance were not significantly different from perceptions of social competence in this study, future research should investigate the definition of social competence by children and youths with visual impairments and its relationship to their perceptions of their physical appearance and participation in sports.

The finding of the lack of any significant age differences in perceptions of competence across the three domains differs from findings reported in the literature. That youths without disabilities tend to have higher perceptions of their athletic competence than do children without disabilities reflects the fact that

youths have had more experience than younger children and are more mature and ready for more activities at a higher level. The similarity in perceptions of athletic competence among the children and youths with visual impairments may reflect the lack of availability of athletic opportunities across the developmental years. The similarity in perceptions of social acceptance between the children and youths with visual impairments may reflect the consistency of rejection by peers and loneliness experienced by students with visual impairments throughout the school years. Age differences in social competence were anticipated, given reports that youths who are visually impaired find it more difficult to achieve satisfactory social situations at about ages 13–16 (Rosengren & Undemar, 2001). It has been generally observed that physical appearance takes on greater importance with age. However, given that the participants in this study could not adequately see their bodies, it is not surprising that their perceptions of their physical appearance remained relatively stable with age. It is likely that with age, other areas of competence, including academic and job skills, are emphasized over physical appearance and athletic competence, which would reduce developmental differences in these latter two competence domains.

The lack of a main effect for gender in perceptions of competence was unexpected. Among children without disabilities, gender differences are typically found and attributed, in part, to the greater opportunities to

participate in competitive sports for boys or the propensity of most sports to be sex typed as male oriented. Lirgg (1991) indicated that perceptions of competence are closely related to one's experiences. The frequency with which boys and girls with visual impairments participate in sports is similarly limited, resulting in more similar perceptions of competence. The similarity in perceptions of athletic competence and social acceptance among boys and girls with visual impairments may also reflect the perceived gender neutrality of USABA-sanctioned sports, such as goalball and swimming. It is likely that the perceived gender neutrality of the sports for and among persons with visual impairments gives boys and girls the perception that each can equally participate and develop competence. Furthermore, the small number of persons with visual impairments in any given community who participate in sports means that to build teams, boys and girls who are visually impaired have to be grouped together for participation. Such groupings may reduce the likelihood that sports for individuals with visual impairments are gender biased. This possible perceived lack of gender bias in sports may lessen gender differences in perceptions of competence among children and youths with visual impairments.

The finding that the camp had a greater impact on the girls' than the boys' perceptions of competence across all three domains was unexpected. It is possible that social and peer factors played a more critical role in the

girls' than in the boys' participation in physical activities and perceptions of physical appearance (Page et al., 1992). The girls may have developed deeper relationships with their counselors than the boys, thereby giving them increased validation of their feelings of competence socially, athletically, and physically (Page et al., 1992). It is also possible that the relationship between the girls and their counselors enabled the girls to feel as though they had more control over their performance and social interactions than they initially perceived, with such increased perceptions of control leading to greater perceptions of competence (Chase, 2001). It may also be that the female campers received or were more receptive to instruction, verbal praise, and feedback than were the male campers, thereby differentially enhancing their perceptions of competence across the three domains. Future research should investigate the impact of supportive and intimate relationships on the differential development of perceptions of competence in boys and girls.

Recommendations for future research

The following recommendations are presented to strengthen future research in the perceived competence of children and youths with visual impairments. To generalize the results of research on individuals with visual impairments meaningfully, it is critical to obtain as much information as possible regarding the nature

and extent of the visual impairments. By doing so, it may be possible, with large enough samples, to examine the effects of the level of visual impairment on perceived competence. Then, to conclude definitively that any program or intervention had an impact on perceived competence, it is critical that a comparison group of children and youths of the same age, gender, visual impairment, and backgrounds in physical activity be employed. Finally, participation in camp in this study should be considered intense, personal, and with a moderately high level of frequency of activities. Researchers should examine the impact of ongoing participation in sports on perceptions of athletic competence and the impact of physical appearance on motivation to participate in sports. Continuous involvement in sports and physical activities should result in participants learning all the skills and techniques they need to feel more competent (Ponchillia et al., 2002; Theeboom, De Knop, & Weiss, 1995). With continuous recreational opportunities, individuals with disabilities should also have the opportunity to improve their perceptions of their social selves (Blinde & McClung, 1997).

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