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Children's Perceived Physical Competence at Various Types of Physical Activity

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Abstract

With the emergence of the multidimensional approach to the study of self perceptions, notably physical self perceptions, it was felt there was a need to determine if children differentiate between their physical capabilities at recreational, non-competitive, and organised competitive physical activities. Harter's (1985) six item Athletic Competence sub-scale from the Self Perception Profile for Children was administered to 578 7-15 year old children. The items were modified to contain the qualifier "these activities", instead of the qualifier "sport" as used by Harter and the children were requested to think about three different activity-types while answering the questions in each section. Gender by age by activity-type ANOVA revealed that children differentiated between their competence levels at each of the three physical activity types. Males were found to have higher levels of perceived competence than females for each activity type.

Types of Physical Activity

Extant theory and research support the notion that a child's motives for participating, or not participating, in sport and physical activity are, for the most part, a function of perceptions of physical capabilities. Children's' perceptions of their physical competence have been found to be powerful and consistent predictors of their participation, effort and continuing interest in sports and physical activity (Harter, 1986; Horn & Hasbrook, 1987; Roberts, Kleiber & Duda, 1981; Weiss, Bredemeier & Schchuk, 1984; Weiss, McAuley, Ebbeck & Weise, 1990 and Weiss & Horn, 1990).

Currently, the most popular measure of children's' perceived physical competence is the Athletic Competence sub-scale of Harter's (1985) Self Perception Profile for Children (SPPC). It would appear, however, that this sub-scale is basically a measure of sports competence. Five of the six items in the sub-scale use the word "sport", the sixth, the term "outdoor games". Such terminology would tend to denote activities which are competitive, organised and require specialised skill. Sleap and Warburton (1992) observed the physical activity levels of 56 UK preadolescents. Findings revealed that many favoured free time physical activities, which were engaged in at moderate to vigorous levels activities, could not be described as "sports" - climbing trees, hula hoop, brisk walking, dancing, biking and skipping.

Harter's (1985) Self Perception Profile for Children (SPPC) is has been commended for the fact that its items do not contain specific situational referents (Fox and Corbin, 1989). Individuals are free to personally define the terms presented in each item (such as "sports", "physical appearance", "smart"). In this way responses reflect the subject's self assessment according to what he/she feels the term in question means. The beauty of the design lies in the fact that meanings are not defined arbitrarily by the researcher through factor derivation. However, such an approach may be guilty of masking important information. It is plausible that some children could perceive themselves to be low in competence at organised sport, such as soccer or hockey, but highly competent at such recreational activities as biking, running and roller-skating. As such, children's involvement in competitive "sport" may form but one aspect of the physical activity spectrum and the Athletic competence sub-scale of the SPPC may be restrictive and rigid in its definition of what constitutes the domain of physical competence.

A similar limitation of the sub-scale has also been identified by Feltz and Brown (1984). They felt that a child may feel fairly competent at sports in general but lack competence at a specific

sport, or vice versa. Feltz and Brown believe that Harter's sub-scale, which is written in terms of sports and outdoor games cannot capture the distinctions that children make regarding their abilities within the physical domain. Feltz and Brown modified the sub-scale to apply specifically to soccer and found perceived soccer competence to be a separate component of perceived physical competence.

Fox and associates' (Fox, 1990; Fox & Corbin, 1989) appraisal of the concept and measurement of the physical self led them to sub divide the physical domain into four sub-domains: physical competence, appearance, strength and condition. From this they developed the Physical Self Perception Profile comprising four subscales: Sports Competence, Attractive Body, Physical Strength and Physical condition. Physical competence within this conceptualisation, however, is still defined and measured as "sports" competence. This mulitdimensional approach to measurement of the physical self should also be extended to measurement of physical competence. The dimensions, or content, of the physical domain seem to have emerged mainly from the minds of researchers rather than from the population in question (Fox, 1990). It seems apparent that children's perceptions of their abilities at recreational, non-competitive, non-athletic physical activities should also be tapped if we are to accurately measure their perceptions of their physical abilities across the broad spectrum of the physical domain.

Research has consistently found that boys have more salutary perceptions of their physical competence than girls. During validations of the 5-scale SPPC and its predecessor *The Perceived Competence Scale for Children,* Harter (1982) found that boys saw themselves as considerably more physically competent than girls across all samples of 8-14 year old children. Granleese, Trew and Turner (1988) also found that boys' domain of highest competence was the physical domain, whereas girls' was the social domain. Similarly, Feltz and Petlichkoff (1983) and Biddle and Armstrong (1992) found that males' perceived physical competence scores were significantly higher than females'. Such findings may, however, be due to interpretation of the word "sport". Duda (1981) reported that although both boys and girls preferred to succeed more in sport contexts than in the classroom, girls preferred not to engage in individual competition with other girls, preferring team competition and non-competitive situations. A broader, more encompassing measure of physical competence which includes non-competitive, recreational sporting activities may allow girls to rate themselves as more physically competent.

In order to determine if children have a differentiated and multidimensional conceptualisation of the physical competence domain, this research will measure children's competence levels at various types of physical activity. Two hypotheses will be tested. Firstly, children will differentiate between their competencies at three types of physical activity. The degree of differentiation will vary as a function of age and gender. Secondly, all competence scores will differ by gender and differences will favour males.

METHODS.

Subjects

The questionnaire was administered to 578 children, aged 7-15, 284 females (M age = 10.69; SD = 1.75) and 293 males (M age = 10.19; SD = 2.0). Of these, 238 were attending a Summer sports camp, where, for two weeks, they engaged in sports activities ranging from games of low organisation, swimming and sports skills instruction, through to competitive team sports. Data were collected near the end of the second week. The remaining 341 children were attending one of three elementary schools in the same city which draw pupils from both urban and suburban middle class neighbourhoods.

Measure

At the outset of research the physical domain was divided into three sections. The sections labelled play competence, recreational competence and competitive competence. The motor competence section contained a list of play activities such as tag, skipping and climbing trees. The recreational competence section listed recreational activities such as pick up games, aerobics and skating. Finally, the competitive competence section listed competitive sport activities, for which there is a coach and/or a referee, such as basketball, volleyball, ringette and track and field. The activities listed in each section and were compiled from suggestions by group of children involved in fencing summer school and local elementary school P.E. teachers. The sections and activities listed within were seen by all as representing qualitatively different categories of physical activity.

The instrument used in this study was a modified version the six item Athletic Competence scale from Harter's (1985) SPPC. The items in the sub-scale were modified to contain the qualifier "these activities" instead of the qualifier "sport" and/ors "outdoor activities". Each section was

headed by a request to think about the type of activities listed while answering the questions in that section..

RESULTS

An alpha level of .05 was used for all statistical tests. Assumptions of homogeneity (Box's M = ?????, p=.08) and sphericity (Greenhouse-Geiser Epsilon = 0.98) were met.

Power. howdo you report this?????.....

Use p<.05 for all or p = .xxx????

Insert Table 1 round about here.

The first hypothesis stated that children would differentiate among their competencies in the three different types of physical activity, as a function of age and gender. Means (±SD) for these variables are presented in Table 1.0. A 2x2x1 (gender by age (7-9, 10-11, 12-15 yrs) by competence (play, recreational, competitive)) ANOVA with repeated measures on the last factor, revealed a significant within subject main effect for gender ($F(2, 1142) = 8.68$, $p = .000$) and age ($F(4,1142) = 5.16$, $p=.000$). In order to determine whether play, recreational and competitive competence scores were significantly different from each other within the male and for female groupings, a within subjects repeated measures ANOVA, with a between subjects dummy variable (gender), was run for males and then for females. Results showed a main effect for the within subjects factor in each group: males ($F (2,584) = 40.53$, $p=.000$), females ($F(2,566) = 55.75$, $p=.000$). Follow up Tukey (HSD) tests revealed that females' recreational competence scores did not significantly differ from their competitive competence scores ($P>.05$). However, play competence was significantly better than both recreational and competitive competence scores ($P<.05$). Both males' play and recreational competence scores were significantly better than their competitive competence scores but play and recreational scores were not significantly different. See Table 1.0.

Age difference were examined with 3x3 (age group by competence) ANOVA, run separately for males and females. Among males age differences were found for recreational competence ($F(2,290) = 3.24$, $p=.04$.). Tukey (HSD) tests revealed that 12-15 yr. olds had a significantly higher recreational competence than 10-11 yr. olds ($p<.05$). Females differed by age in their competitive

competence scores (F(2,282) = 4.06, p=.01). Tukey (HSD) tests revealed that 10-11 yr. olds had significantly higher competitive competence than 12-15 yr. olds.

The second hypothesis proposed that competence scores would differ by gender in all sections and that males would have higher competence scores than females. The 2x2x1 (gender by age by competence) ANOVA, with repeated measures on competence, showed a significant between subject main effect for gender (F(1,571) = 33.87, p = .000). Follow up 2x3 (gender by competence) showed significant gender differences for play competence (F(1,575) = 7.74, p=.005), recreational competence (F(1,576) = 41.42, p=.000) and competitive competence (F(1,576) = 16.94, p=.000). Examination of the means for each competence score (see Table 1.0) reveals that males scores are higher than females.

DISCUSSION

Physical competence has tended to be conceptualised and measured as a global construct. It is clear from these results that the conceptualisation of this domain is more differentiated in the mind of the child than in the mind of the self esteem researcher. Existing measures of physical competence (Harter, 1985; Fox, 1990?????) would appear to be restrictive because of their use of the term "sport" as the reference activity. Findings support those of Feltz and Brown (1984) who felt Harter's sub-scale ignored the fact that children make distinctions regarding their abilities within the physical domain. Competitive sport activities represented the sub-domain of lowest competence for the children in this study, lower than play and recreational competence for females and lower than play competence for males. These findings advocate utilising a more encompassing, multidimensional, definition of physical competence which would expand the boundaries of the physical domain to include a broader range of activities beyond the typical "sporting" activities

As expected males' perceived competence scores were higher than females' in each area of competence. Although it is tempting to conclude that such higher scores indicate higher levels of competence caution is warranted. One should not be overly concerned with the quantitative and directional differences in male and female scores and make conclusions based on their face value. Weiss and Horn (1990) believe that the quality of one's perceived competence, in the form of accuracy, is a critical issue to explore beyond the mere quantitative differences of high and low perceived competence individuals. It is possible that both males and females have similar

estimations of their physical competence, but females may be more modest when conveying this information, males, on the other hand, may be more extravagant (cf. Ladd and Price, 1986).

It is plausible that girls may be under estimating their physical competence levels. Biddle and Armstrong (1992), suggest that girls may seek approval, guidance and social support from significant adults (coaches, teachers, parents) more so than from their peers, because of a lack of confidence in their abilities at sports and physical activities. They found that 11 and 12 year old girls tended to rely on teacher's opinions and judgements about what to do, and how well they had done, in sports and PE class and were motivated more by a preference for easy than for challenging tasks. Boys, on the other hand, were less dependant on, or interested in pleasing the teacher and were primarily motivated by enjoyment of physical activity for its own sake. Fazey and Keely (1992) found that children, at the age of 10-11 years, are clearly aware of stereotypes and social expectations in sports and physical activities and that girls only feel fully competent at those activities which are stereotyped as appropriate for their gender. This should be borne in mind when measuring girls' physical competence.

Results revealed that older females (12-15 yr. olds) had poorer perceptions of their competitive competence than their younger (10-11 yr. old) counterparts, while older males (12-15 yr. olds) had higher perceived recreational competence scores than younger males (10-11 yr. olds). Research has highlighted age differences in accuracy of competence judgements and in saliency of particular sources of competence information (Horn and Weiss, 1991; Horn and Hasbrook, 1987). The majority of the respondents in this study, however, were aged between 9 and 11 years and unequal sample sizes across the four age categories, therefore, may have precluded finding further age differences.

In conclusion, results of this study suggest that in order to accurately and reliably assess children's perceptions of their physical competence careful consideration should be given to item content and use of terminologies which may focus attention on specific types of physical activity. Findings also support the development of at least another measurement category within the physical domain which focuses on perceptions of abilities at non-"sporting" physical activities. Adopting a more encompassing and multidimensional approach to the definition of the physical competence may allow greater appreciation and understanding of the influence of self perceptions on actual participation in physical activity, particularly with females. Additional research is need to verify the

results of this study and ascertain whether or not more, or even less, categories (play, recreational and competence) could better assess children's perceptions of their physical capabilities.

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Table 1.0

Mean competence scores for play, recreational and competitive competence for males and females and males and females by age group.

GENDER GENDER X AGE	COMPETENCE (MEAN, (SD)) PLAY	RECREATIONAL	COMPETITIVE	N
MALE	18.47 (3.10) [A]	18.43 (3.35) [B]	16.88 (3.68)	N = 293
7-9 YRS	18.18 (3.35)	18.50 (2.93)	18.98 (2.90)	N = 113
10-11 YRS	18.33 (3.59)	18.08 (2.93)	19.43 (3.39)	N = 125
12-15 YRS	16.64 (3.37)	17.03 (3.56) [C]	17.01 (3.60)	N = 55
FEMALE	17.76 (2.96) [D]	16.59 (3.51)	15.67 (3.34)	N = 285
7-9 YRS	17.20 (3.36)	17.84 (2.96)	18.30 (2.32)	N = 88
10-11 YRS	16.26 (3.65)	16.64 (3.62)	16.90 (3.16) [E]	N = 124
12-15 YRS	15.64 (3.39)	16.20 (3.44)	14.08 (2.95	N = 73

[A] = Play > Competitive ($p<.05$).
[B] = Recreational > Competitive ($p<.05$).
[C] = 12-15 yrs Recreational > 10-11 yrs Recreational.
[D] = Play > Recreational ($p<.05$), Play >Competitive ($p<.05$).
[E] = 10-11 yrs Competitive > 12-15 yrs Competitive.