EUROPEAN PSYCHOMOTRICITY JOURNAL

http://www.psychomotor.gr/epj.htm

ISSN 1791-3837
European Psychomotricity Journal 2008; 1; 2,18-28
Published by: Athlotypo Sports Publishing
http://www.athlotypo.gr/

On behalf of:
Scientific Psychomotor Association Hellas

ORIGINAL ARTICLE

Relationship between actual and perceived motor competence in a group of adolescents with psychiatric disorders

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Abstract
This study examined the relationship between actual and perceived motor competence in adolescents with psychiatric disorders. The participants were 37 (18 male, 19 female) Flemish adolescents, *M* age=13 years and 10 months (SD=9 months) remaining in a child and adolescent psychiatric hospital. The actual motor competence was measured by the Body Coordination test for Children and the perceived motor competence was measured by means of the Physical Self-description No significant differences were found in actual motor competence between boys and girls, whereas significant differences were found in perceived motor competence, in favor of boys. A Kendall correlation indicated no significant relationship between actual and perceived motor competence either in boys or in girls with psychiatric disorders.

Key words: *Actual motor competence, perceived motor competence, adolescents, psychiatric disorders*

Introduction

Self-concept and self-esteem are important aspects of people's psychological functioning. Physical exercise can be effective in improving self-esteem in children and adolescents both at risk and those not at risk (Ekeland, Heian & Hagen, 2005). Self-concept is viewed as the body of self-knowledge that individuals possess about themselves (Rosenberg, 1986) and refers to the cognitive part of the person, while self-esteem is considered to be the overall value that one places on oneself as a person (Harter, 1989) and refers to the social-affective part of the individual (Willoughby, King & Polatajko, 1996). There are several theories of self-concept and quite a lot of instruments which are based on these models for different populations. The most extensively validated model, until now, is the multidimensional-hierarchical model, first developed by Shavelson, Hubner and Stanton (1976) and further expanded by other researchers (e.g. Marsh, Richards, Johnson, Roche, & Termayne, 1994). Multidimensional recognition of the self gives the opportunity to examine physical self as an entity on its own (Fox, 1997). Hierarchical structure of physical self-concept suggests a top-to-bottom hierarchy, where global self-concept is at the apex and actual behavior at the bottom. Marsh, et al., (1994) developed a questionnaire which measures 11 specific components of physical self-concept (mentioned later in detail), which represent responders' perceived motor competence.

According to Gallahue (1996) perceived competence is a personal self-evaluation of one's competence in comparison to others and previous personal experience. As perceived competence can be used to predict behavior (Weiss, 1986; 1987), perceived motor competence is related in a positive way to sport involvement (Weiss, McAuley, Ebbeck, & Wiesse 1990). Harter (1978) suggested that perceived competence is a better predictor of an individual's motivation than actual competence, while actual competence is a contributing factor for perceived competence (Yun & Ulrich, 1997). Therefore, paying attention to

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children's actual as well as perceived motor competence, and how these aspects are related, is a vital matter in motor interventions (Yun & Ulrich, 1997).

Coordination is often used as an indicator of objective motor behavior, since it contributes strongly to the explanation of total motor performance (Mechling, 1999). Coordination can be defined as the ability of fast and exact control and regulation of movements (Bös, 2001).

Objective and subjective motor competence of children and adolescents does not always coincide, resulting either in overestimation or underestimation of individuals' physical abilities. Both extremes are undesirable as they prevent establishment of more realistic views of self. Brake and Bornholt (2004) and Yun and Ulrich (1997) reported that actual and perceived motor competence in samples of children 5-12 and 7-12 years old, respectively, were not necessarily associated. Yun and Ulrich (1997) though, ascribed this inconsistency to the insufficient cognitive functioning of the participants of their study, as they were mentally retarded, but they showed moderate correlations in the above aspects after the age of 11. Weak correlations on the above issue were found by Simons and Vandenbussche (2006) in a study of adolescents with psychiatric disorders. Raudsepp and Liblik (2002) showed significant fair and moderate correlation of the above variables in early adolescence. Jurimae and Saar (2003) showed that adolescents could moderately accurately perceive their endurance, flexibility and body composition, but not their strength. Raustorp, Stahle, Gudasic, Kinnunen, and Mattsson (2005) also found a significant, but negative relationship between adolescents' physical self and their Body Mass Index (BMI), except for their perceived strength. Additionally, Rudisill, Mahar, and Meaney (1993) showed a moderate relationship between children's objective and subjective physical performance, similar to Ulrich (1987), who reported a significant relationship between actual and perceived motor competence of children. Maeland (1992) and Rudisill, et al. (1993) suggested that children with coordination problems or low motor competence may perceive their physical performance more accurately than children without these problems. Similarly, Chan, Au, Chan, Kwan, Yiu, and Yeung (2003) and Crocker, Eklund, and Kowalski, (2000) found connections correspondingly and a correlation between perceived physical competence and participation in sports activities in adolescents, with the ones who had higher levels of perceived motor competence to be more physically active than their peers with low self perception. In contrast, Ulrich (1987) found no significant relationship between young children's perceived physical competence and involvement in organized sports. Children diagnosed with DCD appeared to be less physically active in organized and free play activities (Cairney, Hay, Faught, Mandigo & Flouris, 2005a), whereas their low generalized self-efficacy might explain this behavior (Cairney, Hay, Faught, Wade, Corna & Flouris, 2005b). Particularly the adolescents with psychiatric problems are often less motived to change. Exercise and psychomotor therapy are often very good ways to motivate them to work on their individualization, to gain a better body-esteem and this as a part of the self-esteem.

An aspect which has also been investigated and appears to influence actual and perceived motor competence and physical activity is gender. Boys were found to have better scores on motor tasks than girls (Rudisill, et al., 1993; Raudsepp & Liblik, 2002; Chan, et al., 2003) and to get involved in physical activities more often than girls (Crocker, et al., 2000; Chan, et al., 2003; Cairney, et al. 2005a, b). On the other hand, Theofili and Simons (2002) reported no differences in coordination between boys and girls with psychiatric disorders, while Simons and Van Lent (2006) found significantly better scores for girls' actual motor competence in a follow up study of primary school children. With reference to perceived motor competence, a significant number of studies of adolescents had shown that boys have higher perceptions concerning their physical abilities than girls (Rudisill, et al., 1993;

Crocker, et al., 2000; Faria, 2001; Asci, 2002; Raudsepp & Liblik, 2002; Chan et al., 2003; Bowker, Gadbois & Cornock, 2003; Shapka & Keating, 2005). Van Rossum, Mush and Vermeer (1999) reported that this difference is observed due to the fact that girls consider their perceived motor competence in relation to boys' performance in sports. Gender role orientation may also explain gender differences, seeing that perceptions of femininity and sports participation have been negatively correlated (Bowker, et al. 2003). Yet, girls' general self-worth does not differ from that of boys, due to possible compensating perceptions in other areas of self-concept (Bowker, et al., 2003). In contrast with the above findings, Wood, Hillman, and Sawilowsky (1996), Friedman (2003) Vermeer, Lynse and Lindhout (2004), Cairney, et al. (2005a), Simons and Van Lent (2006), and in studies with primary school children, in children and adults with DCD, intellectual disabilities, anxiety disorders and adolescents at risk, respectively, did not find variations in subjective motor competence between female and male participants. Furthermore, Rudisill et al. (1993) stated that gender did not influence the relationship between actual and perceived motor competence of children.

On the basis of the above mentioned literature the hypotheses for the present study are that: i) boys and girls with psychiatric disorders do differ in actual or in perceived motor competence, ii) there is a discrepancy between actual and perceived motor competence in adolescents with psychiatric problems and the correlation would be low.

Method

Participants

The sample for the present study consisted of 37 Flemish adolescents, who were recruited at the University psychiatric centre KULeuven, Campus Gasthuisberg, Child and Adolescent Department in Leuven, Belgium. Nineteen of them were girls (*51.4%)* and 18 were boys (*48.6%*). Boys and girls did not differ significantly either according to their age (t= -0.37, p> 0.05) or their 'Intelligent Quotient' (IQ) scores (p> 0.05). The age of the sample ranged from 12 years and 4 months to 15 years and 6 months (M=13 years and 10 months, SD=9 months). Their IQ was assessed either by WISC-R (n=14, *37.84%*) or WISC-III (n=20, *54.05%*). The means of IQ scores for the whole group were: Total IQ 105.43 (SD=14.88), Verbal IQ 104.57 (SD=15.37) and Performal IQ 104.76 (SD=13.60), that is around average, as the mean IQ for a normal population is 100 (SD=15). Participants had a wide variety of diagnoses (n=37). An overview of their diagnoses follows: DCD, ADHD, anxiety disorders, separation anxiety, mood disorders, depression, identity problems, post-traumatic stress disorder, school phobia, reactive-affective disorder, learning problems, sexual abuse, pervasive developmental disorder, autistic disorder, eating disorders, behavioral disturbances, low self-esteem, fear of failure, emptiness, and relationship problems within the family system. The project was admitted by the ethical committee of the faculty and approved by the medical head of the department.

Procedure

Participants were adolescents with psychiatric disorders and behavioral disturbances that remained at the above hospital for more than 4 weeks of time from 1994 to 2006. Every child, when they entered the clinic, in the frame of psychomotor observation was administered several tests, according to the professionals' appreciation for each case. For this study the inclusion criterion was to have completed both the Physical Self-Description Questionnaire (Marsh, et al., 1994) and the Body Coordination Test for Children (Kiphard &

Schilling, 1974). To our knowledge this research was never done by means of a hierarchical questionnaire. Therefore it seems interesting to look not only at the aspect of coordination but also at self-esteem, the global physical self-esteem and the different physical competences measured by the questionnaire.

Measurements

Body Coordination Test for Children (BCTC; Körperkoordinationstest fur Kinder, KTK, Kiphard & Schilling, 1974).

Actual motor competence of the adolescents with psychiatric disorders who participated in the present study was measured by the KTK. This test measures the overall body coordination and control of children, through the measurement of four tasks: balance beam, monopedal jump, side jump and platform transfer. For each of the four items, a raw score (RW) and a scaled score (Motor Quotient score) are recorded. Separate values for male and female children are offered in the test manual for the second and the third task. This is why we will use the raw data at the item level but the MQ-value for the total result. The total Motor Quotient (MQ) (M= 100, SD=15) and percentile can be also estimated. The manual provides normative data for four different groups of children: normally developing children, children with learning disabilities, children with behavioural disturbances and children with brain damage. In this study, the results were compared with the scores of the normal population. According to the manual the KTK (Kiphard & Schilling, 1974) is considered reliable and valid for the evaluation of global dynamic coordination in the populations mentioned above, as this was evidenced by factor analysis.

Physical Self-Description Questionnaire (PSDQ, Marsh, et al. 1994).

The instrument to measure perceived motor competence of the participants of this study is the Dutch translated version of PSDQ (Simons & Theunissen, 2005). It is based on the hierarchical-multidimensional model of self-concept and assesses participants' physical self-concept through the measurement of 70 items divided over11 scales: Global Self-Esteem (8 items), Global Physical Self-Concept (6 items), Strength (6 items), Body Fat (6 items), Activity (6 items), Endurance/Fitness (6 items), Sport Competence (6 items), Coordination (6 items), Health (6 items), Appearance (6 items) and Flexibility (6 items). Response possibilities range on a 6-point scale, where 1 is not true and 6 is very true. The sum of scores (RW data) for each scale was used for the calculation of different components of the PSDQ. The instrument was designed for adolescents 12 years of age and older. According to different publications (Marsh et al, 1994; Marsh, Marco & Abcy, 2002; Richards & Marsh, 2006) the questionnaire is highly reliable and valid.
All adolescents were tested individually by two psychomotor therapists with more then 30 years of experience.

Statistical analyses

Data were analysed by using Statistica software (version 6.0). Normality for the scores of each test was checked by using Kolmogorov-Smirnov test. A Mann-Whitney U Test was applied in order to check the differences between boys and girls in the two tests, the KTK and the PSDQ, separately. Cronbach alpha was also tested for the 11 scales of PSDQ on this group of adolescents. As boys and girls differed significantly on more than half of the scales of the PSDQ, the relationship between actual and perceived motor competence was

tested separately for boys and for girls by using Kendall Tau Correlations. The level of statistical significance was set at $p < 0.05$.

Results

Concerning the first research question, a Mann-Whitney U Test was used to determine the differences between boys and girls on the KTK. The overall differences between the two groups were calculated from the total Motor Quotient (MQ) of the KTK, the medians and interquartile range of raw scores (RW) of the four tasks of the KTK, and are given in Table 1. The results showed that boys and girls did not differ significantly on the total MQ or on any of the four tasks of the KTK. The total MQ in actual motor competence of boys with psychiatric disorders (*Mean*=94.67, *SD*=21, p=0.30>0.05) had a tendency to be lower than the mean scores of the normal population (*Mean*=100, *SD*=15). Girls' scores (*Mean*=86.42, *SD*=19.62, t= -3, p=0.007<0.05) were found to be significantly lower when they were compared with the norms.

Table 1. Mann-Whitney U Test: Median Scores and Interquartile Range (Iqr) of Raw Scores of KTK and PSDQ

	Boys (n=18)		Girls (n=19)			
	Median	IQR	Median	IQR	U value	p value
Total MQ	98.5	84-110	89	80-98	125.5	0.17
Balance beam (RW)	53.5	39-64	52	43-67	136.5	0.29
Monopedal jump (RW)	71	60-77	66	48-72	122.5	0.14
Side jump (RW)	73	63-79	69	63-75	148	0.48
Platform transfer (RW)	51.5	45-56	50	47-54	152.5	0.57
Global Self-esteem	4.75	3.75-5	3.00	1.87-4.62	93	0.018
Global Physical Self-concept	4.5	2.67-6	2.67	1.17-4.67	101	0.033
Health	4.19	3.5-5.12	4.50	3.87-5.12	148	0.48
Coordination	5.0	3.67-5.67	3.83	2.83-4.37	95	0.02
Physical Activity	3.58	2.67-5.17	3.17	2.17-3.67	112	0.07
Body fat	4.91	3-5.83	3.73	2.33-5.83	141.5	0.37
Sport Competence	4.75	3.33-5.5	2.67	1.5-4.00	70.5	0.002
Appearance	3.83	3.33-4.5	2.53	1.83-4.5	135.5	0.28
Strength	4.58	3.83-5.17	2.50	1.83-4.5	91	0.015
Flexibility	4.67	3.17-5.33	4.00	2.83-4.83	129	0.2
Endurance	3.92	2.33-5.17	1.83	1.33-2.17	60	0.0007

The differences in perceived motor competence between boys and girls were also calculated, by using a Mann-Whitney U Test. The overall differences were assessed from the median scores and interquartile range of RW scores of the 11 scales of the PSDQ, as for the KTK, and are shown in Table 1. Significant differences were found between boys and girls with psychiatric disorders in Global Self-Esteem (U=93 p=0.018) and in Global Physical Self-Concept (U= 101 p=0.033), with boys having higher scores in these two variables than girls. Additionally, significant differences were found in coordination (U=95 p= 0.02), in Sport Competence (U=70.5 p=0.002), in Strength (U=91 p=0.015) and in Endurance (U= 60 p=0.0007), with boys having higher scores than girls. Boys with psychiatric disorders showed high Perceived Motor Competence on all scales of the PSDQ. Contrarily, girls with psychiatric disorders were found to have low scores on Global Self-Esteem (*Median*=3 <3.5), and low Global Physical Self-Concept (*Median*=2.67 <3.5), but high scores on perceptions about their Health (*Median*=4.5 >3.5), Coordination (*Median*=3.83 >3.5), Flexibility

(*Median*=4 >3.5) and Body Fat (*Median*=3.73 >3.5), as well, were 3.5 is the median point of the 6-point rating scale.

The second main analysis was designed to determine whether there was a relationship between actual and perceived motor competence in adolescents with psychiatric disorders. Although the Kolmogorov-Smirnov test found a normal distribution for the scores of both tests, owing to the differences between boys and girls in Perceived Motor Competence, as mentioned above, boys and girls scores were analyzed separately. The results are shown in Table 2 for boys and in Table 3 for girls. The obtained correlation coefficients indicated that there was no overall significant correlation between Actual and Perceived Motor Competence of adolescents with psychiatric disorders. Only Global Self-Esteem (*tau*=0.35) and Perceived Flexibility (*tau*=0.39) of boys were low correlated with the Monopedal Jump of the KTK and Perceived Body Fat was moderately correlated with Platform Transfer (*tau*=0.50). Moreover, girls' total MQ was not significantly related to Global Self-Esteem or Global Physical Self-Concept, but was significantly low correlated with their Perceived Health (*tau*=0.33). Also, girls' Perceived Strength found to have a significant moderate relationship with the Monopedal Jump of the KTK (*tau*=0.43) and a low negative correlation was found between the Platform Transfer and their Perceived Coordination (*tau*= -0.39). In neither boys nor girls were significant correlations found between Actual nor Perceived Coordination, as this combination is the most representative to check the relationship between Actual and Perceived Motor Competence.

Table 2. Kendall Tau Correlation Coefficients between Actual and Perceived Motor Competence in Boys (N=18)

	Total MQ	Balance beam (RW)	Monopedal jump (RW)	Side jump (RW)	Platform transfer (RW)
Global Self-esteem	0.24	0.26	0.35*	0.11	0.19
Global Physical Self-concept	0.11	0.17	0.28	-0.03	0.29
Health	0.22	0.20	0.20	0.17	0.19
Coordination	0.30	0.27	0.25	0.22	0.27
Physical Activity	0.02	0.07	0.03	0.00	0.03
Body fat	0.27	0.25	0.30	0.18	0.50*
Sport Competence	0.24	0.15	0.25	0.13	0.18
Appearance	0.13	0.12	0.16	-0.04	0.31
Strength	-0.03	-0.07	0.22	-0.007	-0.21
Flexibility	0.14	0.18	0.39*	-0.08	0.25
Endurance	0.08	0.00	0.29	0.01	0.24

*****Significant correlations at p< 0.05

Table 3. Kendall Tau Correlation Coefficients between Actual and Perceived Motor Competence in Girls (N=19)

	Total MQ	Balance beam (RW)	Monopedal jump (RW)	Side jump (RW)	Platform transfer (RW)
Global Self-esteem	0.06	0.12	0.10	0.08	-0.13
Global Physical Self-concept	0.25	0.26	0.27	0.08	0.04
Health	0.33*	0.28	0.29	0.10	0.26
Coordination	-0.29	-0.24	-0.22	0.17	-0.39*
Physical Activity	-0.05	0.07	-0.13	0.05	-0.15
Body fat	0.12	0.19	0.16	-0.10	-0.10
Sport Competence	0.12	0.09	0.31	0.14	-0.11
Appearance	0.26	0.28	0.25	0.05	0.08
Strength	0.27	0.18	0.43*	0.18	0.16
Flexibility	0.11	0.19	0.26	0.05	-0.11
Endurance	0.05	-0.07	0.19	0.13	-0.07

*****Significant correlations

Discussion

The first purpose of the study was to determine whether there were differences between boys and girls with psychiatric disorders in Actual and in Perceived Motor Competence. As far as Actual Motor Competence is concerned, no significant differences were observed in the total scores for Coordination or in any of the subtests for Objective Motor Competence. This result is consistent with the one of Theofili and Simons (2002), who also examined psychiatric patients regarding their Coordination. The results of other studies, with normal populations are contrary to the present result, as these studies showed higher performances of boys (Chan, et al., 2003; Raudsepp & Liblik, 2002; Rudisill, et al., 1993). Nevertheless, in the present research, boys' scores on the total MQ as well as in the four subtasks of the KTK were higher, but not significantly, than girls. A possible explanation for the present results may be the small number of participants, which may not have been representative, to measure the differences between boys' and girls' objective physical competence. Additionally, a high number of adolescents with psychiatric disorders do not participate in physical activities (Cairney et al. 2005a, b), which may mean they do not have the opportunity to improve their movement potentials, especially boys, so as to differentiate their scores from those of the girls, as in a normal male population. The above statement may also explain the low scores of girls and the tendency for low scores in boys in the total MQ of Objective Competence found in this study, compared with the norms. Another relevant issue is that parents had take their girls to psychiatric clinics at a later stage of psychopathology, as social expectations are lower for girls, resulting in the appearance of more severe cases of girls in psychiatric environments. Furthermore, studies that found differences between boys and girls used normal populations and other tests for actual motor competence, in which boys perform better than girls. However, Simons and Van Lent (2006) studying normal children, found girls to perform better than boys in real motor competence.

The hypothesis for participants' subjective motor competence concerning gender predicted boys with psychiatric disorders would have higher scores then girls. Results of this study confirm the hypothesis, since boys scored significantly higher on more than half of the PSDQ scales to the girls. These findings are consistent with many studies on this topic (Rudisill, et al., 1993; Crocker, et al., 2000; Faria, 2001; Asci, 2002; Raudsepp & Liblik, 2002; Bowker, et al., 2003; Chan, et al., 2003; Shapka & Keating, 2005). However there are studies, mainly with special populations, that did not find significant gender differences in perceived physical competence (Wood, et al. 1996; Friedman 2003; Vermeer, et al. 2004; Cairney, et al. 2005a). Boys' higher physical perceptions may be attributed to their better actual motor performance in general (Rudisill, et al., 1993; Raudsepp & Liblik, 2002). Additionally, sporting activities are often considered as 'masculine', resulting in girls' not spending as much time in them, having less positive attitudes towards them and participating less with the consequence of being less competent than their male peers (Chan, et al. 2003). To the above explanations it can be added that boys may be encouraged more by their families to do physical exercise and there may be higher expectations of significant others towards their good physical performance (Van Rossum, et al., 1999). Nevertheless, the small number of participants may not have been representative of the population of adolescents with psychiatric disorders. Furthermore, general self-esteem and general physical self-concept of boys with psychiatric disorders were found to be high, while girls scored low or moderate on these scales. Additionally, some studies (Bowker, et al. 2003; Shapka & Keating, 2005) did not find gender differences in general self-esteem, as girls' lower physical self-concept was overcompensated by other self perception domains, such as the social domain (Shapka & Keating, 2005). The use of the hierarchical-multidimensional model in this study gave the opportunity to collect more details about perceived motor competence, in

comparison with the multidimensional models that have been used in other studies, which might explain the differences in results. Van Rossum, et al. (1999) emphasized the importance an individual puts on a specific domain and how this affects their Perceived Competence. Therefore, another explanation may be that girls are not as interested in physical activities, so their general self-esteem is not influenced if they are not good at them. Nonetheless, professionals should pay attention to the physical self perceptions of girls with psychiatric disorders since an individual reaches well-being as all domains of personality including the physical one are developed together. Also, decreased physical exercise among girls has crucial implications for health promotion (Chan, et al. 2003). Thus, interventions through movement should improve girls' positive view of their physical self, enhance their attitudes towards physical activities, as well as search for interesting and appropriate movement exercises, so as to motivate them in the motor domain.

The main purpose of the current study was to investigate the relationship between actual and perceived motor competence of adolescents with psychiatric disorders. The prediction was that actual and perceived motor competence would differ in this sample. The results of the study supported this hypothesis, since no significant correlations were found in the total MQ and Global Self-Esteem, Global Physical Self-Concept and Perceived Coordination of male or female adolescents with psychiatric disorders, who were examined separately, due to the earlier results found. However, sporadic low and moderate correlations between some scales of perceived and some tasks of actual motor competence were found. Comparison with other studies is quite complex, since diverse instruments have used, to calculate different combinations of components. Present outcomes were more similar to the ones of Yun and Ulrich (1997) and Brake and Bornholt (2004), who showed no correlation in the two examining aspects. The current results were less similar to studies which demonstrated low or moderate correlations (Rudisill, et al. 1993; Raudsepp & Liblik 2002; Simons & Vandenbussche, 2006). They were opposite to those of Ulrich (1987), who gave evidence for a higher relationship between objective and subjective motor competence of children.

First of all, due to the nature of the instruments used here, not all components of perceived motor competence were expected to be associated with actual coordination as they were not directly associated. However, perceived coordination of boys and girls could be correlated with the total MQ of the KTK which measures the same component, but no significant correlations were found for either boys or girls. The explanation may be low sample size. So, studies with bigger samples should be conducted. Furthermore, perceptions of competence are developed until middle adolescence as social-cultural changes occur during puberty (Horn, Glenn & Wentzell, 1993). Their younger age might be the reason why participants had not reached accuracy of subjective and objective motor competence. Adolescents with psychiatric disorders in this study had average IQ scores, which mean that the difference in actual and perceived motor competence could not be attributed to low cognitive function. It is also possible cognitive disformations from their psychopathology could have been involved in the inaccuracy illustrated. Diversity of symptoms and diagnoses makes this kind of interpretation complicated, but if Harter's (1978) psychological constructs are taken into consideration, some possible interpretations could be made. Children who have low perceived physical competence and motor problems, like children with DCD, do not participate very often in physical activities (Crocker, et al., 2000; Chan, et al., 2003; Cairney, et al. 2005a, b), and thus have few motor experiences and may therefore be less able to accurately perceive their physical abilities. Thus adolescents may have difficulty interacting with significant others who might be able to encourage them towards precise self perceptions.

In the present study, there was no information about children's overestimation or underestimation of their physical abilities, which would shed more light on the above

discrepancy. Future studies could include precise disorders with bigger samples, in order to specify the exact relationship and give more information about it. Additionally, the reasons for adolescents' poor self perceptions should be examined to help professionals in their interventions.

A limitation of this study was the small number of participants together with the diversity of their diagnoses. Moreover, adolescents with psychiatric disorders who participated in this study were not selected randomly, but according to the criterion of having completed the KTK and the PSDQ. This stands as a limitation for interpreting the results, as participants had been administrated with the PSDQ because the psychomotor therapists of the clinic suspected problems in self-esteem. So, probably all of them had low self-esteem. Finally, the two tests do not measure exactly the same components of actual and perceived motor competence, so studies with matched elements of objective and subjective motor competence should be conducted. Still, the current comparison gives information about a representative aspect of actual motor competence, which is coordination, as well as global self-esteem and global physical self-concept. An added limitation of the current survey was that the age variable was not taken into consideration, although participants' age ranged at about 12 to 16 years of age.

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ISSN 1791-3837