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AUSTRALIAN ADOLESCENTS' MOTOR COMPETENCE AND PERCEPTIONS OF PHYSICAL ACTIVITY OUTCOMES

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Introduction

Benefits that are generally associated with physical activity include enjoyment of the activity, expectation of positive benefits, intention to exercise, perceived fitness or health self-efficacy, intrinsic motivation, and positive physical self-perceptions (Sallis & Owen, 1999). In the Australian context where motor skill is highly valued, the ability to participate in play, games, and sports is likely to be particularly important in the socialization process of adolescents, such as their opportunity for reaffirming friendships and gaining social support from significant others. To be competent at movement would seem a clear advantage in order to experience quality of life through physical activity. However for adolescents who have poor motor competence, whose past experiences in sporting contexts have been less positive, future engagement in physical activity may not be viewed as so worthwhile.

From a theoretical perspective motor competence has been closely linked to positive self-perceptions (Harter, 1999; Nicholls, 1990) and feelings of self-efficacy (Bandura, 1997). Furthermore, the choices individuals make are directly related to their expectancies for success, and subjective values they place on the options they perceive to be available (Eccles, Barber, & Jozefowicz, 1999). Empirical findings with adolescents (Cantell, Smyth, & Ahonen, 2003; Poulsen, Ziviani, Cuskelly, & Smith, 2007) suggest that level of motor competence is associated with psycho-social outcomes that in turn influence the intrinsic motivation to engage in physical activity. Even with marginal motor difficulties, adolescents perceive greater barriers to exercise (Rose, Larkin, Hands, & Parker, 2008) but there is little known of how adolescents with low motor competence perceive outcomes of future engagement in physical activity differently to their better coordinated peers. Their difficulties are not only frequently overlooked but are compounded by not experiencing the joy of participation and benefit from the healthy outcomes of physical activity so important to quality of life. Furthermore, there is evidence that movement difficulties experienced in childhood do not go away and there are often physical and psycho-social difficulties extending into adulthood (Cantell, Smyth, & Ahonen, 2003).

In our study we proposed that adolescent girls and boys who differ in level of motor competence will also differ in their perceptions of benefits gained from any future engagement in sports and physical recreation. These proposed differences especially may be evident in physical and social evaluative settings where according to Harter (1999) adolescents are particularly vulnerable. She found that subgroups experiencing motor difficulties are likely to have a diminished view of their physical selves and be unwilling to participate in physical activities. If little positive benefit is perceived from participation there are strong implications for physical health associated with low energy expenditure and for overall quality of life. Considering that gender is linked to academic, occupational and recreational choice (Eccles et al., 1999) and that socialization for girls in sport often differs from that of boys (Coakley, 2007), girls may view their future in physical activity as less rewarding. This might have implications not only for girls but particularly for those girls who also lack competence in movement. Boys also may experience disadvantage if their motor competence does not reach the expectations of a sport oriented society (Poulsen et al., 2007). Our purpose here was to examine the likelihood of experiencing positive or negative outcomes from engaging in physical activity in adolescent boys and girls who differed in level of motor competence.

Method

Participants

Participants were 1571 14-year-old adolescents (766 girls and 805 boys) who were volunteers in a larger longitudinal (Raine) study.

Instruments

To measure motor competence we employed the McCarron Assessment of Neuromuscular Development (MAND; McCarron, 1997) that comprises 5 fine motor tasks (placing beads in box, placing beads on rod, sliding a rod along a bar, screwing a bolt through a nut, and finger tapping) and 5 gross motor tasks (heel toe walking, grip strength, standing broad jump, one foot balance and touching from finger, to nose, to finger). The measure of motor competence, the MAND Neurodevelopmental Index (NDI) was calculated from participants' performances on both fine and gross motor tasks, with scores on each task scaled according to chronological age and sex to yield an overall score (M = 100, SD = 15).

The likelihood of experiencing positive or negative effects from being physically active in the next 6 months was assessed by participants' responses to a 15 item questionnaire that used a 7-point Likert scale. These items required them to answer questions about outcomes of being physically active on (a) enhancement of health, (b) helping to study, (c) physical appearance, (d) feeling good about one self, (e) keeping fit, (f) preventing from doing other things, (g) weight loss, (h) laughed at by others, (i) injury, (j) having fun, (k) making parents happy, (l) spending time with friends, (m) making new friends, (n) opportunity to compete, and (o) the chance to win at something (Booth et al., 1997).

Procedures

The ethics committee of Princess Margaret Hospital provided approval to carry out the research. All testing was carried out by trained researchers. Participants completed the questionnaire before performing the MAND test.

Results

The participants were grouped according to their Neurodevelopmental Index (NDI) scores on the MAND as having; very low (NDI < 71) (n = 58), low (NDI 71-85) (n = 307), medium (86-114) (n = 902), and high (NDI > 115) (n = 304) motor competence. The 4 (Competence) X 2 (Gender) ANOVAs revealed significant differences between competence groups on questions relating to (a) enhancement of health (p = .000), (b) helping to study better (p = .01), (c) feeling good about one self (p = .000), (d) keeping fit (p = .000), (e) having fun (p = .005), (f) opportunity to compete (p = .007), (g) the chance to win (p = .003) and laughed at (p = .000) (See Figure 1). Significant gender differences were found for (a) helping to study (p = .009), (c) feeling good about one self (p = .035), (d) spending time with friends (p = .001), (e) opportunity to compete (p =.007), and (f) the chance to win (p = .001). There was a Competence x Gender interaction for making new friends (p = .047). The post hoc analyses showed that the groups with high motor competence were generally more positive about outcomes from participation in physical activity than the groups with low and very low motor competence. Girls were more positive about outcomes from physical activity in terms of helping them to study and feeling good about oneself, but less positive in terms of spending time with friends, opportunity to compete, and the chance to win. For making new friends the competence by gender interaction was due to the lower perceptions of the girls in the very low competence group and the boys in the low competence group when compared to the other groups.

Discussion

It was clear from our results that level of motor competence made a difference in how adolescents viewed the future outcomes from physical activity. The boys and girls with higher levels of motor competence perceived more positive outcomes and less negative outcomes from engagement in physical activity. By contrast the adolescents in the low and very low groups perceived less optimism in terms of positive physical and psycho-social outcomes from physical activity. All groups differed from each other for health benefits and being laughed at. Health benefits were perceived as more likely in the higher competence groups and being laughed at was more likely in the lower competence groups. Feeling good about one's self and having fun was a more positive outcome for the high and medium groups in contrast to the low and very low groups. In terms of fitness, the low and very low groups perceived less positive outcomes. In terms of winning, the high group was significantly more positive than the low and very low groups, while the very low group was less positive than the other groups when it came to the opportunity to compete. The motor competence groups did not show significant difference for outcomes related to improving appearance, and losing/controlling weight, increasing current injury, preventing them doing other things, and making parents happy. Boys were more positive about the outcomes of spending time with friends, the opportunity to compete and win something. Girls, regardless of their motor competence, perceived more benefits with respect to studying and feeling good about themselves. The finding for competition and winning is consistent with the literature (Coakley, 2007). The finding that boys were more likely to spend time with friends contrasts with the often accepted view that girls are more likely to pursue sports to make friends. However our results must be cautiously interpreted as the girls in the very low group were clearly less likely to perceive friendships as an outcome. However it is possible that in the Australian context, where the media especially promotes sport as enhancing masculine bonding, boys are more likely than girls to perceive that friendships will be an important outcome of being physically active.

Conclusion

Our findings indicate that the likelihood of positive outcomes from being physically active is generally lower in groups with low and very low motor competence and contrasts with those who have higher levels of motor competence. Our results extend the links between motor competence, self perceptions and the desire to participate in physical activity. Overall our results indicate that boys and girls perceive different outcomes from being physically active.

References

Bandura. A. (1997). *Self efficacy: the exercise of control*. New York: W. H. Freedman

Booth, M. L., Macaskill, P., McLellan, L., Phongsavan, P., Okely, T., Patterson, J., et al. (1997). *NSW schools fitness and physical activity survey*. Sydney: NSW Department of Education and Training.

Cantell, M. H., Smythe, M. M. & Ahonen, T. P. (1994). Two distinct pathways for developmental coordination disorder: persistence and resolution. *Human Movement Science, 22(4-5), 413-431.*

Causgrove Dunn, J. & Watkinson, E. J. (2003). A study of the relationship between physical awkwardness and children's perceptions of competence. *Adapted Physical Activity Quarterly, 11*. 275-283.

Coakley (2007). *Sport in society: issues and controversies.* Boston: McGraw Hill.

Eccles, J. S., Barber, B., & Jozefowicz, D. (1999). Linking gender to educational, occupational and recreational choices: Applying the Eccles et al model of achievement related choices. In W. B. Swann, J. H. Langlois, & L. A. Gilbert (Eds.). *Sexism and stereotypes in modern society. The gender science of Janet Taylor Spence* (pp. 153- 192). Washington, DC: American Psychological Association.

Harter, S. (1999). *The construction of the self. A developmental perspective*. New York: Guilford.

McCarron. L. (1997). *MAND: McCarron Assessment of Neuromuscular Development*. Dallas, TX: Common Market Press.

Nicholls. J. G. (1990). What is ability and why are we mindful of it? A developmental perspective. In R. J. Sternberg R. J., & J. Kolligan. *Competence considered* (pp.11-40). New Haven, CT: Yale University Press.

Poulson, A. A. Ziviani, J. M. Cuskelly, M. & Smith, R. (2007). Boys with developmental coordination disorder: Loneliness and team sports participation. *American Journal of Occupational Therapy*, 61(4), 451-462.

Rose, E., Larkin, D., Hands, B., & Parker, H. (2008) Issues in the identification of Developmental Coordination Disorder *Proceedings: European Congress of Adapted Physical Activity*, Turin, Italy.

Sallis, J. F., & Owen, N. (1999). *Physical activity and behavioral medicine*. Thousand Oaks. CA: Sage.

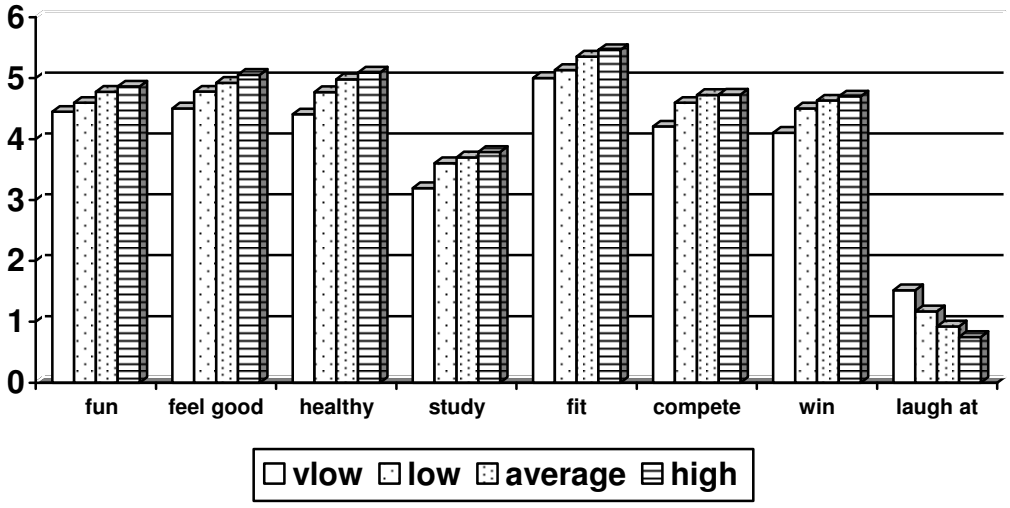

Figure 1. Mean differences between motor competence groups likelihood of experiencing effects of being physically active.