

Case Study

A Longitudinal Study of Children's Attitudes Regarding Physical Activity

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ABSTRACT

A multiple longitudinal sample of 58 boys and 56 girls' attitudes about six subcategories of physical activity were measured from Grades 4 to 6. Children's attitudes towards physical activity (CATPA) were generally positive for both genders, with girls showing more favourable opinions towards the aesthetic subdomain than boys, consistent with previous studies. The males, on the other hand, demonstrated much more positive sentiments towards physical activity as a source of pleasure and catharsis. Neither the among-grade nor the gender-by-grade comparisons reached statistical significance, showing that group attitude scores were stable. Correlational analyses, on the other hand, demonstrated a lack of CATPA stability within people across the grades investigated. Factor analysis offered more evidence that CATPA is not a permanent behavioural tendency. The findings are examined in light of past cross-sectional studies, and implications for future study are drawn.

Keywords: Sports, Children, Attitudes, Physical Activity

The idea of attitudes is not just a focus of investigation in social psychology, but it is also a topic of interest in athletic psychology. This concern is reflected in the design and development of instruments for assessing attitudes towards a wide range of attitude objects, such as sportsmanship, severe competition, and physical fitness and exercise (see Albinson, 1975). Kenyon's (1968, 1968) development of an instrument to assess attitudes towards physical activity (ATPA) based on a conceptual model defining physical activity as a multidimensional phenomena resulted in a significant advance in attitude research (Kenyon, 1968). Physical activity as a social experience, health and fitness, the pursuit of vertigo, an aesthetic experience, catharsis, and austere experience were the six subgroups or dimensions identified. Kenyon's assessment has been used with adults and high school students for multiple studies on ATPA and its link with various situational and dispositional variables during the last few years (e.g., Alderman, 1970; Dorfman, 1968; Lockhart, 1971; Mullins, 1969; Straub & Felock, 1974; Zaichkowsky, 1975).

Although understanding people's ATPA may have some potential benefit, Martens (1975) emphasises that "the important role of researching attitudes is to learn how these attitudes are generated, how they may be modified, and how they relate to actual conduct" (p. 137). In this regard, the middle childhood period is very important because this is when basic attitudes are

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Received: November 02, 2019; Revision Received: December 22, 2019; Accepted: December 30, 2019

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formed (Ausubel & Sullivan, 1970; Geoghegan, Pollard, & Kelly, 1963; Lee & Lee, 1958). It should be emphasised that the concept of an enduring behavioural disposition is a common aspect in conceptualizations of the attitude concept throughout the many definitions accessible (e.g., Kenyon, 1968; Krech, Crutchfield, & Ballachey, 1862; Leventhal, 1974; Rokeach, 1968). As a result, ATPA is regarded to be a rather constant feature. Unfortunately, nothing is known about the nature and features of ATPA when they were formed. In light of this, the current study focuses on a longitudinal examination of children's attitudes towards physical activity (CATPA) in order to establish their level of stability during middle childhood.

INSTRUMENTATION AND PROCEDURES

For CATPA assessment, Simon and Smoll's (1974) semantic differential inventory, an adaption of Kenyon's (1968) tool, was used. The format and substance of Kenyon's scales were closely followed in constructing the CATPA inventory, but significant adjustments in phrasing made the instrument suited for the reading competencies of elementary school children in Grades 4 through 6. CATPA is measured for each subdomain using a 7-point semantic difference scale for each of eight bipolar adjectives, providing scores ranging from 8 to 56 for each of the six subdomains. The CATPA inventory has demonstrated strong internal consistency (Hoyt reliabilities ranging from .80 to .89) and test-retest reliabilities of approximately .60 (6-week time interval) (Simon & Smoll, 1974).

RESULT

A 2 X 2 MANOVA, gender by sample (dropouts vs. survivors), was used to determine whether attrition was random in terms of attitudes, i.e., whether selective drop-out occurred. The six CATPA scores obtained in Grade 4 were the dependent variables. The nonsignificant sample and gender by sample effects revealed that participants with complete data (survivors) were no different from those who died after 1 or 2 years (dropouts). As a result, the reasons of attrition were shown to be independent of the dependent variables under investigation (i.e., CATPA). Hoyt reliabilities measured internal consistency varied from .70 to .92 for boys (median = .84) and from .67 to .91 for girls (median = .85). These results compare favourably to earlier studies (Simon & Smoll, 1974; Smoll, Schutz, & Keeney, 1976). There was no difference in internal consistency across grades for either gender.

Particular contrasts added to the set of 18 dependent variables enabled relevant preplanned comparisons to be tested within the 2 X 2 MANOVA. There was a significant gender effect across grades, $F(6, 105) = 15.77, .001$, with follow-up univariate F ratios being significant for the vertigo ($p.01$), aesthetic ($p.01$), and catharsis ($p.04$) subdomains. The boys had more favourable attitudes regarding physical activity as a means of achieving vertigo and catharsis, whereas the girls had a more favourable attitude towards the aesthetic dimension. The absence of grade differences in CATPA is indicated by a nonsignificant multivariate F ratio for the set of among grade comparisons, $F(12, 99) = 1.01, p = .45$, and gender by grade comparisons, $F(12, 99) = 1.19, p = .30$.

For the males, each grade pair had numerous significant ($p.05$) canonical connections. Contrary to what was discovered for the girls, the structure of these partnerships was not obvious. The coefficients demonstrated the absence of any form of pattern in terms of any specific subdomain contributing to the connection. The first substantial canonical link between Grades 4 and 5 appeared to be explained by a relationship between the catharsis subdomain in Grade 4 and a combination of the health and fitness and aesthetic aspects in

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Grade 5. The remaining important canonicals were also the result of a weighted mixture of several subdomains, with distinct subdomains predominating in each case.

Given the lack of any pattern of attitude stability across grades, factor analysis (principal components with varimax rotation) was used as an experimental tool to see if any alternate structure exists. Because the component structure and loadings for the boys and girls were so similar, the two groups were combined, providing the factor analysis solution shown in Table 5. This solution has a very clear structure, similar to Thurstone's (1947) "basic structure," with practically every variable loading more than .50 on one and only one element. The only variable that was not represented was the ascetic subdomain, Grade 5. It is clear that two of the factors (2 and 3) are attitude factors, accounting for 25% of the overall variance. The remaining three components are grade factors (1, 4, and 5), which account for 36% of the overall variance.

DISCUSSION

According to Kenyon (1968) and Simon (1973), the CATPA scores revealed positive attitudinal dispositions (mean values more than 32 units) for both gender groups across the grades studied. Simon conducted the CATPA inventory to 922 fourth-, fifth-, and sixth-grade students from five elementary schools in the Bellevue, Washington School District—the same neighborhood where the current data were gathered. The ATPA inventory was administered to 720 Grade 10 and 12 students in Cleveland, Ohio, as part of Kenyon's cross-national study. It should be emphasized that the CATPA and ATPA inventories are equivalent (Schutz & Smoll, 1977), therefore legitimate comparisons can be performed between research that used both inventories. The magnitude and direction of gender differences in the aesthetic subdomain for elementary school students were the only consistent findings between this study and Simon's. In both situations, girls outperformed males across all grade levels (at least twice the magnitude of the difference which existed within any other subdomain). Unfortunately, the following five subdomains' between-gender analyses failed to completely reproduce Simon's findings.

The lack of a substantial grade effect in the current study is consistent with Simon's (1973) findings. Only the health and fitness subdomain revealed a significant grade difference in her study. However, the difference was very minor (a maximum differential of 1.6 units between grades), and it was discovered using a univariate ANOVA rather than the less effective MANOVA utilised here. Both investigations found no significant grade by gender relationship. Those data may lead one to believe that CATPA is an attribute that demonstrates I stability for students in Grades 4 to 6. Yet, the availability of longitudinal data allows for explanation of the true nature of such indicators' stability across time. Bloom (1964) defines a stable feature as one that has a correlation of more than .50 between two measurements taken at least one year apart. Only the aesthetic subdomain for females may be classed as displaying year-to-year stability during the time span analysed, according to this criterion (i.e., Grades 4-5 and 5-6). According to the Grade 4 to 6 correlations in Table 3, none of the subdomains for either gender demonstrated stability over a two-year period. (In fact, just one of the 12 correlations was more than .35.) Furthermore, the stronger correlation for the aesthetic subdomains is very likely due to the significantly higher interindividual heterogeneity for this subdomain. More precisely, the few people who scored extremely low in this dimension did so consistently across grades, exaggerating the correlations. On the basis of nonsignificant grade effects, both Kenyon's and Simon's cross-sectional analyses inferred stability. Nevertheless, such findings are limited to grade equivalency and give no foundation for drawing inferences about the durability of individual features. This

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longitudinal study's correlational statistics clearly show that CATPA is not a stable attribute from Grades 4 to 6. The results of the canonical analysis provide more evidence that CATPA and its subdomain interrelationships do not remain consistent throughout time (the exception being the aesthetic subdomain for girls). Given the lack of consistent grade-to-grade attitude correlations, it is not unexpected that prior research (Smoll et al., 1976) failed to discover a consistent across-grade pattern in the association between CATPA and participation in physical activities.

What do these findings mean in terms of the idea that ATPA, and more specifically CATPA, are stable attributes? The current study's findings clearly refute the concept of CATPA as a permanent trait for boys and girls in Grades 4 to 6. Although the average of a group may be steady across grades, this should not be taken as demonstrating individual stability. Due of this lack of consistency, it is unreasonable to expect consistent CATPA-behavior connections across grade levels, nor should CATPA be employed in any research concentrating on individual differences variables. On the other hand, the CATPA inventory can be a useful tool for determining group status. The latest CATPA findings raise severe concerns about the premise of ATPA stability. Although the lack of stability of CATPA may be limited to the elementary school years, there is no evidence to support the notion of ATPA as a long-term entity for older populations. The concept that ATPA is stable at older ages has yet to be tested.

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Acknowledgements

The author appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

How to cite this article: Damor J.D (2019), A Longitudinal Study of Children's Attitudes Regarding Physical Activity. *International Journal of Indian Psychology*, 7(4), 1146-1150. DIP:18.01.133/20190704, DOI:10.25215/0704.133