

Development of Questionnaire for Assessment of Difficulties in Implementation of Physical Education Program in Schools of Maharashtra

Abstract

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Abstract

Background and objective: The aim of this study was to develop a questionnaire for assessing difficulties in implementation of physical education program in schools of Maharashtra.

Design: The first draft of the questionnaire (88 items) was based on literature review. To ensure content validity and expert-assessed face validity, an expert panel examined the questionnaire. Thereafter, the questionnaire was pilot tested in a group of 20 physical education teachers from Solapur district of Maharashtra. The results were analyzed for item difficulty, internal consistency and comments made by respondents were taken into account. In addition the test retest, validity and a total overview of the questionnaire was made by the expert panel. The final questionnaire consisted of 72 items.

Subjects: The study was administered in 345 physical education teachers from Solapur district of Maharashtra (n=345).

Results: Results of this study showed that the test retest reliability coefficient was ranged from 0.51 to 0.73. Further, split half reliability was determined in calculating the relationship between the score of each physical education teacher (even and odd number) in the questionnaire ($r=0.63$, $p<0.01$). This ensures that the questionnaire is reliable. Finally, the questionnaire was having 72 items/ questions.

Conclusion: The questionnaire had reasonable content-, face-, and construct validities and overall good reliability. The questionnaire can be a useful tool for assessing difficulties faced by physical education teachers in implementing physical education program in schools of Maharashtra.

Keywords: questionnaire; physical education.

Introduction

Physical Education in schools is the primary instrument for preparing children with the skills, knowledge and confidence to lead physically active lives^[1]. The health enhancing properties of physical activity are evidence-based and widely accepted. Physical activity is any bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure^[2]. It includes active living, active play, sport, physical education and active transport. Current Department of Health and Children guidelines recommend that children and youth participate daily in at least 60 minutes of moderate to vigorous intensity physical activity. This activity should be developmentally appropriate, involve a variety of activities and be enjoyable. Physical activity is important to children's current and future health, and adherence to the physical activity guidelines produces a range of direct and indirect benefits. It assists in the control of body weight by increasing energy expenditure, this is important in teaching children

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and young people how to achieve a healthy 'energy balance', and avoid developing adult obesity. It reduces the risk of developing premature cardiovascular disease, type-2 diabetes, metabolic syndrome and some site specific cancers. Weight bearing physical activity is important in bone formation and remodeling. In addition, physical activity reduces depression and anxiety (especially in shy children), enhances mood, self-esteem and quality of life^[3-10].

Participation in regular health enhancing physical activity has also been found to reduce rule-breaking behavior, and to improve attention span and classroom behavior. It has positive effects on academic performance, including achievement in math tests and reading, academic grades and perceptual skills. Involvement in sport and physical education can play a significant role in the enrichment of a child's social life and the development of social interaction skills. Childhood provides a great opportunity to influence attitudes and participation levels positively towards physical activity. A child who emerges from school with confidence in their physical body and skills and who has been exposed to positive experiences in physical activity is more likely to adhere to an active lifestyle as they age.

In addition, the proportion of children and young people who walk or cycle to school, a source of daily physical activity, is declining dramatically^[11]. Schools are an important setting for young people to take part in, and learn about, physical activity. Through physical education programmes, free play activity and extra-curricular sport, schools can provide time, facilities and guidance for children and youth to safely access physical activity opportunities and develop competence and confidence in an environment that is supported by teachers, parents and friends. Schools are also a setting for under-represented population sub groups to gain access to quality physical activity experiences. However, decreasing physical education programmes in schools, pressure from the school curriculum to reduce time spent in free play, lack of training and senior management support for teachers, particularly at the primary level, and the removal of dedicated green spaces or play areas in schools is an alarming trend worldwide^[12].

Although several studies revealed about the benefits of implementation of physical education and sports programme at an elementary level still there are some barriers for implementing these programmes. In fact, in order to understand the barriers to physical activity more clearly, the particular constraints and other factors identified by those responsible for providing school-based opportunities need to be examined. Most of the existing empirical evidence concerning barriers to physical education has focused on adolescents' (rather than children's) perspectives^[13-15]. With the exception of some studies that have examined teachers' perspectives on mandated educational reform^[16], there have been few studies examining barriers to opportunities from the perspective of those working in the delivery system^[17]. In one of these studies, teachers in British Columbia were surveyed by phone to examine their implementation of the provincial physical education curriculum. They commented that physical education was given low priority in the school system. Generalist teachers provide physical education in most elementary schools and student achievement in physical education was not assessed. They commented that some schools do not have adequate facilities and equipment. Further, though the physical education programme is made compulsory in school there is lack of evidence whether these programmes are implemented properly. Hence, the main objective of this study was to develop a valid questionnaire to find out the barriers for implementing physical education and sports programme in schools of Solapur district. Furthermore, this inventory can be an effective tool to find out the difficulties arising in implementing the physical education programme in schools.

Methods and Results

The questionnaire development process consisted of four steps : (1) preparation of scope and structure; (2) development of questionnaire items; (3) pilot study for further development of the questionnaire; and (4) test and retest for construct validity assessment and reproducibility.

Step 1 Preparation of scope and structure

A literature review of the availability of sports facilities and difficulties rose in acquiring or implementing the syllabus was performed to define the scope of questionnaire. In addition, telephone calls and personal meetings were held with professionals working in the area of physical education sports to get in-depth information of the different aspects the questionnaire should cover. Based on this information and available literature on the requirement of sports facilities and intricacies involved in implementation, it was decided to divide the questionnaire into eight main sections assessing 1) Applicability of syllabus of physical education. 2) Availability of proper books and handbooks on physical Education. 3) Implementation of Time Table. 4) Facility of playfields. 5) Duties of Physical Education Teachers. 6) Attitude of institutional head or other teachers towards physical education teacher. 7) Sports competition and achievement. 8) Contribution from State Govt.

Step 2 Development of questionnaire items

Based on the literature review and the eight chosen categories, an item pool of 88 items was generated. Each chosen dimension represented by 11 questions. Content validity refers to how representative the items are in covering the subject matter. To ensure content validity and face validity, the item pool was evaluated by an expert panel of three experts in the field of sports and physical education and three psychologists. The experts received the item pool of 88 items and were requested to evaluate them for accuracy, appropriateness, and relevance related to measuring intricacies in implementation of physical education programme in schools. The expert panel selected 72 items from the item pool. In addition, one expert of questionnaire development was consulted to improve structure and layout.

Step 3 Pilot study

The test retest reproducibility of a questionnaire is the extent to which it produces the same results, when applied repeatedly in the same situation with the same persons. The time lag between the measures should be long enough for precise answers to be forgotten and short enough to minimize real change of knowledge. Pearson's correlation was used to measure the reliability between test and retest. Primarily, the questionnaire was administered on 20 physical education teachers from Solapur district and was re-administered after a gap of one month. Table 1 shows the test-retest reliability coefficient was ranged from 0.51 to 0.73. After the retest, a total overview of the questionnaire was made by the expert panel.

Table 1
Test-retest reliability of the questionnaire

Dimensions	Coefficient of reliability
1) Applicability of syllabus of physical education	0.62*
2) Availability of proper books and handbooks on physical Education	0.56*
3) Implementation of Time Table	0.67*
4) Facility of playfields	0.51*
5) Duties of Physical Education Teachers	0.73*

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6) Attitude of institutional head or other teacher towards physical education teacher	0.64*
7) Sports competition and achievement	0.59*
8) Contribution from State Govt.	0.54*
*p<0.01	

Step 4 administration of questionnaire on large sample

In this phase, the preliminary form of the questionnaire was administered on large sample (n=345) and the data were processed for item analysis. Each item (question) considers two types of analysis viz., degree of item difficulty (item-difficulty-index or cP) and item-discrimination (ULI i.e., Upper-Lower Index). The dimension-wise average values of item-difficulty index and item-discrimination are presented in Table 2.

Table 2
Values of item-difficulty index and item-discrimination
(Dimension-wise)

Dimensions	No. of items/questions retained	Item difficulty-index or cP*	Item discrimination**
1) Applicability of syllabus of physical education	10	0.653	0.437
2) Availability of proper books and handbooks on physical Education	08	0.597	0.351
3) Implementation of Time Table	07	0.538	0.412
4) Facility of playfields	12	0.616	0.378
5) Duties of Physical Education Teachers	08	0.520	0.392
6) Attitude of institutional head or other teacher towards physical education teacher	09	0.553	0.340
7) Sports competition and achievement	13	0.637	0.365
8) Contribution from State Govt.	05	0.608	0.339
Retained items =72			

* Accepted range of cP value: From 0.5 to 0.7.

**Accepted range of ULI: Above 0.33

Table 2 reveals that the values of item difficulty and item discrimination were retained within a normal range. The result of item analysis indicates that in Dimension-1 (Applicability of syllabus of physical education), Dimension-2 (Availability of proper books and handbooks on physical Education), Dimension-3 (Implementation of Time Table), Dimension-4 (Facility of playfields), Dimension-5 (Duties of Physical Education Teachers), Dimension-6 (Attitude of institutional head or other teacher towards physical education teacher), Dimension-7 (Sports competition and achievement) and Dimension-8 (Contribution from State Govt.), the retained questions were 10, 08, 07, 12, 08, 09, 13 and 05 respectively. Thus, total 72 questions finally retained in the questionnaire.

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Further, split half reliability was determined in calculating the relationship between the score of each physical education teacher (even and odd number) in the questionnaire ($r=0.63$, $p<0.01$). This ensures that the questionnaire is reliable. Finally, the questionnaire was having 72 items/questions and is a reliable and valid tool for the assessment of difficulties raised for implementing physical education programme in schools.

Discussion

In the present study, special attention was given to the development and testing of a difficulties faced by physical education teachers in implementing physical education syllabus in schools. Securing high-content validity was prioritized during the whole development process. The initial item pool consisted of items that already had been through a process considering reliability and validity. New items were added to the questionnaire if the experts considered that certain aspects were not covered. Every draft was reviewed by the expert panel to select the best items in terms of clarity of the items, interpretability, and accuracy of the knowledge area being measured. Separating the questionnaire into eight main sections gives the possibility to assess both general and more specific aspects regarding implementation of physical education and sports programme in schools.

Conclusions and Implications

This questionnaire was designed to assess the difficulties faced by physical education teachers in implementing physical education and sports programme in schools. The questionnaire had reasonable content-, face-, and construct validities and overall good reliability. The questionnaire should provide a useful tool for assessing difficulties or barriers faced by physical education teachers in implementing physical education programme and sports in schools. In fact, this tool also could be used with minor adjustments according to need.

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