



ORIGINAL SCIENTIFIC ARTICLE

DEVELOPMENT OF AN INSTRUMENT BASED ON SALIENT BEHAVIORAL BELIEFS TO MEASURE ATTITUDE TOWARDS PHYSICAL EDUCATION

Moroo Mario^{1ABCDE} and Anindita Das^{1ABD}

¹Lakshmibai National Institute of Physical Education

Authors' Contribution: A – Study design; B – Data collection; C – Statistical analysis; D – Manuscript Preparation; E – Funds Collection

Corresponding Author: Moroo Mario, E-mail: moroolive@gmail.com

Accepted for Publication: September 29, 2022

Published: November 30, 2022

DOI: 10.17309/tmfv.2022.3s.14

Abstract

Study purpose. The study purpose was to develop an instrument to measure students' attitude towards physical education through salient behavioral beliefs.

Materials and methods. The participants of the study were both boys and girls of grades 7 to 10 from the state of Manipur (India) in the first, second and fourth phase. In the first phase, based on the recommendation of the theory of reasoned action and its extension, the theory of planned behavior, an elicitation study was conducted using open-ended questions, where a total of 308 student responses were collected. The student responses were used to develop items through content analysis. In the second phase, i.e. content validity study, a total of 5 experts were recruited to evaluate the developed items from the elicitation study. In the third phase i.e. pilot study, out of the total of 123 student responses, 104 student responses were found to be usable for analysis. In the fourth phase, i.e. main study, out of the total of 433 student responses, 377 student responses were found to be usable for analysis.

Results. Due to lack of good model fit from the pilot study, a second exploratory factor analysis was conducted with the first half of the main study data which produced a three-factor model, and this model was tested with confirmatory factor analysis with the other half of the main study data. The model fit indices were found to be appropriate, and also the composite reliability and construct validity were found to be appropriate.

Conclusions. This belief-based attitude measuring instrument was found to be valid and reliable for grades 7 to 10 in the Indian physical education context, i.e. schools which incorporate both yoga and physical education in the general physical education curriculum.

Keywords: attitude, physical education, salient behavioral beliefs, theory of reasoned action, theory of planned behavior.

Introduction

In our daily lives, physical activity is crucial. The goal of physical education isn't for students to engage in physical activity solely during school hours. The ultimate desirable outcome of physical education would be for students to engage in enough physical activity each day and to instill a lifelong habit of staying active. Otherwise, physical education is reduced to a simple subject that is exclusively taught in schools.

The growing prevalence of obesity in India makes emphasizing the necessity of physical activity even more important. Obesity has risen substantially as a result of a sedentary lifestyle and a high-calorie diet (Ahrwar & Mondal, 2019).

In India, the majority of children are found to be sedentary and they do not meet the recommended levels of physical activity (Katapally et al., 2016). In this aspect, physical education can be an effective tool for reducing obesity and increasing physical activity however, it is critical to know whether students have a positive experience with physical education in schools. According to Fishbein and Ajzen (1975), experiences may form either positive or negative beliefs and hence either positive or negative attitude towards an object. The attitude object referred in this study is physical education. Assessing attitude may lead us to know whether students are having a positive or negative experience of physical education in schools.

Subramaniam and Silverman (2007) stated that the physical activities that students participate during physical education should have personal value for them and make them feel like active learners. We can prepare teenagers for

lifetime physical activity involvement through this active and meaningful engagement. Studies such as Solmon and Lee (1996) and Wallhead and Buckworth (2004) (as cited in Phillips & Silverman, 2012) found that in order to persuade students to engage in physical activity outside of school, it has been proposed that positive experiences in physical education and the development of favorable attitudes about physical activity are prerequisites.

Attitude is an indicator of how much a person likes or dislikes an object, and «object» is used in a general sense to refer to any aspect of the personal world (Ajzen & Fishbein, 1980). They also stated that the more positive a person's attitude toward an activity is, the more likely he should aim to engage in that conduct; the more negative his attitude is, the more likely he should avoid engaging in that behavior and vice versa.

Ajzen and Fishbein's (1980) the theory of reasoned action (TRA) and also the extension developed by Ajzen (1991) the theory of planned behavior (TPB) has guided this study. According to Ajzen (1991), salient beliefs must be obtained from a sample of respondents who are typical of the research population. If a set of belief statements are chosen at random or based on intuition, many associations to behavior that are not salient in the population will be included. Also, salient beliefs may differ from context to context. In India, the difference in physical education context is that Yoga is part of the physical education curriculum in schools, meaning to say that both yoga and physical education comes under the general physical education curriculum (National Curriculum Framework, 2005). Obtaining salient beliefs from the Indian physical education context is important. Therefore, adapting or using existing comparable instruments may do injustice although Subramaniam and Silverman (2000), Montalvo and Silverman (2008), Phillips and Silverman (2012) and Constantinides and Silverman (2018) were existing comparable instruments which have sound attitude and psychometric theory.

Salient beliefs are those that immediately spring to mind when thinking about the object and function as the dominant factors determining the attitude (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Specifically, in this study out of the three kinds of salient beliefs only behavioral beliefs was considered since this is assumed to influence attitudes toward the behavior. On the other hand, the other two salient beliefs such as normative and control beliefs are not related to attitude (Ajzen, 1991; Ajzen & Driver, 1991).

The summative belief index and a person's attitude are directly correlated. This type of measurement of attitude can also be termed as belief-based measure of attitude (Ajzen, 1991) and also in research from Sutton et al. (2003) found that positive salient beliefs have positive attitudes. Thus, developing a closed-ended instrument based on salient behavioral beliefs to measure attitude towards physical education among school students i.e. classes 7 to 10 was the objective of the study.

Materials and methods

Study participants

In the first, third and fourth phase, the participants of this study included both boys and girls of classes 7 to 10

from the state of Manipur (India). And in the second phase, 5 experts were recruited for the purpose of content validity.

Study organization

All the phases of data collection were conducted through online using Google forms due to Covid-19 restrictions and the responses were limited to only one throughout.

First phase: Elicitation study – In this phase, open-ended questions were used to elicit salient behavioral beliefs as it is recommended in the TPB. Table 1 shows the open-ended questions. Ajzen and Driver (1991) and Phillips (2011) researches were used to create questions 1 and 2. Questions 3 and 4 were based on Ajzen and Driver's research (1991). Questions 1 and 2 were related to experiential and questions 3 and 4 were related to instrumental.

Purposive sampling was used to pick four schools from the state of Manipur (India) which included two private schools and two central schools to suit the goal of this study i.e. only schools that incorporate both yoga and physical education in the general physical education curriculum. Permission was obtained from the principals of the chosen schools, after which the open-ended questions (URL link using Google forms) were sent to physical education teachers, who subsequently forwarded to students of classes 7 to 10 via social media (WhatsApp). The demographic variables included gender and classes but did not include school and student name for anonymity reason. Participation by the students was voluntary. A total of 308 student responses were collected and kept in Google Sheets. Content analysis was used to develop closed-ended items. Basically, according to Ajzen and Fishbein (1980) the identical salient behavioral beliefs produced by various students are recognized and categorized as the same. It is also referred as modal salient behavioral beliefs. To illustrate, identical salient behavioral beliefs found in this study from three students' responses were "I don't enjoy yoga class because it's boring to me," "I don't enjoy yoga class because it is boring" and "I don't really like yoga because I am not really into yoga as it is boring for me," were considered as same i.e. these three responses of identical salient behavioral beliefs became a single item as "I don't enjoy yoga in physical education class because it is boring." This led to development of 24 closed-ended items with another addition of a negative item making it 25 items.

Table 1. Open-ended questions

1.	What do you enjoy in physical education class? Why?
2.	What you don't enjoy in physical education class? Why?
3.	What do you think are the advantages of physical education class?
4.	What do you think are the disadvantages of physical education class?

Second phase: Content validity study – The 25 items were subjected to content validity. Invitation letters were emailed to experts, along with a URL link using Google forms which included consent form that was included in the email itself. Experts were chosen based on the profession of physical education (Shrotryia & Dhanda, 2019). In total, five experts from physical education profession consented to participate

where four experts were academicians in physical education with experiences ranging from 11 to 30 years and one was a joint secretary at Central Board of Secondary Education, Delhi with an experience in curriculum of physical education for 20 years.

Thank-you emails were emailed to the experts who consented to participate, along with a URL link for evaluating the instrument (25 items) using Google forms, which was included in the email itself. The experts determined whether the items were necessary for measuring attitude towards physical education. To each of the 25 items, the experts were asked to choose from a three-point Likert scale that included "Not essential", "Useful but not essential" and "Essential". The expert responses were collected and stored in Google sheets. All the expert judgments were submitted to content validity ratio (CVR). According to Lawshe (1975), a CVR value of -1 indicates that all experts disagreed on an item, whereas a CVR value of +1 indicates that all experts agreed on an item. CVR is positive when more than half of the experts suggest "essential" to an item and negative when fewer than half indicate "essential" to an item. When more than half of experts rate an item as "essential", it has some level of content validity. The formula for CVR is $CVR = (n_e - N/2)/N/2$, where n_e = the number of experts who indicated «essential» to each item and N = the total number of experts. Based on the CVR values, 18 items were retained for pilot study.

Third phase: Pilot study and statistical analysis – The most typical response types utilized in attitude scales are Likert items (Lovelace & Brickman, 2013). The 18 items which was proved to having content validity was used for measuring attitude towards physical education by using a 5 point Likert scale. Measurement of attitude in this way can also be termed as belief-based measure of attitude (Ajzen, 1991).

Three central government schools were selected from Manipur based on purposive sampling. Before administering the instrument, permissions were granted by Principals to collect data. URL link using Google forms was created and data was collected based on their consent and assent to participate. It was administered via social media (WhatsApp) through the help of physical education teacher(s). The participants comprised of classes 7 to 10 both boys and girls. Anonymity in school's name and student's name was maintained throughout. A total of 123 student responses were collected and stored in Google sheets. Out of the 123 student responses, 104 student responses were usable for analysis. Student responses which were not usable included inconsistent pattern of responses and straight lining responses. For example, inconsistent pattern of responses were those who agreed on the positive item and again agreed on the negative item (reversed item). And straight lining responses were those who had a same pattern of responses irrespective of the items. The presence of a negative item made easy to recognize genuineness or lack of genuineness in student responses. There were a total response of 42 males and 62 females. Responses of each class were class 7 = 37, class 8 = 20, class 9 = 22 and class 10 = 25. The 104 student responses usable for analysis were subjected to exploratory factor analysis (EFA) where principal component analysis was used as the extraction method with an oblique rotation i.e. direct oblimin. It produced a four factor model with 2 to 5 items in each factor. 13 items were retained in this phase.

Fourth phase: Main study and statistical analysis – Data was collected from eleven central schools of Manipur based on purposive sampling. All the procedures for this phase were the same as pilot study such as administration of the instrument, permission from Principals, anonymity, consent and assent to participate. The participants comprised of classes 7 to 10 both boys and girls.

The 13 items which were retained with respect to exploratory factor analysis was used in this phase. A total of 433 student responses were collected out of which 377 student responses were usable for further analysis. Student responses which were not usable included incomplete responses and inconsistent pattern of responses. There were a total response of 178 males and 199 females. Responses of each class were class 7 = 118, class 8 = 103, class 9 = 74 and class 10 = 82.

Statistical analysis

Confirmatory factor analysis (CFA) was employed to check the four factor model produced by EFA of the pilot study however the model fit was poor. Various methods was tried such as removing items with standardized loading lower than 0.50 and improving multivariate normality by removing cases with respect to observation of Mahalanobis distance of p_1 and p_2 however, the model fit was poor. Due to the lack of model fit, another EFA was conducted with first half of the main study sample i.e. 188 student responses and the other half of the sample i.e. 189 student responses was kept to test the factor model through CFA. According to McDonald (1999) (as cited in Silverman & Subramaniam, 1999), EFA can be conducted again if there is a lack of model fit.

Results

In the first phase i.e. elicitation study, out of the total 308 student responses, identical salient behavioral beliefs were identified and 24 closed-ended items were developed with another addition of a negative item making it 25 items. Items 1 to 12 are instrumental and items 13 to 25 are experiential. Table 2 shows the 25 items (note: neglect the CVR values in this phase).

In the second phase i.e. content validity, items were retained or rejected based on the CVR values, item number 10, 11, 12, 15, 17, 24 and 25 were rejected since CVR values were negative which also suggested that half of the experts did not agree on those items. Item number 19 had negative CVR value however at least one negative item was retained in order to check for inaccurate reflection of response. Item number 19 is basically a reversed of item number 18. Items of positive CVR values ranged from 0.2 to 1. In total, out of the 25 items 18 items were retained i.e. 17 positive items and 1 negative item. Table 2 shows the 25 items with CVR values.

In the pilot study analysis, the usable 104 student responses were taken and EFA was applied. It showed Kaiser-Meyer-Olkin (KMO) as 0.854 and Bartlett's test of sphericity showed it was significant since p-value was below 0.05. Both of these values are deemed as appropriate for running EFA (Hair, L.D.S. Gabriel, et al., 2019). Communalities of the variables which were retained ranged from 0.614 to 0.871 and thus considered as appropriate (Hair, Black, et al., 2019). Total variance explained was 75.346 and thus deemed as ap-

Table 2. CVR values for each items

Item No.	Items	ne	CVR
1	Physical education class gives me knowledge on health.	4	0.6
2	Physical education class teaches me how to keep myself healthy.	5	1
3	I get to learn about games in physical education class.	5	1
4	Physical education class teaches me self-discipline.	3	0.2
5	Physical education class improves my leadership skills.	4	0.6
6	Exercise is important in physical education class.	5	1
7	Physical education class helps me to improve my skills in games.	4	0.6
8	Physical education class helps me to learn teamwork.	4	0.6
9	Yoga is important in physical education class.	3	0.2
10	Physical education class is not important as other subjects.	1	-0.6
11	I get tired for the next class after physical education class.	1	-0.6
12	Physical education class wastes my time.	1	-0.6
13	I enjoy yoga in physical education class.	3	0.2
14	I enjoy games in physical education class because it is fun.	5	1
15	I don't enjoy yoga in physical education class because it is boring.	1	-0.6
16	I enjoy exercise in physical education class.	5	1
17	I don't enjoy games in physical education class.	2	-0.2
18	I enjoy playing games with my friends in physical education class.	5	1
19	I don't enjoy playing games with my friends in physical education class.	1	-0.6
20	I enjoy exercise with my friends in physical education class.	5	1
21	I enjoy learning new activities in physical education class.	4	0.6
22	I enjoy playing different types of games in physical education class.	4	0.6
23	I enjoy learning new games in physical education class.	5	1
24	I don't enjoy repeating the same activity in physical education class.	2	-0.2
25	I don't enjoy excessive exercise in physical education class.	2	-0.2

propriate (Hair, L.D.S. Gabriel, et al., 2019). Recommended factor loadings were considered and the values ranged from 0.576 to 0.911 which were all above 0.50 (Hair et al., 2014). Following the extraction as PCA with a direct oblimin rotation, four factors were retained. The items under each factors ranged from two to five consisting a total items of thirteen. Table 3 shows the retained items after EFA. Items 1, 6, 8, 9, 12 and 13 are experiential and the rest of the items are instrumental.

In the main study, the usable 377 student responses were taken for analysis. Owing to the lack of model fit, we conducted another EFA with the 13 items from the main study sample. EFA was conducted with first half of the main study sample i.e. 188 student responses using PCA as the extraction method with an oblique rotation i.e. promax led to retention of 10 items with a three-factor model where three to four items were present in each factors. The Kaiser-Meyer-Olkin (KMO) observed was 0.773 and Bartlett's test of sphericity showed it was significant since p-value was below 0.05. Communalities of the variables which were retained ranged from 0.502 to 0.845 which was considered as appropriate. Total variance explained was 66.519 and also the factor loadings values ranged from 0.528 to 0.916 which were all above 0.50 which were deemed as appropriate. Table 4 shows the pattern matrix from the first half of the main study sample (188 student responses) and the three-factor model produced and the items retained in each factor. The three factors were named as other activities (OA), health (H) and games (G).

This was followed by CFA to test the three factor model as shown in table 4 with the other half of the main study sample i.e. 189 student responses. Multivariate normality could not be fulfilled although 24 cases were deleted by ob-

Table 3. Retained items after EFA of pilot study

Item No.	Items
1	I enjoy playing games with my friends in physical education class.
2	Physical education class helps me to learn teamwork.
3	Physical education class improves my leadership skills.
4	Exercise is important in physical education class.
5	Yoga is important in physical education class.
6	I don't enjoy playing games with my friends in physical education class.
7	Physical education class helps me to improve my skills in games.
8	I enjoy games in physical education class because it is fun.
9	I enjoy exercise with my friends in physical education class.
10	Physical education class gives me knowledge on health.
11	Physical education class teaches me how to keep myself healthy.
12	I enjoy exercise in physical education class.
13	I enjoy yoga in physical education class.

serving Mahalanobis distance of p1 and p2. Due to non-multivariate normality, generalized least square estimation was used. However, the deletion of 24 cases simultaneously led to improvement in model fit. In addition to this, two more items were deleted since their standardized loading was below 0.50 and this also contributed to improvement in model fit. This follows the recommendation of Awang (2015) that deletion of item(s) in CFA should not exceed more than 20% of the overall items.

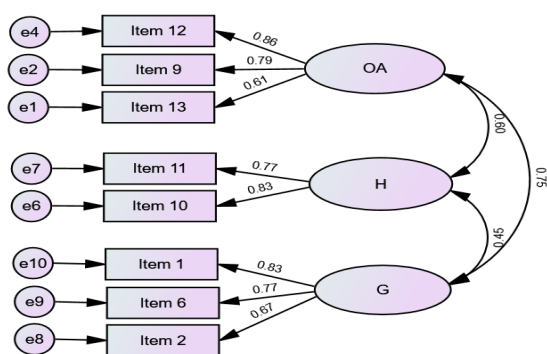
Table 4. Three-factor model produced and the items retained in each factor

Item	Pattern Matrix		
	Component		
	Other activities	Health	Games
Item 12	.768		
Item 8	.744		
Item 9	.625		
Item 13	.549		
Item 11		.865	
Item 10		.800	
Item 3		.580	
Item 1			.916
Item 6			.802
Item 2			.528

Extraction Method: Principal Component Analysis.
 Rotation Method: Promax with Kaiser Normalization.
 a. Rotation converged in 6 iterations.

Goodness of fit index (GFI) greater than 0.90 indicates a good fit (Kline, 2005). Root mean square of error approximation (RMSEA) should be below 0.08 (Browne and Cudeck, 1993). Adjusted Goodness of Fit (AGFI) should be above 0.90 (Tanaka and Huba, 1985). Values of the Comparative Fit Index (CFI) higher than around 0.90 may signify that the model fits reasonably well (Kline, 2005). Chi-square fit statistics/degree of freedom (CMIN/DF) does not exceed the value of 3 (Kline, 2004). Standardized Root Mean Square Residual (SRMR) should be 0.05 or less (Byrne, 2010).

The model fit indices in this study were GFI = 0.959, RMSEA = 0.059, AGFI = 0.914 and CFI = 0.916, CMIN/DF = 1.568 and SRMR = 0.018. Figure 1 shows the CFA diagram.

**Fig. 1.** CFA diagram

Stats tools package offered by Gaskin, J. (2016) has been used for the calculations of composite reliability, convergent and discriminant validity. The standardized loading estimates for all the variables were higher than 0.50. In table 5, the composite reliability (CR) values such as, other activities (OA) = 0.801, health (H) = 0.782 and games (G) = 0.800 which proves construct reliability since the values were higher than 0.70. The average variance extracted (AVE) values were higher than 0.50 for all the three constructs

Table 5. Composite reliability, convergent and discriminant validity

	CR	AVE	MSV	MaxR(H)	H	OA	G
H	0.782	0.642	0.354	0.788	0.801		
OA	0.801	0.577	0.560	0.833	0.595	0.760	
G	0.800	0.573	0.560	0.815	0.453	0.748	0.757

Table 6. Final items with respective constructs

Construct 1: Other activities (OA)	
I enjoy exercise in physical education class.	
I enjoy exercise with my friends in physical education class.	
I enjoy yoga in physical education class.	
Construct 2: Health (H)	
Physical education class teaches me how to keep myself healthy.	
Physical education class gives me knowledge on health.	
Construct 3: Games (G)	
I enjoy playing games with my friends in physical education class.	
I don't enjoy playing games with my friends in physical education class.	
Physical education class helps me to learn teamwork.	

which prove sufficient convergent validity. The AVE value was higher than the maximum shared variance (MSV) value for all the three constructs proving discriminant validity. Table 6 shows the final items retained with their respective constructs.

Discussions

The items found in this study can be considered as unique since they are salient in this specific context i.e. schools which implements both yoga and physical education in the general physical education curriculum. Yoga item, "I enjoy yoga in physical education class" shows the difference in physical education context (table 6: construct 1). Yoga items were not found in existing comparable instruments. In previous studies, one of the reasons why yoga items were not found might be that yoga is not part of the physical education curriculum in their country.

In this study, particularly the items of instrumental and experiential overlapped (table 6: construct 3). Although, initially the questions pertaining to table 1 had separate questions for instrumental and experiential, the EFA pattern matrix indicated an overlapping of items (table 4: factor 3). In the case of Subramaniam and Silverman (2000), Montalvo and Silverman (2008), Phillips and Silverman (2012) and Constantinides and Silverman (2018), their studies had separate items for factors (cognitive and affective) and sub-factors and those determined attitude towards physical education. These could be because of the model they have used which is a dual component i.e. Affective and cognitive factors (Bagozzi & Burnkrant, 1979; Oppenheim, 1992) and that the rotation method they have used in EFA may have been a forced rotation. Fishbein and Ajzen (2010), prefers to use the factor i.e. cognitive and affective as instrumental and experiential since items of these two can overlapped. In this study, although initially the questions had separate factors

however this was not the case as the items of instrumental or experiential overlapped after applying EFA. However, both these items of instrumental and experiential measures the same thing i.e. attitude and so was the case in Ajzen and Driver (1991). It is also not always assured that both items of instrumental and experiential will be included in the final scale and a valid scale to measure attitude need not always necessarily include both instrumental and experiential items (Fishbein & Ajzen, 2010).

The results of this study found that this new instrument for measuring attitude towards physical education based on salient behavioral beliefs were found to be valid and reliable for school students i.e. classes 7 to 10. This new instrument for measuring attitude towards physical education in the Indian physical education context is particularly for those schools which implements both yoga and physical education in the general physical education curriculum. The major strength of this study is that the development of this instrument to measure attitude towards physical education is based on salient behavioral beliefs and hence can be more appropriate since they are salient in this physical education context of India (only schools which incorporate both yoga and physical education in the general physical education curriculum). However, even though it is based on salient beliefs, one of the limitations in this study is that the instruction in the elicitation study was "Write your experiences of the past Physical Education class (not during the Covid-19 situation)". In the elicitation study as seen in Ajzen and Driver (1991), the questions pertained to present and not the past. In this study, elicitation based on covid-19 situation was not possible since physical classes were stopped and therefore questions pertaining to elicitation as shown in table 1 may not be appropriate if it was based during that situation. Due to this reason, the students were asked to write down the answers based on past experiences of physical education class i.e. before Covid-19 and this may create a possibility to some inaccuracy of salient beliefs. Although, we cannot determine precisely the effect of the elicitation on the past experiences instead of the present physical education classes on salient behavioral beliefs in this study, we suggest that this instrument may be used to measure attitude towards physical education since it may not necessarily alter.

This study found that other activities (OA), health (H) and games (G) are the factors which determines attitude towards physical education. Authorities of physical education in India may be benefited by this study and take appropriate action by considering the fact that these factors are influential in determining attitude towards physical education.

For future possible research, as Fishbein and Ajzen (1975) stated that beliefs may change with different experience(s) and therefore, we encourage that future work should go for an elicitation study as per Ajzen and Driver (1991). Also, development of attitude instrument with belief-based for other classes is a possible research.

Conclusion

This instrument which has been developed to measure attitude towards physical education based on salient behavioral beliefs in this context has been found to be valid and reliable. This instrument can be used to measure attitude towards physical education for classes 7 to 10 and particu-

larly for schools which incorporate both yoga and physical education in the general physical education curriculum itself. Also, this belief-based measure of attitude may be more appropriate instead of adapting or using comparable existing instruments since salient behavioral beliefs can be different from region to region and also when there is a difference in context i.e. physical education curriculum.

Acknowledgment

This research was approved by the Departmental Research Committee, Lakshmi Bai National Institute of Physical Education (File number: Academic/Ph.D./Regd./373). I am thankful to the former Head of Department of Physical Education Pedagogy, Prof. (Dr.) G.D. Ghai for the approval of my research. I am also thankful to Ret. Prof. (Dr.) Wilfred Vaz and Dr. Yajuvendra Singh Rajpoot for supporting my research.

Conflict of interest

We declare that there is no conflict of interest.

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РОЗРОБКА ІНСТРУМЕНТАЛЬНОГО ЗАСОБУ НА ОСНОВІ ЯВНИХ ПОВЕДІНКОВИХ ПЕРЕКОНАНЬ ДЛЯ ВИМІРЮВАННЯ СТАВЛЕННЯ ДО ФІЗИЧНОГО ВИХОВАННЯ

Мору Маріо^{1ABCD E} та Аніндіта Дас^{1ABD}

¹Національний інститут фізичного виховання імені Лакшмі Бая

Реферат. Стаття: 8 с., 6 табл., 1 рис., 33 джерела.

Мета дослідження. Метою дослідження була розробка інструментального засобу для вимірювання ставлення учнів до фізичного виховання на основі їхніх явних поведінкових переконань.

Матеріали та методи. Учасниками дослідження в першій, другій і четвертій фазі були хлопці та дівчата зі штату Маніпур (Індія), які навчалися в 7-10 класах. У першій фазі на основі рекомендації теорії аргументованої дії та її продовження – теорії запланованої поведінки – було проведено дослідження з виявлення поведінкових переконань з використанням відкритих запитань, і в результаті було зібрано загалом 308 відповідей учнів. Ці відповіді учнів використовували для розробки тестових запитань шляхом аналізу змісту. У другій фазі, тобто під час дослідження змістовної валідності, було залучено загалом 5 експертів для оцінки розроблених тестових запитань, одержаних із дослідження з виявлення пове-

дінкових переконань. У третій фазі, тобто під час пілотного дослідження, було встановлено, що із загалом 123 відповідей учнів 104 відповіді учнів придатні для аналізу. У четвертій фазі, тобто під час основного дослідження, було встановлено, що із загалом 433 відповідей учнів 377 відповідей учнів придатні для аналізу.

Результати. Через брак точного підбору моделі з пілотного дослідження було проведено другу оцінку факторної структури з першою половиною даних основного дослідження, у результаті якої було одержано трифакторну модель, і цю модель тестували з використанням оцінки факторів за результатами спостереження з другою половиною даних основного дослідження. Було встановлено, що показники точності підбору цієї моделі є належними, і також було встановлено, що показники структурної надійності та конструктивної валідності є відповідними.

Висновки. Було встановлено, що цей інструментальний засіб вимірювання ставлення на основі переконань є придатним і надійним для 7–10 класів у контексті фізичного виховання в Індії, тобто для шкіл, у яких загальні навчальні плани з фізичного виховання передбачають і заняття з йоги, і заняття з фізичного виховання.

Ключові слова: ставлення, фізичне виховання, явні поведінкові переконання, теорія аргументованої дії, теорія запланованої поведінки.

Information about the authors:

Mario, Moroo: moroolive@gmail.com; <https://orcid.org/0000-0002-1671-2059>; Department of Physical Education Pedagogy, Lakshmibai National Institute of Physical Education, Gwalior (474002), Madhya Pradesh, India.

Das, Anindita: anindita416@gmail.com; <https://orcid.org/0000-0002-6502-9619>; Department of Health Sciences, Lakshmibai National Institute of Physical Education, Gwalior (474002), Madhya Pradesh, India.

Cite this article as: Mario, M., & Das, A. (2022). Development of an Instrument Based on Salient Behavioral Beliefs to Measure Attitude towards Physical Education. *Physical Education Theory and Methodology*, 22(3s), S102-S109. <https://doi.org/10.17309/tmfv.2022.3s.14>

Received: 05.08.2022. Accepted: 29.09.2022. Published: 30.11.2022

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