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**Study of Association of Teachers' Participation with Physical Activity of Students during  
Physical Education Class**

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**Miss Savita R. Majagaonkar**

Assistant Professor, Rajarshi Chhatrapati Shahu College, Kolhapur

E mail- [savitamajagaonkar@gmail.com](mailto:savitamajagaonkar@gmail.com)

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**Abstract:**

The role of teachers has been established as a major factor in promotion of Physical Activity (PA) in adolescents. Effective participation of teacher in PE class can achieve the learning outcomes of the students, enhance the participation of students in class and make them enjoy the physical activity. To study the relationship of teacher's participation with physical activity of students during physical education class is the main objective of the study. From Satara City 18 teachers and their 378 (from 5<sup>th</sup> grade and 8<sup>th</sup> grade) students were participated in the study. Three physical education lessons of each teacher were recorded Researcher-made Observation tool for assessing teacher's participation (OTTP) in PE class was used. To measure PA of students NL 1000 pedometers were used. It is observed that, children's time spent of MVPA shows negative relationship with teachers' participation in organizing and managing activities ( $p= 0.020$ ). In adolescence age, negative correlation exists teachers' participation in overall activities and step counts, distance walked and time spent on MVPA of adolescents at 0.001 level of significance ( $p= 0.001$ ). It is concluded from the study that Physical activity of children is independent on teachers' participation in physical education (PE) class. Adolescents' physical activity is inversely associated with participation of teacher in PE class.

**Keywords:** Physical Activity, Teachers' Participation, Children, Adolescents.

**Introduction:**

The role of teachers has been established as a major factor in promotion of Physical Activity (PA) in adolescents (Standiford, 2013). Physical Education (PE) teachers need to increase the motivation of their students to be physically active, both in PE lessons and outside of school (Spray 2002; Standage, Duda and Ntoumanis, 2003). In order to achieve, higher levels of PA effective motivation is essential and it needs to be done by improving teaching strategies. NASPE (2011) stated that PE teachers should provide a safe environment at all times, differentiate lessons based on ability levels of students and use research based strategies. According to, Sidentop and Tannehill (2000) quality of teachers is most important factor among all the factors that influence how children learn and grow in school. Effective participation of teacher in PE class can achieve the learning outcomes of the students, enhance the participation of students in class and make them enjoy the physical activity. Sidentop and Tannehill (2000) stated that active teacher consistently engage their students in PA and help them to become better learner. In a study done by Jenkinson and Benson (2010) it is seen that, over two third of the participant teachers found difficulty in engaging students in PA they thought their own teaching could have impacted on students' participation in PE and PA. Previous researches (Haerens, et al., 2010) showed that, highly autonomously motivated (behaviours performed due to enjoyment) students are likely to be more physically active, even outside the PE class.

Rink (1993), Sidentop and Tannehill (2000) have said three distinct categories that teacher does in a PE lesson broadly. They are- instructional activities which are related to imparting subject content to students; organizing and managing activities dealing with organizing of learning environment and managing the lesson to maintain appropriate behavior; and other activities for developing and maintaining effective learning environment. Active teachers design instructional tasks that are meaningful to students and conveys right amount of information effectively and efficiently and get students quickly into practice (Sidentop and Tannehill, 2000).

A good teacher needs to have good managerial skills. Effectively implementing managerial tasks not only reduces managerial time but increases chances of instructions and practice (Sidentop and Tannehill, 2000, p. 69). As effective as the managerial tasks like using transition time, managing equipment, effective class formation, grouping time, more are chances to children to make active or to engaged. An effective management system produces co-operation between teacher and students and among students and saves time that can be used for learning.

Besides effective in instructional and managerial tasks, a good and effective teacher must possess effective interaction skills for developing sustainable discipline as well as for motivating and encouraging students for being physically active. Interaction includes; a one-word prompt, feedback, a non-verbal act (a smile or frown), praise, an expectation. Teachers' participation in class should be based on these three types of activities. The researcher was keen to know how teachers' participate in these activities during the PE class and whether there is association between these parameters and physical activity of students in two different age categories the present study was undertaken.

#### Objective:

The purpose of the study is to examine whether students are physically active in 30 minutes PE class and how much time they spent on MVPA. As well as to study the relationship of teacher's participation with physical activity of students during physical education class.

#### Hypotheses of the Study:

**H<sub>1,1</sub>:** There is significant relationship between participation of teacher in class and physical activity of children.

**H<sub>1,2</sub>:** There is significant relationship between participation of teacher in class and physical activity of adolescents.

#### Methodology:

- **Method:** The study is done by descriptive method.
- **Sample:** From Satara City 18 teachers from primary and secondary schools and their 378 (193 students of mean age=10.9 years from 5<sup>th</sup> grade and 185 students of mean age=14.06 years from 8<sup>th</sup> grade) students were participated in the study. Three physical education lessons of each teacher were recorded. Total 53 recorded lessons/classes of physical education were observed ( $n_{\text{teacher}} = 53$ ).
- **Tools:**
  - a) **OTTP:** Teacher's participation in physical education class was measured by observing video recording of the class using researcher-made Observation tool for assessing teacher's participation (OTTP) in PE class. The tool consists of 20 activities of teachers that are usually performed by teacher during PE class and influence on participation of students in PA and increase level of PA of students. Each lesson/class was observed by using Event Recording Observation technique. The activities occurring in intervals of three minutes were observed frequency of activity actually done by the teacher was recorded and rated by using 5-point rating scale from excellent to poor (referred as S). Total score of all the items were summated for measuring teacher's participation in class. The content validity of the tool was established by experts in the field of teacher's training and research. The reliability coefficient of the OTTP was 0.61. Overall participation of the teacher is combination of instruction activities, organizing-managing activities and other activities.
  - b) **The New-Lifestyles NL 1000 Pedometer:** The New-Lifestyles NL 1000 pedometer was used to measure physical activity of students. The NL 1000 measures step counts, distance traveled and time spent on Moderate to Vigorous Physical Activity.

#### Results:

Data is analyzed by using SPSS version 17.0 software. All the extreme scores (outliers) were excluded before analyzing the data. Correlation of teachers' participation is tested by Pearson's Chi-square test with two different age categories viz., children and adolescents and represented in following table.

Table No. 1

Correlation between teachers' participation score in PE class and PA of children during the class

Activities		Step counts	Distance walked	Time spent on MVPA
Overall activities	r	-0.181	-0.160	-0.193
	Sig. (2-tailed)	0.338	0.398	0.306
Instructional activities	r	-0.351	-0.339	-0.327
	Sig. (2-tailed)	0.057	0.067	0.077
Organizing & managing activities	r	-0.329	-0.324	-0.422
	Sig. (2-tailed)	0.076	0.081	0.020*
Other activities	r	-0.259	-0.275	-0.261
	Sig. (2-tailed)	0.167	0.141	0.163

*Note: '\* – significant at 0.05 level*

Table no. 1 indicates that, there is no correlation between teachers overall participation with step count, distance walked by children and time spent on MVPA. Similarly no correlation is found in teachers' participation in instructional activities and others activities with all the three variables of physical activity. From table no. 1 it is clear that, children's time spent of MVPA shows negative relationship with teachers' participation in organizing and managing activities.

**Table No. 2**

**Correlation between teachers' participation score in PE class and PA of Adolescents during the class**

Activities		Step counts	Distance walked	Time spent on MVPA
Overall activities	R	-0.658	-0.658	-0.652
	Sig. (2-tailed)	0.001 **	0.001 **	0.001 **
Instructional activities	R	-0.193	-0.189	-0.102
	Sig. (2-tailed)	0.377	0.389	0.645
Organizing & managing activities	R	0.105	0.111	0.170
	Sig. (2-tailed)	0.633	0.613	0.437
Other activities	R	-0.196	-0.195	-0.202
	Sig. (2-tailed)	0.370	0.374	0.355

*Note: \*\*\* – significant at 0.01 level*

Table no. 2 indicates negative correlation exists teachers' participation in overall activities and step counts, distance walked and time spent on MVPA of adolescents at 0.001 level of significance.

**Discussion:**

From the data analysis it is found that, there is no relationship seen between teachers' participation in overall activities, instructional activities, and other activities in PE class and step count as well as time spent on MVPA of children during PE class. Whereas, inverse relationship between teachers' participation in organizing and managing activities and time spent on MVPA of children during PE class. Similarly, inverse relationship between teachers' overall participation in PE class and step count and time spent on MVPA of adolescents during PE class. Hence researcher rejected research hypothesis  $H_{1.1}$  and accepted research hypothesis  $H_{1.2}$ . The results of the study were contrary to the literature. On reviewing the literature, theories and facts indicate that effective teacher increase participation of students and increase their physical activity with effectively planned lesson, using effective instructions, managerial skill and by continuously motivating students. All the teachers participated in the present study were not specialized in physical education, the lessons got observed were different content, and even specialized physical education teachers fails to score better in instructional, organizational-managerial and other activities. This may be one of the reasons of these contrary results. Morris (2016) found that teacher participation in PE did not help to increase student participation in physical activity in class. According to him, the students' behaviors (participation in physical activity) were influenced by the social and physical surroundings in PE, by their own personal characteristics (attributions, goals, etc.), and the actions of the other students. Therefore, teacher participation may not have been the only influential factor on student participation.

It is suggested that, to study association of teachers' participation and physical activity of students the deep study should be undertaken in which only certified PE teachers were involved and similar type of lesson content was included.

**Conclusions:**

The present study concluded that,

Physical activity of children is independent on teachers' participation in physical education (PE) class.

Participation of teachers in organizing & managing activities during PE class is influences inversely physical activity and time spent on MVPA of children.

Adolescents' physical activity is inversely influenced by participation of teacher in PE class.

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