**Research**

Αναζητήσεις στη Φυσική Αγωγή & τον Αθλητισμό
Τόμος 18 (2), 134 – 141
Δημοσιεύτηκε: Ιούλιος 2020

Inquiries in Sport & Physical Education
Volume 18 (2), 134 – 141
Released: July 2020

www.pe.uth.gr/emag

ISSN 1790-3041

# "After School Exercise": A Program to Promote Students' Physical Activity IV. Physical Education Teachers' Perceptions of the Program (Short version of a Greek article)

Ioannis Syrmpas, & Marios Goudas

Department of Physical Education & Sport Science, University of Thessaly

**Abstract**

The purpose of this study was to examine physical education (PE) teachers' perceptions regarding the functionality of the "After School Exercise" program, the students' responses to the program, and the program's effect on students' afterschool physical activity (PA). Eight PE teachers (N = 4 men, N = 4 women) who implemented the program answered open-ended questions. The content analysis showed that the program, in most cases, was implemented smoothly while where difficulties and problems arose, they were successfully addressed by the PE teachers. PE teachers stated that they were satisfied with the quality of the educational material. They also reported that their students endorsed the program. Interestingly, they reported that many students who had not been actively involved in PE previously participated due to the implementation of the program. Additionally, they stated that the program urged students to learn useful information such as health benefits of exercise, principles of exercise, and the estimation of the intensity of exercise based on heart rate. Finally, the PE teachers reported that due to the implementation of the program their students decided to participate in PA either with their parents, or with their friends in the neighbourhood, or alone at home, or in sports clubs.

Keywords: *physical education teacher, perceptions, students' knowledge, physical activity*

*This is an extended English summary of the paper: «Γυμνάζομαι και Μετά το Σχολείο»: Ένα πρόγραμμα για την αύξηση της σωματικής δραστηριότητας των μαθητών/τριών. IV. Οι αντιλήψεις των εκπαιδευτικών για το πρόγραμμα, Inquiries in Physical Education and Sport,18 (2), 124–133.*

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*Development of this manuscript was supported by a post-doctoral fellowship to the first author in the context of the program "Post-Doctoral Fellowships- University of Thessaly" which is funded by the Stavros Niarchos Foundation to the University of Thessaly.*

Corresponding address: Ioannis Syrmpas
Department of Physical Education & Sport Science, University of Thessaly
42100, Karyes, Trikala, Greece
E–mail: jsyrmpas@gmail.com

## Introduction

Research has shown that the promotion of students' participation in after school PA requires the adoption of a new curriculum that should include specific characteristics such as printed educational materials (Dobbins et al., 2013) and health-related knowledge that will raise students' awareness about the benefits of PA in health (Chen, Liu, & Schaben, 2017; Wang, & Chen, 2019). It is also useful to adopt self-regulated learning strategies, such as process and performance goals, self-recording, self-assessment, and causal attribution (Goudas et al., 2006; Goudas & Giannoudis, 2008; Kolovelonis et al., 2006; Dimitriou et al., 2007; Papacharisis et al., 2005). Additionally, the included activities should commensurate with students' skills in order to create a sense of autonomy in them (Hagger & Chatzisarantis, 2007; Papaioannou et al., 2011; Theodorakis et al., 2007). Additionally, the adoption of easy-performed activities that do not require specific equipment can reduce the negative impact of factors such as the lack and/or the cost of sports equipment and the lack of sports PA (Lovell et al., 2010; Moore, 2010). An effective program should inform significant others for the aim of the program and focus on triggering their involvement in PA (Dobbins et al., 2013). Finally, the effective delivery of a program requires not only PE teachers' training but also the acceptance by the rest members of the educational community as well as the programs' adaptation to the school environment (Ward et al., 2006).

A pilot survey prior to delivering the main study can be useful for drawing conclusions about which aspects of the program are effective and therefore need to be maintained and which are not, and therefore need to be enriched or modified. This may help researchers to avoid waste of resources, time, and unnecessary burden on participants (Home et al., 2008). Therefore, the suggestions of PE teachers who implemented the pilot intervention are useful for the most effective design and modification of the main research. After all, PE teachers should always have a critical attitude and evaluation of the curriculum's effectiveness (Kovač et al., 2008). Programs adaptation to the contextual requirements of each school could be a crucial factor for the effectiveness of the program (Ward et al., 2006). Arguably, curriculum developers should take into account PE teachers' recommendations in order to create a program that can be adapted to each school contextual requirement.

### *The purpose of the study*

The purpose of this study was to examine, through PE teachers' reports who implemented the program, the functionality of the "After School Exercise" program, students' response to the program and the effect of the program on students' participation in after school PA.

## Methods

This study involved eight PE teachers (4 men and 4 women) from primary education schools. Their teaching experience ranged between 17 and 30 years, with two of them holding postgraduate degrees. These individuals responded to an open invitation to PE teachers in the local region to implement the program «After School Exercise». At the end of the program, eight interview sessions of approximately 12 to 28 minutes were conducted. The study was conducted with the approval of the University Institutional Review Board and the Ministry of Education. Informed consent was obtained from all participants.

### *Interview design*

A semi-structured interview guide with open-ended questions was created (Patton, 2002) aimed at examining PE teachers' perceptions of the program. For example, PE teachers were asked to describe how they implemented the program and to report aspects of the program that were or were not effective. Participants' anonymity was ensured by following a coding process in their quotes presented in the results section. More specifically, PE teachers were coded as PET1, PET2, etc.

### *Data trustworthiness*

Data trustworthiness was established by adopting the following strategies: (a) adoption of well-established research methods; (b) the design of the study was conducted by experienced researchers; (c) adoption of the peer-reviewing approach. The reliability of the study was ensured by (a) collecting the data during a formal discussion (b) the random selection of two respondents from the participant group who were invited to confirm

that their views as phrased in the interview were accurately transcribed (LeCompte & Goetz, 1982).

***Data analysis***

Multi-level thematic analysis was adopted by incorporating constant comparison and analytic induction to identify common themes representative of all participants (LeCompte et al., 1993). Two experienced researchers independently created codes based on PE teachers' responses. For example, in the question: "Was the program effective? If so, can you give me some examples? Participant's answer was "it was positive that students met their classmates to participate in their spare time" was coded as "positive out of school". Then, both coding lists with quotations were printed and examined for codes reflecting a common understanding of the concepts. Both coders examined the data, and when a disagreement arose through discussion researchers reached on a consensual agreement for the most appropriate code that captured the essences of the data (Braun & Clarke, 2006). The following themes were emerged: (a) functionality of the program (b) students' response to the program; and (c) program's impact on students' afterschool PA.

## Results

PE teachers' responses indicated that they share several common and differentiated perceptions of the functionality of the program, its acceptance from students, and its effectiveness in the daily life of the students.

***The functionality of the program***

All PE teachers stressed that the program was functional and they did not face difficulties in implementing it. For example, PET4 stated that "*In general the program work well*", while E6 stated, "I think the program is very good and it was delivered with no problems. To tell you the truth, I would expect the children to get tired of the program, but in the end, they enjoyed it».

However, they all made several suggestions that could increase the effectiveness of the program. Two of them (PET3 and PET6) justified their proposal by saying that they did not have enough time to implement it as they would like. For example, E6 stated:

> It will be better to implement the program at the beginning of the school year; it was late to implement it… because we had other issues (ehhhh). I would like to have more time in order to call students' parents and explain to them about the program and present it to them by using a PowerPoint… and discuss it with them.

Similarly, PE4 stated that:

> I would prefer to deliver it (the program) at the beginning of the school year so that they can apply the knowledge they gain from the program and they inform me to the extent to which they implement it afterschool… and encourage them to continue.

Three participants (PET4, PET5, and PET7) emphasized that they found it difficult to deliver a few sessions within 45 minutes that a typical lesson lasts.

Specifically, PET5 reported:

> In general, I noticed that sometimes an additional time was needed… I would like to have more time at my disposal ... many times when we did not have enough time to deliver a session I informed my students that we will complete this unit in the next class session

Two of the participants (PET1 and PET2) also reported that they had to deliver the program in a limited period and they were not well prepared to deliver it. For example, PET2 reported, "there should be a short period before the program implementation so we can be familiar with the program. That way, it could be more effective for the delivery of the program".

While PET1 reported:

> Children were not familiar with some of the concepts and we spent a lot of time (to explain them); but mostly, a few children did not perform the exercises correctly, so we had to spend a lot of time to demonstrate how they should perform the skill properly and give feedback.

Finally, all the PE teachers agreed that they were satisfied with the quality and content of both the student's workbook and the teacher's textbook. For example, PET3 stated, "The teacher's textbook was written in a very simple manner and contains important information, therefore a well-prepared teacher can easy to teach the sub-

jects matter that the textbook includes." While PET2 stated "I think that the student's workbook and the teacher's textbook are well written. Especially the teacher's textbook is a compass for how you will teach, includes clear instructions on how to teach the lesson".

***Students' acceptance of the program***

All the PE teachers reported that students responded positively to the program. For example, E5 stated, "Children were generally happy". While E4 stated, "Students loved it and this motivated me to get better and develop a better relationship with them… A student told me that he would miss the lesson due to the end of the school year and that moved me".

Even in a few cases, as two teachers (PET1 and PET7) reported, the students were initially negative, and then they progressively had a very positive attitude towards the program. PET7, stated, "Initially there were some reactions because several students perceived that due to the program their participation will be limited to one hour per week (considering that in 5th and 6th grade allocated two hours per week in PE)... after the first reactions they were more positive."

Interestingly a number of the participants (PET1, PET5, PET7, and PET8) noticed that students who were involved in after school PA had more active participation in the lesson. For example, PET5 stated, "The students who were already involved in a sport showed the greatest interest". While PET8 stated, "Those who were involved in a sport were more familiar with the information the program included". On the contrary, several of the participants (PET1, PET3, and PET8) noticed that students who used to be inactive in the past, now they changed their attitude towards PE and they actively participated in the lesson. A rational explanation for this according to these PE teachers was that they felt more competent to perform the activities of the program. For example, PET8 reported, "A student, who participated sporadically in the lesson and sometimes use to make noise in the past, now during the program implementation he was very active". Similarly, PET1 said, "there was a child who was not very active in the past… then I noticed that he was very active during the implementation of the program, probably because he performed well".

Similarly, PET3 stated:

> Three or four girls who did not have active participation in the PE, because if you are not skillful, then you cannot play for example basketball, volleyball, etc… during the implementation of the program they set a personal goal and therefore tried harder in the lesson now than in the past.

Finally, PET5 reported:

> A student with tachycardia she did not actively participate in the lesson decided to participate in the program at her own pace and to do what he can, one day her mother came and thanked me because her daughter learns to measure her heart rate and teach the rest member of the family to measure the heart rate. This was very useful for us she said.

PE teachers' reports indicated also that, due to the implementation of the program, students gain useful knowledge that they can apply in their daily lives. They reported a few common and a few different aspects of the knowledge that the students gained due to their participation in the program. The majority of them (PET1, PET2, PET4, PET5, PET6, and PET7) emphasized the activities that the students learned. According to their reports, many students were not familiar with a significant number of the activities of the program, while those who had performed them many times in the past did not know their usefulness. For example, E5 stated:

> The children showed a lot of interest and they liked the activities that help them to strengthen their muscles or the knowledge they gain about the muscles, they liked that they learned new information… For example, the practice in the clubs or the lesson in the PE may include flexibility activities, but without their coaches/teachers provide them with relative information about their usefulness and how to properly execute them … now they enjoyed that they gain this new knowledge.

A significant number of participants (PET4, PET5, PET6, and PET8) reported that students showed great interest in learning how to calculate heart rate. As PET8 stated, "One of the lessons they enjoyed was this that they learning how to measure their pulse". While PET4 stated, "even during the breaks they asked me to watch them run, measure their pulse and calculate the intensity of the activity".

Furthermore, three teachers (PET2, PET3, and PET8) reported that their students were informed about the health benefits of exercise, but also goal-setting theory. More specifically, PET3 stated, "…due to the program

they understood that without a goal it is not possible to improve their performance, therefore they set goals, they felt satisfied because they finally improved their performance". Similarly, PET8 reported, "they learned to set the appropriate goal each time". While she stated that "due to the program they also learned about the health benefits of exercise… interestingly a number of them even recognized that certain diseases – that relatives of them suffer - could be prevented by exercise, such as hypertension, diabetes, etc.".

***Students' adoption of the program in their daily lives***

Participants' reports suggest that the program has encouraged most students to engage in PA in their spare time. In particular, PET1, PET2, PET6, PET7, and PET8 based on their communication either with their students or with their parents reported that most students, even those who participated in organized sports activities before the implementation of the program, involved in sports activities along with their family. For example, E1 reported:

> I notice that when I deliver the session which included aerobic activities and asked them to record the time that their siblings, mom, dad, grandpa, etc. spend in PA it was a lot of fun. Some children set Sunday as a family sports day because their parents did not have such a heavy workload. On Sunday, parents and children spent the time walking, cycling, or even dancing.

Additionally, four participants (PET1, PET2, PET3, and PET5) stated that their students decided to adopt the activities of the program and implement it with their friends in the neighbourhood, in the park, or in the schoolyard. For example, PET2 said, "They reported to me that they implement the activities of the program with other children in the neighbourhood". Similarly, three participants (PET4, PET5, and PET7) reported that students adopted several of the program's activities and implemented them at home when they finished reading or watching television. For example, PET5 said, "(A students informed me that) we do strength training at night, even when we're watching TV." Similarly, PET7 stated that students informed her that:

> They participate every day in PA. They use to be physically active each time they can. Therefore, they do curls ups, dorsal raise, and push-ups, etc. when they watch TV, or the morning when they wake up or the night before they go to bed opportunities.

PET6 stated that several students, due to the program, decided to systematically engage in a sport. Specifically, he stated, "I know for sure that two children, who have a swimming pool nearby, decided to swim in a swim club".

## Discussion

The purpose of this study was to record PE teachers' perceptions regarding the functionality of the "After School Exercise" program, students' response to the program during its implementation at school, and the extent to which the program affected students' after school PA. The findings suggested that PE teachers generally did not face problems in implementing the program. A number of them suggested that its implementation could be more effective at the beginning of the school year because they will have more time to deliver it to their students and evaluate its effectiveness. However, even these PE teachers reported that they overcame the difficulties and challenges they faced whilst implementing the program. It should be pointed out that the researchers intended to enable teachers to implement the program at any time during the school year, but this was not possible due to bureaucracy. Researchers informed PE teachers that they can deliver the program as they wish and to adjust it to their school context. As a result, several of them stated that a few sessions lasted more than 45 minutes and they decided to deliver a few tasks within the next session. Thus, they expanded the program to more than 15 sessions that allowed them to effectively deliver it. The above finding confirms the researchers' recommendations (Ward et al., 2006) that the effectiveness of programs increases when teachers have a sense of personal contribution to the changes that occur in the lesson.

Interestingly, some of the PE teachers noticed that students who participated in after school sports activities were more active during the implementation of the program. This finding is consistent with the findings of previous studies (Hagger et al., 2005; Shen, 2014) which supported that children's positive experience in after school PA may have a positive influence on their motivation to actively participate in the PE as well.

Additionally, PE teachers' reports indicated that most, if not all, of the students actively participated in the program. Several PE teachers reported that several students who usually did not actively participate in the les-

son changed their attitude and actively participated in it. A possible explanation for this could be that the program contained differentiated activities which commensurated with students' skills (Syrmpas et al., 2020, in this issue) and students were free to decide about the number of repetitions and sets they will perform. These aspects of the program may enhance their competence and increase their active participation. This assumption is based on the findings of previous studies have shown that when students adopt activities commensurate with their skills, then their autonomy (Byra et al., 2014) their sense of success (Hagger & Chatzisarantis, 2007; Theodorakis et al., 2011; Hatzigeorgiadis et al., 2007) and their satisfaction (Fairclough, 2003) is increased along with their positive attitudes towards PE.

PE teachers also stated that different aspects of the program have attracted students' interest. In some cases, students' interest was attracted by unfamiliar to them activities or activities that they did not know their usefulness. In some other cases, the goal-setting tasks attracted their interest as well as the estimation of their heart rate and the intensity of the exercise. These PE teachers' reports are aligned with reports of students that participated in the program "After School Exercise" (Syrmpas et al., 2020, in this issue). Both studies' findings confirm that different aspects of a course or program may attract each students' interest (Gallahue & Donnelly, 2007; Mosston & Ashworth, 2008; Sanchez et al., 2012).

Furthermore, the findings of this study suggested that the implementation of the program urged most of the students to adopt activities of the program to after school PA. PE teachers' reports are aligned with students' reports (Syrmpas et al., 2020 in this issue). Reports from both studies indicated that several students were involved in PA with their family, others with their friends in the neighbourhood, others alone at home, and several others eventually joined sports clubs. The diversity of the environment in which students live could be a rational explanation for their decision to choose different places to participate in PA. Therefore, students' accessibility/proximity to sports infrastructure, parks, and schoolyards urge them to implement the program in these places along with their classmates or friends. In contrast, those who did not have access to the above facilities decided to be physically active at home or along with their parents in sports facilities. While several students choose to enroll in sports clubs. The aforementioned findings confirmed that the participation of siblings, friends (Sallis et al., 1988) and parents (Sherwood et al., 2004) in PA, as well as parental support (Sallis et al., 2000), have a positive effect on children's participation in PA. They also confirm that students' accessibility/proximity to recreational facilities/sports facilities significantly influence children's participation in PA (Bauman et al., 2012).

Arguably, it can be stated that students' awareness of the health benefits of exercise, differentiated activities, and significant others' involvement (parents, siblings, and friends) significantly influenced the adoption of PA. This assumption is supported because students who had proximity and accessibility to parks/recreational facilities did not report to their PE teachers that they used to engage in PA in these locations before their participation in the program. In contrast, they stated that due to the program they decided to be physically active. Similarly, parents and students reported that the program implementation urged them to participate in PA. Therefore, it can be assumed that students' proximity/accessibility to recreational/sports facilities and the influence of family and friends are not enough to encourage students to engage in PA. On the contrary, the contribution of students' awareness of the health benefits of PA along with skills/knowledge (goal setting, heart rate calculation and exercise intensity, etc.) is likely to help students to plan a personal program commensurate with their skills that will give them a sense of pleasure and competence. This assumption is in line with the findings of a study that argues that the integration of health-related concepts and basic principles related to PA can foster students' participation in after school PA (Chen et al., 2017; Wang, & Chen, 2019). In summary, it can be argued that the program achieved its goal of increasing students' awareness and participation in afterschool PA.

***Limitations***

The findings of the study related to students' participation in afterschool PA are based on students' reports to their teachers or their parents and not on objective measurements (e.g. measurement with accelerometers). Therefore, a future survey is useful to be conducted with a larger and more representative number of participants and objective assessment of students' participation in PA to confirm to the extent to which the findings of the present study reflect students' participation in afterschool PA.

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