

# The Role of Physical Activity Programs in Combating Childhood Obesity: Insights from Physical Education Teachers at a Private School in Abu Dhabi, UAE

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**How to cite this paper:** Harbaji, W., & Forawi, S. (2025). The Role of Physical Activity Programs in Combating Childhood Obesity: Insights from Physical Education Teachers at a Private School in Abu Dhabi, UAE. *Creative Education*, 16, 1615-1628. <https://doi.org/10.4236/ce.2025.1610098>

**Received:** August 27, 2025

**Accepted:** October 21, 2025

**Published:** October 24, 2025

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## Abstract

The purpose of this study was to investigate the factors influencing the effective implementation of the physical education (PE) curriculum at a private children's school in Abu Dhabi. The study initiative to address childhood obesity prevention in the UAE stems from a review of the national health plan for combating obesity, with a key focus on enhancing physical activity among children in schools. Several factors can affect PE curriculum implementation. These factors can vary depending on the social, economic, and cultural context. To investigate this phenomenon, the study utilizes social learning theory and the Overcoming Resistance-to-Change Model (ORC). The ORC model emphasizes change from the teacher's perspective. This model consists of four stages to focus on. A researcher interviewed two teachers at a private school. The study's findings indicated that there are three major factors contributing to the problems associated with the implementation of the PE curriculum. The emotional factor, the mental factor, and the physical factor. The study concluded that overlapping factors are impeding the government's efforts to improve child health outcomes. School managers, teaching institutions, families, and teachers all support the PE curriculum's delivery.

## Keywords

The Physical Education (PE) Curriculum, Childhood Obesity, Obesity Prevention Strategies, Social Learning Theory, The Resistance-to-Change

## 1. Introduction

### 1.1. Background

The rate of child obesity is increasing in the Middle East and North Africa (MENA) (Nikoloski, 2024). In the UAE, the national survey of childhood obesity at school among five- to seventeen-year-olds was 17.35% in 2019. Which plummeted the highest in Al Fujairah and the lowest in Dubai. Showing attention is the top concern of the public health sector (Al Sabbah et al., 2023). The dilemma lies in the negative impact of childhood obesity on the health of the new youth generation, as it is considered one of the leading causes of type 2 diabetes, vascular and heart diseases, and multi-morbidities (Balasundaram & Krishna, 2023). Furthermore, an underestimation of self-esteem will affect the child's psychological development (Ginneken, 2016). So, The UAE Health Education and Promotion Department (Ministry of Health and Prevention, 2017) has a prompt intervention, developed a plan to fight childhood obesity in the UAE in collaboration with the Ministry of Education. The stated goal is to find a strategy to prevent obesity in children through policies and environmental changes across the life course. It points out that unhealthy lifestyles primarily result from consuming unhealthy food, especially fast food, and a decrease in physical activity. Therefore, a supporting physical activity and nutrition school children program has emerged from (UAE, 2024), which imposes the availability of nutrition and physical activity within the school curriculum. Furthermore, the Ministry of Education (2022) has added an evaluation exam for the physical activity teachers, which they must pass to start the work.

### 1.2. Statement of the Problem

According to the WHO, one of the recommendations for child health is to achieve at least one hour of active physical activity per day (Swanson, 2023). Both genders in the UAE reported a high prevalence of sedentary behaviors within 80% of their waking hours. Physical activity practice is higher among males than females, but the dominant type is light in intensity (Dalibalta et al., 2021). Moreover, there is no historical or current available data referring to the availability of grading physical activity at school; in other words, its reliability does not reflect its real practice (Paulo et al., 2018). Or to evaluate the integration of physical activity lessons into the daily class schedule and the effectiveness of PE teachers in engaging students in moderate-to-intensive exercise as recommended for their health and well-being certainly preventing schoolchildren obesity.

### 1.3. Purpose

The intent of this study is to explore PE teachers' perceptions of the factors preventing successful implementation of physical activity at school to prevent childhood obesity.

#### 1.4. Question

How do teachers perceive the challenges of implementing the physical activity curriculum designed for the prevention of obesity in schools?

#### 1.5. Importance

Children and youth spend a quarter of their daily time at school, another quarter sleeping, and the remaining quarter is insufficient for homework, social life, or hobbies. According to the [World Health Organization \(2023\)](#), children should engage in at least one hour of active physical activity daily for optimal health.

In fact, since 2010, the UAE ministry of education has integrated physical education lessons from kindergarten to secondary school; it has become mandatory in all school types. However, each emirate has mandated a slightly different number of lessons per week, ranging from 120 to 150 minutes per week ([Paulo et al., 2018](#)). So, it is crucial for teachers to be aware of the importance of operating a physical education curriculum and actively work to prevent children's obesity during school hours, which falls under the objectives of the national plan. Therefore, further investigation is necessary to examine this case due to the limited literature on the implementation of Physical Education (PE) in UAE schools. It is crucial to identify the key elements that affect the fulfillment of the PE curriculum in schools through the teachers of PE.

#### 1.6. Rational

The [Ministry of Education \(2022\)](#) strives to qualify the PE teachers among all UAE schools by providing special training and a thematic understanding of the new curriculum. Despite this, a recent researcher in the UAE found that the children's schools are not achieving the required 30 minutes of moderate-to-vigorous physical activity (MVPA) during the day segments, certainly among females compared to male schools ([Ajja et al., 2021](#)). Approximately 16% of UAE children's schools adhere to the global physical activity recommendations for health, which require at least 60 minutes of daily MVPA. Furthermore, the report pointed out that expat children are more physically active than UAE children across age groups and genders. It also highlighted that the percentage of children who achieved the recommended physical activity per the guidelines declined by 2% every five years ([Paulo et al., 2018](#)). Given that the majority of UAE children are not meeting the daily physical activity recommendations, it is not enough to raise public awareness about the health risks of child obesity; it is also crucial to emphasize the importance of daily exercise for children in school and the PE teachers' insights could help implement the necessary interventions to promote physical activity and effectively address this responsibility.

## 2. Literature Review

### 2.1. Theoretical Framework

The theory that fosters this study is Albert Bandura's social learning theory, which

posits that children learn from their environment through active observational learning and will imitate the behaviors of people they observe around them, so it's important to provide good role models to show how to behave in a variety of situations. PE teachers, who serve as positive role models, must demonstrate physical activity concepts, allocate time for them, provide appropriate content for children, emphasize its importance for maintaining wellbeing, and devise strategies to consistently engage students to understand the concept of obesity, physical activity, and the relation between a healthy lifestyle and wellbeing, as well as the challenges to solving its problem. That theory can be effective in practice because it focuses on influencing learning through rewards and learning from the consequences of their behavior. Encourage positive behavior right away and focus solely on good behavior (Maisarah, 2024). When emphasizing PA practice, one must consider this aspect.

Additionally, there are many different models for implementing a curriculum based on the Educational Research Technique (2014). The Overcoming-Resistance-to-Change Model (ORC) is one common model that focuses on gaining advocates and sharing power equally between administrators and teachers. The ORC model maintains high flexibility in its implementation to address teachers' personal needs and emphasizes change from the teacher's perspective. The model consists of four stages. The first stage is apathy (unrelated concerns); the teacher is aware of change but does not see how it relates to their own life. As such, the teacher is not worried about whatever innovation is coming. An example could be hearing about efforts to promote physical activity, children's wellbeing, and combat obesity at school. The teacher knows this innovation is out there, but it has not impacted them yet. During the second stage, the teacher is now concerned about how the new innovation or curriculum will impact their personal lives. For example, a PE teacher is grappling with how using the physical and health education curriculum will affect what they are trying to do in the classroom. At the third stage, he is concerned about how to use the new curriculum or innovation. In terms of application, questions begin to go through their heads. For the PE learning example, the teacher may wonder about such problems as: how much time will it take to start engaging students effectively? What are the best ways to use this new innovation? What kind of support will I get? These are some of the many possible questions. The final stage is impact-related concerns; now the teacher has taken their focus off of their performance and is worried about how this will affect students. At this stage, teachers are focusing on their students, peers, and school. For the PE learning example, teachers start to wonder how PE learning will benefit the students. As a teacher, you may start to wonder how other teachers are doing as they try to use this new innovation. This is the transition from oneself to others. These stages help to explain what a leader can anticipate when trying to implement curriculum effectively (Law, 2022).

We picked Social Learning Theory (SLT) and the Organizational Readiness for Change (ORC) model together because they work well together to explain how

people and organizations operate in ways that are important for putting the physical exercise curriculum into action.

SLT focuses on learning by watching others, setting an example, rewarding positive behavior, and having faith in oneself. This topic fits with figuring out how teachers and kids do (or don't do) physical activity in school.

ORC shows how willing and able an organization is to accept new ideas. The study was important because the way schools are set up, the resources they have, and the readiness of their leaders determine how well the curriculum is put into action.

Through the lens of SLT and ORC, the study questions were able to look at both micro-level (teacher/student/parent relationships) and macro-level (institutional preparation, policies, and resources) issues because of these frameworks.

## 2.2. Review of Related Literature

Roux (2020) from South Africa looked at PE educators' perceptions and found that the physical education teacher's qualifications and the lack of resources are affecting the effectiveness of the PE class. In the same context, Day et al. (2019) investigated school staff perceptions of factors that hinder and enable successful implementation and sustainability of healthy lifestyle interventions in primary schools in North England and the analysis revealed challenges to implementation, including limited time, implementation timing, limited training and support, insufficient resources, staff perceptions of intervention, short-term funding, and a lack of external and internal support that hindered sustainability. Furthermore, it suggests that teachers' recommendations for successful implementation should primarily prioritize the delivery of healthy lifestyle programs in an overcrowded curriculum. Effective leadership at multiple levels and parent involvement were key factors in facilitating the successful implementation of school-based healthy lifestyle programs. The need to integrate long-term programs into the curriculum is relevant to program developers, policymakers, and those involved in delivering interventions. The latest study by Korom et al. (2024) focuses on family behaviors: cultural exposure Relationships and self-growth were necessary to sustain practicing healthy behaviors. Specifically, parents can strengthen their bond with their children by participating in school sports together as well as benefiting from shared experiences with community members.

(Christodoulakis et al., 2024) argued that the most effective intervention involved enhancing teachers' knowledge and skills, integrating them into the established curriculum, and incorporating active learning strategies such as role-play and team-based learning into teacher teaching interventions. This method could also improve social connectedness (social support) among students and increase their enjoyment of physical education. By fulfilling their psychological needs, students could be intrinsically motivated to stay physically active. Furthermore, students who met their psychological needs could enjoy PE more and, as a result, have a more positive attitude towards it. When trying to complete tasks while providing constructive feedback, there are several obstacles that could hinder the

success of teacher interventions. These obstacles include the limited availability, quality, and cost of teacher training and coaching. On the contrary, [Kuhn et al. \(2022\)](#) from the United States found a strong relationship between student attendance and teacher effectiveness. Teachers perceived that students' participation and interaction with the content in class led them to believe their instruction was effective and showed no associations between level of education and teacher effectiveness.

While the above researcher studied only the PE teacher's perceptions, this study by [Fraile et al. \(2024\)](#) discussed the opinions of teachers from a range of subjects, not just PE. The school staff agreed that there should be at least one session per day, ideally lasting between one and a half and two hours. Most teachers, including those who did not teach PE, highlighted the importance of PE for the holistic development of pupils. Several teachers pointed out that there were virtually no obese pupils, citing the seven hours of PE. They linked it to the development of healthy habits, as well as the emotional-affective dimension and self-esteem to which it leads. Teachers agreed that the biggest drawback was the increase in injuries, which was the only negative aspect. The vast majority of teachers acknowledged that coping with the high number of hours of PE involved difficulties. Economic (the more hours, the more teachers are hired), material (adequate spaces and materials), and logistical. When organizing timetables and spaces, increasing physical education (PE) time may require taking time away from other activities. In some contexts, this is social (communities of parents who do not accept increasing PE at the expense of other more "cognitive" areas). Resolving common problems with timetable composition and space management is essential. Equally, [Neely \(2023\)](#) was studying the quality of implementation of the curriculum to enhance the understanding of the barriers that prevent physical education teachers from delivering high-quality instruction, as it ultimately may contribute to the rise of childhood obesity. PE teachers emphasize that the most important obstacle is that gyms do not have access to air conditioning, especially during the summer season. The class sizes have a direct impact on students' ability to move safely. There is no homework for PE, so students simply do not go home and continue to practice. Practice the skills they learned from their PE class. Another reason is that PE teachers do not have enough time to help students master their skills. Make learning fun and enjoyable, while also promoting the positive values and attitudes taught when it comes to exercise and fitness.

### **Summary**

The literature focuses on the concern about childhood obesity and the role of the PE curriculum in solving such health problems. There are various plans to improve PA's usefulness. According to their perceptions and thoughts, the PE teachers encountered obstacles that hindered them from going through it effectively. Internal and external factors were the most important barriers highlighted in the previous section. Internal factors, such as the PE teacher's self-perception and confidence in knowledge and skills, could play a role. External factors, such

as the facility preparation for the gym or the PA demonstration place, cause the time limitation because it's dedicated to other scientists, and to increase the frequency of PE during the week, it will lead to cost savings by hiring extra teachers. It also highlighted the role of parents in supporting the PE program at school. Therefore, those reasons address the need for policy and intervention updates.

### 2.3. Situating the Current Study

After reviewing the existing literature on this topic, I discovered that there are few studies examining the factors that hinder the successful implementation of the PE curriculum in alignment with the UAE national plan to combat obesity among schoolchildren. There is also a lack of qualitative studies to explore PE teachers' perceptions of the obstacles to effective implementation of the PE class and derive from them solutions for future research.

## 3. Methodology

### 3.1. Research Approach

A case study design, aimed to explore the factors preventing the effective implementation of PE classes in a private school in Abu Dhabi through an analysis of PE teacher's perceptions. Utilizing a qualitative research approach the research questions necessitated an interview-based method for gathering information on potentially sensitive topics concerning attitudes, beliefs, and social norms. Placing data in a cultural context and generating additional hypotheses are essential for guiding further research. A semi-structured interview was essential to gain a better understanding of how and why this phenomenon exists (Creswell, 2009).

### 3.2. Interview

It is a suitable data collection method for assessing hypotheses or opinions, measuring respondents' knowledge, preferences, attitudes, beliefs, and opinions, and testing hypotheses or identifying relationships. This method allows the investigator to control the conversation, but its limitation comes from the bias in the responses due to the researcher's presentation (Creswell (2009).

It's conducted separately and face to face with the participants with a list of unstructured open end questions in **Appendix A**, to extract the participant's opinion toward the PE constrain implementation factors.

With asking the questions the investigator takes hand writing notes of answers only there was no voice recording as requested from the participants. There was a space of time to allow the investigator down writing the collected data. Each participant takes 30 to 45 minute's time.

The validity of the data is tested by allowing the participant to review a part of the analyzed themes and provide feedback.

### 3.3. Participants and Setting

After getting the permission of the research ethics committee at Buid University,

the principal of a private school in Abu Dhabi verbally agreed to meet with two PE teachers for a female section of students aged 8 to 14. Two physical education teachers from one school were chosen for their direct participation in student physical activity and unique insight into childhood obesity. The tiny, context-specific sample limits transferability, but detailed descriptions of the school and individuals let readers assess applicability to other settings.

The study was conducted at a co-educational institution in Abu Dhabi that was enrolling approximately 1500 students. Physical education classes are held three times a week, and the school has an outdoor field that measures approximately 24 meters in length and 13 meters in width, but it does not have a gymnasium. This context assists in locating the reported barriers within the school's available time and facility resources. In addition, the school's central location in Abu Dhabi and high rank in the MOE evaluation led to its selection.

The participant also asked for permission to take notes during the interview. They have more than five years of teaching experience, hold a bachelor degree in PE education, and have trainer certificates for different sports. We assure the confidentiality of the information and will use the gathered data solely for research purposes without mentioning their names in any research phase.

#### 4. Data Analysis

We used a rigorous thematic coding technique to look at the qualitative data. First, open coding was used to identify basic ideas and assign codes to parts of text that were important. Next, axial coding was used to look for connections and trends in the data and organize related codes into groups. Finally, selective coding was utilized to improve these categories and bring them together into larger themes that fit with the research goals. To enhance the reliability of the analysis, inter-coder checks were performed: a second researcher separately examined a portion of the transcripts, and any inconsistencies were deliberated until an agreement was achieved. This practice of going through the results several times made them more reliable and believable (Williams & Moser, 2019).

The analyzed and collected data findings of the PE teachers are providing valuable data, as illustrated below:

\* Do you respect and appreciate your work? If not, why?

The two participants reflect dissatisfaction and unmotivated compared with their job-beginning feelings. There are no regrets, but sometimes they feel fed up. Certainly, working in the private sector indicates low income, a lack of life access, and a need for cover, further indicating the sub-estimation of their specialty compared to other subjects. However, this decision will negatively affect future PE teachers.

\* Rarely do PE teachers get invited to attend meetings to discuss curriculum topics. Other teacher subjects, such as English or math, may use the PE class time, particularly at the end of the semester, to focus more on those subjects than on PE. But if they face a problem with the curriculum, the door is wide open to dis-

cussing it with the supervisor.

\* The school playing area is an important part of effectively practicing physical activity. How does it prevent you from leading the course?

Both participants agreed that the school indoor playing area and the availability of instruments for exercise practice were important, and their suffering was prolonged because the school building is old and the construction has enlarged the classroom rooms, reducing the available space for the playing area. The school's purchase of instruments requires a large budget.

\* During class, did all of the students demonstrate the planned games mentioned in the PE book?

Some students are careless and prefer working independently rather than collaborating with the curriculum, which often leaves both teachers dissatisfied. It is important to consider the impact of the student's beliefs and social backgrounds. Positive rewards are also missing after the competition.

\* Is the school manager arranging a meeting? Does the principal ensure proper implementation of the PE curriculum during scheduled visits?

They mentioned that the school director's intention was to track the implementation of the curriculum, similar to other subject schedules. There are no other issues to discuss with the managers.

\* Are the parents interacting with you and showing their interest in following their children's physical activity, emphasizing its importance for overweight and obesity treatment? Are they seeking your evaluation?

Both interviewees strongly agreed on the lack of awareness about the importance of physical activity during school time in preserving child wellbeing and preventing obesity. Furthermore, one of them added that some children lack motivation from their parents to participate in low-intensity exercise, despite frequent contact regarding childhood obesity. Although government stakeholders are making a big splash around that and illustrating that in different international health development plans for children, obesity is certainly a topic.

\* List the challenges for the PE curriculum implementation and obstacles to meeting the goals of schoolchild health and obesity prevention. Any solutions to start with?

Fix the PE curriculum implementation time in the weekly lesson plan, ensuring it takes 45 to 60 minutes at least 4 to 5 times per week. Moreover, we need the school principal to consider it as another important subject in the evaluation process that reflects the student's inertia and weight improvement, not only as an assistant grade to the year-end certificate.

An application of educational psychology involves creating a schematic design or conceptual model to simplify concepts that are conceptually independent of one another and refer to phenomena at the same level of discourse. Proposing innovative questions and assisting in resolving real-world educational challenges Penney (2003). The data interpretation is not from the researcher's point of view or personal academic background; it's purely based on participant input. The

questions and the answered data collected are segregated into different categories.

The notes were reviewed, the recoding step started, and the information was categorized in **Appendix B**.

### **Results**

Overall, the qualitative data present some of the important factors that prevent teachers from implementing the PA curriculum, as addressed by the MOE and DOH for the vision of improving children's growth and development and preventing obesity and overweight. And these factors are explained in three categories:

**The emotional factor:** arises from the teacher's sense of being undervalued by the management office and the perception that the PA subject is not held in the same regard as other scientific or educational subjects.

**The mental factor-1:** The low intention of parents or child caregivers towards physical activity, coupled with the lack of support for their children due to perceptions and attitudes towards physical activity, impacts the child's mindset about engaging in it, warranting further investigation in the future.

**The mental factor-2:** affecting the class is the lack of motivation among students for their achievements and positive deeds, as well as the teacher's lack of motivation to perform at their best during physical education class.

**The physical factor:** That hinders effective fulfillment of the PE curriculum is the inadequate exercise facilities and competition among students. And lack of time allocated to the PE class.

## **5. Discussion**

Emphasized the importance of integrating policies and programs into school interventions and communities to empower the PE at school and students practices to maintain health and fitness, utilizing the support of the socio-ecological model SEM. The intrapersonal level reveals that age- and gender-specific strategies are significant in children and adolescents, certainly improving students' self-concepts. Effectively introducing programs and policies has a more lasting impact than raising awareness among communities through community education, which typically yields only short-term results (Hu et al., 2021). Hence, understanding how this can be reasonably argued. The context in which the PE teacher operates is critical to achieving the study's main goal. This study focused on the key players involved in achieving the main goal beyond the study, which is to effectively implement the PE curriculum in light of the international plan to combat UAE childhood obesity. Overlapping factors are impeding the government's efforts to improve child health outcomes. School managers, teaching institutions, families, and teachers are supporting the delivery of the PE curriculum. It is important to take into account the key role models (PE teacher) perceptions and feedback to identify the struggles in achieving the goals of the curriculum. Indeed, teachers, management and planning, resources, and time allocated are criteria that have to be focused on to ensure the success and quality of PE programs. It is also important to enhance the social context and norms.

## 6. Conclusion

Obesity pervades the UAE population, affecting both adults and children, with a high and increasing prevalence over the years (Mamdouh et al., 2023). The latest study links genetics, social influences, sedentary lifestyle, economics, health behaviors, traditions, and norms in the UAE to the exacerbation of obesity. Furthermore, the cost of obesity treatment and its negative health impact are high, necessitating a strategy in collaboration with all stakeholders' approaches to find a solution for obesity (Alkhatry et al., 2024). Accordingly, to create root changes in society, we must start with the growing-up generations at an early age. It is critical to develop a plan that introduces the concept of obesity and effectively implements the PE curriculum for schoolchildren. This plan should focus on identifying key role models whose achievements consider the perceptions of PE teachers, enabling them to address this issue early on and having the potential to transform the community as a whole. In the long term, the expected outcome is a healthier environment and better behavior. It could seem that the implementation of the PE curriculum missed an important element: the delivery of the PE curriculum, organizing demonstrations at school, and a fair evaluation of its implementation.

## 7. Recommendations

As we are discussing the school and curriculum factors, it's indicated to study the out-of-school factors, including sociocultural and economic factors, further in another study.

## 8. Limitations

General lack of previous research in this specific field, which makes it challenging to find relevant contextual literature sources. Moreover, the limited research time constrains the researcher from investigating more school PE teachers in other government and private schools. However, the limited interview time due to the MOE audit at the school did not affect the interview achievement.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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### Appendix A. A List of Interview Questions

- What's the PE teacher's perception of himself, and is that affecting the implementation of the PE curriculum?
- Are you receiving support internally (from the school) to achieve PE class as planned by MOE?
- How does Abu Dhabi School allocate time for PE lessons?
- How does the physical education curriculum affect its implementation?
- Does the school playground facility affect the implementation?
- Is the student's family concerned about their child's fitness and aware of its importance, certainly for the obese child?

### Appendix B. Model of School Learning Affecting PE Implementation in Abu Dhabi

