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Examining the Perceived Benefits of Structured and Unstructured Physical Education Lessons among high School Learners in Cape Town

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Abstract:

Introduction: Research shows a decline in adolescent physical activity in developing countries. Physical education (PE) lessons, including both structured (SPE) and unstructured (UPE) formats, are vital for promoting regular participation. While SPE is formally delivered, UPE offers an informal alternative that may enhance engagement. Despite the potential benefits of both forms of PE, there is limited understanding of their individual and combined effects.

Objective: This study is aimed at examining the perceived benefits of structured and unstructured physical education lessons, as perceived by Grade 8 and Grade 9 learners, at selected high schools in Cape Town, South Africa.

Methods: A cross-sectional design among Grade 8 and 9 learners was employed. Learners were recruited from 10 schools across Cape Town (n = 321). Purposive sampling was exercised to administer a validated survey, with data being analyzed using SPSS V28.

Results: Grade 8 (37.1%) and 9 (62.9%) learners participated in the survey. Results showed that 45.2% of learners acquired skills in SPE, with 53.9% feeling more alert and energetic during classes. Learners (52.3%) reported improved thinking abilities, and 46.7% noted better health. In UPE, 29.9% found it more enjoyable than SPE, 38.9% felt skills learned during recess helped in SPE, and 40.5% could think creatively about new activities.

Discussion : Findings highlight the significant benefits of SPE for secondary school learners, with a focus on promoting health, motor and cognitive skill development, and enhancing critical thinking abilities. However, it is important to recognise that, while SPE primarily targets motor skills development, UPE also plays an essential role in helping learners understand that PE is fundamentally centred on fitness and overall health, principles that are complementary to the objectives of SPE. The physical activities engaged in during UPE contribute to learners' overall PA levels, thereby facilitating their active participation in the more structured environment of SPE.

Conclusion: This study highlights the complementary roles of structured and unstructured PE in supporting adolescent development. Structured PE fosters motor skill acquisition, physical fitness, and classroom readiness, while unstructured PE encourages creativity, independent thinking, and peer interaction. By intentionally integrating both PE formats into the curriculum, educators can create more engaging and developmentally supportive environments that not only enhance physical activity levels but also contribute to learners' cognitive, emotional, and social growth. These findings offer practical guidance for improving PE delivery in South African schools.

Keywords: Structured, Unstructured, Physical education, Learners, High school, Cape Town, Adolescent development, Motor skills development.

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1. INTRODUCTION

Physical inactivity among high school learners is a significant global concern that affects urban and rural settings alike [1]. Research from various countries, including Pakistan, Iran, the United States of America, Spain, and Nepal, reveals alarming levels of physical inactivity among adolescents [1]. According to Onagbiye and Bester [2], adolescent physical activity (PA) has decreased in both developed and developing countries, such as South Africa (SA), in the past ten years. Consequently, the World Health Organisation [3] has recommended that children and adolescents participate in at least 60 minutes of moderate-to-vigorous PA per day.

One way of meeting these recommendations is through Physical Education (PE) classes. In the South African curriculum, Physical Education (PE) Physical Education (PE) is incorporated into Life Orientation (LO) to promote learners' physical well-being, movement competence, and awareness of the benefits of an active and healthy lifestyle [4]. Together, these aspects of health/PE provide a platform to nurture positive values and attitudes that could translate to positive health behaviours. However, PE-delivery in South African schools faces challenges due to issues such as time allocation, class size, and the lack of resources, impacting its effectiveness in the educational system and, ultimately, the well-being of learners [5]. Consequently, high school learners are not meeting these WHO recommendations [6]. For example, physical inactivity and the lack of PE prevalence among high school adolescents in Iran was 72.2%, indicating a significant issue that requires targeted interventions to promote PA in this population [7].

Research from various studies in SA indicates concerning trends regarding PA levels and sedentary behaviour among male and female teenagers. Previous research has indicated that South African teenagers are sedentary and do not sustain sufficient levels of PA [8]. The prevalence of physical inactivity, defined as doing none or very little PA activity, has been estimated to be 43%–49% in South Africans aged 15 years and older. In addition, it has been reported across other African countries that less than 50% of adolescents, between 13 and 15 years of age, are physically active for at least 60 minutes a day, on at least 3 days a week [9-11]. Additionally, recent studies that are focused on adolescent health have highlighted obesity as a serious issue. In many developing countries, including SA, PE is not universally regarded as a fundamental building block for adolescent growth, and therefore, may potentially lead to declines in these developmental aspects [12].

To teenagers, schools are the main access point for PE; therefore, schools should be the core driving force behind the improvement of adolescent health, as well as a shift in their perspectives on the subject [13, 14]. The educators could fulfil the important role of providing learners with the appropriate perceptions of, and attitudes toward PE, as learners usually follow their teachers' example [15, 16]. Consequently, when educators are successful in changing the way in which learners perceive PE, a new status could be bestowed on the subject. According to Sánchez-Oliva *et al.* [17], PE classes serve as an ideal setting for cultivating these perspectives and attitudes, as they promote interpersonal communication among learners. The authors of this current research study, therefore, advocate for its importance, as it provides insight into SPE and UPE, and consequently, fills a knowledge void.

In the 21st century, according to Balasekaran *et al.* [18], the learning environments of formal PE (also known as *Structured PE* or SPE) and informal PE (also known as *Unstructured PE* or UPE), found in schools and the community, must be crafted to inform, inspire, as well as transform individuals, to enhance their lives, work, and play. However, since the world is becoming increasingly interconnected, such learning environments will require a more global perspective [19].

1.1. Structured Physical Education

Structured PE (SPE) lessons are designed and facilitated by a knowledgeable and experienced instructor, typically a LO or PE educator [20]. These structured classes, consisting of indoor or outdoor activities, support children's fundamental motor development, goal-setting abilities, and enjoyment of movement. For instance, these types of activities may include musical games, bean bag races, "Simon Says", or "Follow the Leader". SPE is further characterised by clear learning outcomes, assessment criteria, and progression, making it distinct from UPE. The focus in SPE is on skill acquisition and measurable improvements in physical literacy under teacher guidance [20]. These lessons provide an opportunity to examine school-based PE and playground interventions that encourage unstructured active play and PA during recess, ensuring the effective promotion of adolescent PA nd PE [20].

1.2. Unstructured Physical Education

Unstructured PA (UPE) consists of lessons that are not directed by LO or PE educators; instead, learners utilise this time for self-selected free play [21]. For example, these activities may include spontaneous games, using handball, and playing tag [22]. According to Eime *et al.* [23], UPE is often described as a break from the structured [formal] study routines. This type of lesson assists in the development of the adolescents' cognitive functioning, enabling them to conceive new games and activities creatively [21]. UPE also provides learners with opportunities to develop problem-solving skills, social competence, and autonomy, as they navigate peer dynamics without adult intervention. Moreover, these informal environments often foster enjoyment and intrinsic motivation, both of which are key predictors of long-term physical activity participation [21-23].

However, the dearth of comprehensive UPE research, in contrast to the well-documented benefits of SPE, accentuates a critical knowledge void about their respective effects on high school learners [20]. While SPE is widely acknowledged as an effective method of PE

delivery [24], the potential benefits of both SPE and UPE combined remain largely unexplored, particularly in the African context. Understanding these benefits, therefore, is crucial for the development of effective strategies that promote PE among adolescents. Therefore, based on this evidence, the following research question was formulated: What are the perceived benefits of structured and unstructured PE among high school learners in Cape Town? By examining these two formats through the lens of learner experiences, the research contributes to a deeper understanding of how different PE environments influence adolescent development. Consequently, this current study is aimed at examining the perceived benefits of SPE, as well as UPE, among high school learners in Cape Town, SA, to inform educational practices that could enhance learners' overall well-being and PE participation levels.

2. METHODOLOGY

2.1. Study Design and Setting

Following the Sex and Gender Equity in Research (SAGER) guidelines [25], a quantitative, cross-sectional study design was adopted for this current research, through the application of a survey, to examine the perceived benefits of SPE and UPE among learners at high schools in Cape Town, SA. The research setting under investigation included ten high schools (n = 10), located in and around Cape Town, SA. As the main researcher in this current study had previously established communication, as well as a good rapport with some of the high school principals, before the commencement of the research process, arranging meetings and gaining access to the schools were trouble-free. Once access to the schools was granted, the survey was discussed and distributed among the LO and/or PE educators during the LO and/or PE periods. The classroom setting was similar at all the schools; the learners were all seated at their desks, quietly reading and completing the survey questions. Data collection was implemented between January and October 2019.

2.2. Respondents and Sampling

Purposive sampling was employed in this current study to recruit a sample of respondents who would provide the necessary information sought to satisfy the aims and objectives of the study. Additionally, purposive sampling was used to specifically select learners who had come from Cape Town high schools, who had experience with either structured and unstructured PE lessons, ensuring the collection of relevant and meaningful data that would be relevant for this study. The inclusion criteria for the respondents were as follows: (1) Learners enrolled in Grade 8 or 9; (2) between the ages of 13 and 16; and (3) with parental assent for voluntary participation. The exclusion criteria entailed the following: (1) Learners not enrolled in Grade 8 or 9; (2) Being 12 or 17 years old; and (3) with no parental assent. Therefore, with an average of 18 to 40 learners per class, in 2 classes per school, the estimated population for the ten schools was 800 (N=800). For statistical power, a minimum sample of 260 surveys was acceptable to make statistically discernible inferences about the population [25]. Using Raosoft Inc. software [26], the effect size of 0.5, with an actual power of 0.8 (80%) was calculated to obtain the sample size through the application of the following formula:

$$x=Z\left⟦[c/100]\right⟧^2 r(100-r). (26)$$
$$n=Nx/([(N-1) E^2+x].) (26) \quad (1)$$
$$E=Sqrt[(N-n)x/(n[N-1])]. (26)$$

In the above formula [26]: ‘Z[c/100]’ is the critical value for the confidence level c; ‘r’ is the fraction of the responses in which the researcher is interested; ‘n’ is the sample size; ‘N’ is the population size; and ‘E’ is the margin of error. This calculation was based on a normal distribution and was utilised as more than 30 respondents were involved in the study [27]. The sample size was determined using a standard formula for a finite population, which incorporated assumptions for effect size, desired statistical power, and margin of error. This approach ensures that the sample size is large enough to provide reliable estimates while maintaining statistical rigor for the analysis. Although 260 respondents were calculated as an appropriate sample size for this current study (of which the institutional ethics committee approved), a total of 321 learners participated in the PE survey, exceeding the minimum sample size to provide more robust and statistically significant findings.

2.3. Data Collection Survey

For this study, a self-developed data collection instrument was designed by drawing on established surveys related to PE and adolescent physical activity and guided by relevant literature on structured and unstructured PE benefits [23, 28]. The survey comprised two sections, namely, demographic information and PE. Section one gathered demographic details, including age, gender, PE resources, PE periods, activities, and reasons for participation. Section two assessed the benefits of SPE and UPE using an 8-item Likert scale. Learners responded to statements such as “Physical Education is important” and “The skills I learn in Physical Education are important,” selecting from options: strongly agree, agree, disagree, or strongly disagree. The survey was administered in English, and twenty learners, not part of the main study, voluntarily participated in the pilot testing to ensure clarity and assess the survey's duration. The survey took approximately 15-20 minutes to complete. A Cronbach Alpha score of 0.6 was obtained from the pilot, meeting the acceptable threshold for exploratory research (0.60) [29]. Thereafter, the final data collection stage began.

2.4. Procedure

The survey administration for this current study was conducted by the primary researcher, with assistance from PE educators, within their respective classrooms. High school learners (Grade 8 and 9) were invited to participate voluntarily, after receiving a briefing on the study's aims and objectives. To participate, the learners were required

to sign a consent form, with parental assent also obtained for those under 16 years of age. A total of 800 surveys were distributed to Grade 8 and Grade 9 learners at 10 high schools in Cape Town. Of these, 479 responses were invalidated, due either to lack of parental consent or failure to return the survey to the researcher. Ultimately, 321 surveys were returned, with parental as well as learner consent, and consequently, 321 high school learners participated in this study.

2.5. Statistical Analysis

The Statistical Package for the Social Sciences (SPSS) version 28.0 [30] was employed for data analysis. Data were collected, coded, and cleaned for errors using a double-entry method within Microsoft Excel. Two research teams independently entered the data, and discrepancies were resolved by comparing the entries. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated to summarise the survey sample characteristics and the quantitative data. A Shapiro-Wilk test was performed to assess the distribution of the data, which indicated a non-normal distribution. Given the non-parametric nature of the data, non-parametric statistical tests were selected. Specifically, the Mann-Whitney U test was used to compare responses between Grade 8 and Grade 9 learners, as it is appropriate for comparing two independent groups with ordinal or non-normally distributed data. This approach ensured that the assumptions of normality and homogeneity of variance were not violated, making the chosen statistical tests suitable for the dataset.

2.6. Ethical considerations

Approval to conduct this study was granted by the University of the Western Cape's Human and Social Sciences Research Ethics Committee (reference number: HS18/7/23) and the Western Cape Education Department (reference number: 20181106-8239). Moreover, during data collection, all ethical guidelines outlined in the Declaration of Helsinki were strictly followed to ensure full adherence to ethical standards.

3. RESULTS

3.1. Information of Respondents

The respondent's information about the high school pupils is presented in Table **1**. The high school learners' ages ranged from 13 to 16 years, with a mean age of 14.5 (SD = 0.96) years. The majority of respondents were female (53.9%) and emanated from the Grade 9 group (62.9%). One hundred and sixty-four (48.9%) respondents indicated that their schools offered a PE period, while 157 (51.1%) disclosed that their schools did not. In addition to a PE period, 69.2% of the learners stated that they had resources for this period, while 30.8% reported that they had none. According to the learners, the top five PE activities that they enjoyed most were running (39.9%), soccer (38.3%), slow jogging (26.5%), netball (21.5%), and dancing (20.6%). In contrast, the least enjoyed PE activities were brisk walking (2.8%), hockey (0.9%), tree-climbing, hopscotch, and aerobics (1.6%, respectively).

Table 1. Respondents' information on high school learners.

Category	Sub-category	N (%)
Gender	Female	173 (53.9)
	Male	148 (46.1)
Grade	8	119 (37.1)
	9	202 (62.9)
Having a Physical Education Period	Yes	164 (48.9)
	No	157 (51.1)
Having resources for Physical Education	Yes	222 (69.2)
	No	99 (30.8)
PE lesson- why learners engage in class	To exercise	143 (44.5)
	To be with friends	94 (29.3)
	Nothing	78 (24.3)
	To get out of the academic class	57 (17.8)
	To be healthy and fit	55 (17)
	To run and play soccer	34 (10.6)
	Because PE is life-changing	34 (10.6)
PE lesson - most enjoyed activities	Running	128 (39.9)
-	Soccer	123 (38.3)
-	Slow jogging	85 (26.5)
-	Netball	69 (21.5)
-	Dancing	66 (0.6)
-	Skipping/jumping rope	46 (14.3)
-	Swimming	27 (8.4)
-	Team building	26 (8)
-	Handball	26 (8)

(Table 1) contd.....

Category	Sub-category	N (%)
-	Volleyball	25 (7.8)
-	Rugby	21 (6.5)
-	Basketball	20 (6.2)
-	Yoga	12 (3.7)
-	Gymnastics	11 (3.4)
-	Tug-of-war	11 (3.4)
-	Tennis	11 (3.4)
-	Brisk walking	9 (2.8)
-	Hopscotch	5 (1.6)
-	Aerobics	5 (1.6)
-	Tree climbing	5 (1.6)
-	Hockey	3 (0.9)

3.2. Physical Education Period and After-school Activities

The students' responses to whether they participated in a PE period, or after-school sports and physical activities, are presented in Table **2**. The responses from Grade 8 learners revealed that only 42.9% participated in PE classes, while the majority of 57.1% did not. A similar trend emerged for after-school activities, as 46.2% engaged in sports, while 53.8% refrained. The Grade 9 learners' responses revealed a noticeable increase in PE class participation, rising to 55.9%, while 44.1% still did not participate. However, this increase did not extend to after-school activities, as the participation rates remained similar to those of the Grade 8's, with 46% participating, and 54% not engaging in such activities. The data highlights that, while PE class participation improved from Grade 8 to Grade 9, a significant number of learners in both grades did not participate in after-school physical activities. The observed differences between grades may exist due to some plausible reasons. As learners progress from Grade 8 to Grade 9, they may experience increased familiarity with school routines, greater exposure to PE, and stronger social influences from peers and educators, which can encourage participation. Additionally, Grade 9 learners may feel more confident or motivated to engage in structured activities compared to Grade 8 learners who are still adjusting to the high school environment. These developmental and contextual factors could help explain the increase in PE participation across grades.

3.3. Structured and Unstructured Physical Education

In Table **3**, the male and female responses to structured and unstructured PE are presented. According to the data, the learners perceived SPE as an activity that significantly enhances skills development (Grade 8: M = 3.09, *SD* = 0.925, $p < 0.05$; Grade 9: M = 3.07, *SD* = 0.846, $p < 0.05$), with no significant difference between the two grades. Similarly, both grades maintained positive perceptions of PE classes, which, in their opinion, boosted cognitive abilities (Grade 8: M = 3.16, *SD* = 0.753, $p < 0.05$; Grade 9: M = 3.16, *SD* = 0.705, $p < 0.05$), as well as health (Grade 8: M = 2.99, *SD* = 0.821, $p < 0.05$; Grade 9: M = 3.18, *SD* = 0.747, $p < 0.05$), although females rated health benefits slightly higher. In contrast, UPE, such as break times, was considered more enjoyable by the learners (Grade 8: M = 2.74, *SD* = 0.977, $p < 0.05$; Grade 9: M = 2.60, *SD* = 0.951, $p < 0.05$), with no significant difference observed between the grades. Similarly, the learners from both grades regarded skills learned during break times as beneficial for PE activities (Grade 8: M = 2.76, *SD* = 0.936, $p < 0.05$; Grade 9: M = 2.82, *SD* = 0.894, $p < 0.05$), and demonstrated comparable levels of creativity in devising new physical activities (Grade 8: M = 2.72, *SD* = 0.969, $p < 0.05$; Grade 9: M = 2.75, *SD* = 0.943, $p < 0.05$). Additionally, the learners reported equally moderate physical activity levels during structured PE classes, as well as unstructured break times (Grade 8: M = 2.83, *SD* = 1.006, $p < 0.05$; Grade 9: M = 2.83, *SD* = 0.961, $p < 0.05$). The lack of significant differences between Grade 8 and Grade 9 learners may be attributed to similar exposure to the school's PE programme and shared access to physical activity opportunities within the school environment. Both grades likely follow comparable PE curricula, which standardise their experiences with structured activities. Furthermore, perceptions of UPE may remain consistent across grades due to shared break-time environments and peer interactions, which shape learners' enjoyment, creativity, and perceived skill development. This consistency suggests that the school's physical activity offerings may be equally effective across early high school years.

Table 2. Students' responses to whether they participated in a physical education period, or after-school sports and physical activities.

Category	Grade 8		Grade 9	
	Yes (%)	No (%)	Yes (%)	No (%)
Do you participate in PE class?	42.9	57.1	55.9	44.1
Do you participate in after-school sports and physical activities?	46.2	53.8	46	54

Table 3. Male and female responses to structured and unstructured physical education.

Physical Education	Male		Female	
	Mean	SD	Mean	SD
Structured physical education				
I learn more skills during physical education class than during break time.	3.09	0.925	3.07	0.846
I am alert in class & have more energy on days when I have a physical education period.	2.91	0.895	2.97	0.788
Structured lessons improve my thinking abilities.	3.16	0.753	3.16	0.705
Structured lessons improve my health.	2.99	0.821	3.18	0.747
Unstructured physical education				
I have more fun during break time than in a physical education class.	2.74	0.977	2.60	0.951
The skills I learn in break time help me to do the activities in physical education class.	2.76	0.936	2.82	0.894
I am able to think creatively about new physical activities and games during break time.	2.72	0.969	2.75	0.943
I am more physically active during break time than during the physical education period.	2.83	1.006	2.83	0.961

Note: SD = Standard deviation.

The learner responses to the Likert scale survey, which focused on SPE and UPE statements, are displayed in Table **4**. Regarding the SPE benefits related to motor and cognitive skills development, the majority of the learners (45.2%) agreed that they had learned skills in an SPE class, instead of during recess. In addition, the findings revealed that the learners were more alert, and displayed more energy (53.9%) during SPE classes, while 52.3% of learners agreed that SPE improved their thinking abilities, as well as their health (46.7%). Conversely, UPE was regarded as a beneficial lesson because of the creativity components that these classes employed. The learners added that UPE was beneficial, as they experienced "*more fun during break time than in a physical education class*" (29.9%). The "*skills I learn in break time help me to do the activities in physical education class*" were also *strongly agreed* to by 38.9% of the learners. Additionally, the learners agreed that they were able to think creatively about inventing new games in an unstructured lesson; consequently, 40.5% of them responded positively to the scale item, "*I am able to think creatively about new physical activities and games during break time*".

As depicted in Table **4**, the learners agreed to be more physically active during break times in an unstructured lesson (31.2%); however, they disclosed that more skills were learnt in a structured lesson. Finally, the Grade 8 and 9 results were statistically not significant. It could also be concluded that, according to the results of SPE in Grade 8 ($M = 12.36$, $SD = 2.32$, $p < 0.05$), and Grade 9 ($M = 12.23$, $SD = 2.40$, $p < 0.05$), there was no significance between SPE in Grade 8 and 9 classes. In terms of the means of UPE in Grade 8 ($M = 10.80$, $SD = 2.77$, $p < 0.05$) and Grade 9 ($M = 11.15$, $SD = 2.68$, $p < 0.05$), there was no significance. This further supports the study's objective of exploring learners' perceptions of both structured and unstructured PE, showing that while engagement patterns vary, the overall perceived benefits are consistently valued across grades.

Table 4. Learner responses to structured and unstructured physical education.

Physical Education	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	SD
	%	%	%	%		
Structured physical education						
I learn more skills during physical education class than during break time.	35.2	45.2	11.8	7.8	3.08	0.882
I am alert in class & have more energy on days when I have a physical education period.	24.3	53.9	13.7	8.1	2.94	0.839
Structured lessons improve my thinking abilities.	33.0	52.3	12.1	2.5	3.16	0.727
Structured lessons improve my health.	33.0	46.7	17.1	3.1	3.10	0.787
Unstructured physical Education						
I have more fun during break time than in a physical education class.	24.0	29.9	34.9	11.2	2.67	0.964
The skills I learn in break time help me to do the activities in physical education class.	24.6	38.9	27.7	8.7	2.79	0.912
I am able to think creatively about new physical activities and games during break time.	22.7	40.5	24.0	12.8	2.73	0.954
I am more physically active during break time than during the physical education period.	30.8	31.2	28.0	10.0	2.83	0.980

Note: SD = Standard deviation.

4. DISCUSSION

The findings of this study highlight the significant benefits of SPE for secondary school learners, with a focus on promoting health, motor and cognitive skill development, and enhancing critical thinking abilities. However, it is important to recognise that, while SPE primarily targets motor skills development, UPE also plays an essential role in helping learners understand that PE is fundamentally centred on fitness and overall health, principles that are complementary to the objectives of SPE. The physical activities engaged in during UPE contribute to learners' overall PA levels, thereby facilitating their active participation in the more structured environment of SPE. Therefore, both SPE and UPE provide distinct yet complementary benefits, each contributing in unique ways to the learners' holistic PE experience.

Structured Physical Education (SPE), as examined by the learners in both Grades 8 and 9, was valued consistently for its role in enhancing skills development, cognitive abilities, and overall health. This highlights the effectiveness of a structured PE curriculum in meeting educational objectives related to physical, as well as cognitive growth. Similar results were observed in another study, in which it was reported that PA and PE brain-breaks in the classroom are efficient ways of not only promoting healthy behaviours among high school learners but also aiding in the development of their cognitive and academic abilities [24]. Notably, female learners tend to perceive the health benefits of SPE more positively than their male counterparts do, indicating a potential gender-specific response to structured PE activities. Plausible reasons for this may include factors such as perceptions of peer and teacher support, perceived value and meaningfulness, as well as perceived competence, which play crucial roles in influencing learners' intentions to be engaged in PE, with girls being more influenced by these factors, compared to boys [31]. According to previous authors, PE classes, whether single-sex or coeducational, could impact female learners' comfort levels significantly, highlighting the importance of creating a positive environment through feedback and encouragement from PE educators [31]. This suggests that gender-specific interventions should be considered when designing and implementing SPE activities to promote PA engagement among learners [32].

Conversely, UPE, especially during break times, was preferred by learners for its enjoyable and creative elements [33]. This preference highlights the importance of unstructured activities in fostering student engagement and encouraging creativity in physical pursuits. Despite the informal nature of UPE, learners acknowledge that the skills acquired during these periods are practical and beneficial when applied to structured PE activities [22]. This demonstrates a synergistic relationship between structured and unstructured PE, where UPE complements SPE by promoting creative thinking and adaptability in physical tasks [33]. These results aligned with a study conducted by Práxedes *et al.* [22], which indicated that UPE, through small-sided games, has been observed to improve decision-making significantly, as well as skill execution in learners, emphasising the importance of unstructured experiences, such as school recess. In addition, Kinder *et al.* [33] further explain that UPE benefits include the promotion of activity and learning among youth, contributing to their overall health and well-being.

In the South African context, the integration of SPE and UPE could include a variety of culturally relevant activities. For example, structured PE classes might involve traditional sports, such as rugby, cricket, and netball, which are popular and widely practiced across the country. These sports not only build motor skills and fitness but also teach important values, such as teamwork, discipline, and strategic thinking. These results are supported by previous research, which reported that traditional sports promote teamwork and discipline by fostering collaboration in games and adherence to rules, enhancing social skills, as well as self-control among respondents, and contributing to personal and group development [34]. Conversely, unstructured activities could incorporate indigenous games during break times, which may be beneficial for the development of cognitive skills and the promotion of social interaction among learners. These results concur with those of a study conducted by Almonte and Andal [35], which revealed that integrating indigenous game-based activities has been observed to impact interactive learning positively among high school learners, highlighting the potential of these games to enhance educational settings and promote collaborative learning experiences.

According to the findings, structured PE classes and unstructured break times were associated with similar levels of moderate PA among high school learners. This suggests that, while structured classes emphasise the development of specific skills and cognitive benefits, unstructured periods contribute significantly to overall physical engagement, without compromising activity levels. For instance, during break times, learners could engage in spontaneous activities, such as “ag” or “soccer” on the playground, which would keep learners active, encourage creativity, and enhance their social skills. Plausible reasons for these results may be due to previous research, indicating that traditional PE classes often lack the effectiveness of more interactive and engaging approaches, which may hinder high school learners' progress [36]. Therefore, incorporating diverse teaching methods in high school PE programmes may enhance their overall impact, promote students' physical and mental well-being, as well as foster a lifelong interest in PA [37].

The integration of both SPE and UPE is critical for the optimisation of PE programmes [20, 24]. The implications of this study suggest that educators should design inclusive and effective PE programmes that incorporate structured, as well as unstructured elements, to foster comprehensive student development. This approach could lead to more engaging and meaningful PE experiences that promote lifelong PA and well-being. By embracing the

strengths of both SPE and UPE, South African schools could create a more dynamic and supportive environment that nurtures all aspects of high school learners' health and development. Additionally, in SA, where schools often face challenges, such as limited resources and large class sizes, the flexibility of UPE may provide valuable opportunities for all learners to participate actively, regardless of these constraints. Consequently, South African schools should design PE programmes that accommodate a broad spectrum of interests and abilities, ensuring that all learners have the opportunity to benefit from structured, as well as unstructured, physical activities. For instance, schools might implement a rotating schedule that includes both structured sports sessions and free play periods, allowing learners to benefit from formal training, as well as the joy of unstructured, creative activities [22, 33].

4.1. Strengths and Limitations

The primary strength of this current study lies in the novel insights regarding the benefits of SPE and UPE, as well as their respective influence on high school learners' health and development. However, several limitations were encountered, which warrant attention. A limitation of this study is the use of purposive sampling, which may limit the representativeness of the sample and restrict the generalizability of the findings to a broader adolescent population. Participants were selected based on their involvement in PE lessons at selected schools, which may not capture the diverse experiences of learners in other regions or educational contexts. To address this, future research should consider using probability-based sampling methods, such as stratified or cluster sampling, to enhance representativeness. Expanding the study to include a wider range of schools across different provinces or socio-economic backgrounds could also provide a more comprehensive understanding of how structured and unstructured PE influences adolescent development. Furthermore, the data collection instrument, although based on existing surveys and literature, was self-developed and only pilot tested within a small sample. While face and content validity were considered, the instrument may not have been fully validated for use across diverse educational or cultural contexts, which may affect the reliability and generalizability of the findings. Future researchers are encouraged to either adapt existing, widely validated instruments or undertake more rigorous validation processes, such as factor analysis, test-retest reliability, and expert panel review, to strengthen the tool's reliability and ensure its applicability in varied settings. Despite extensive efforts to distribute and explain the study documentation clearly to high school learners, this research faced a significant dropout rate, primarily due to a lack of parental consent. Future studies should consider employing multiple research assistants to enhance respondent recruitment and engagement effectively. Additionally, this study did not include primary schools, suggesting that researchers who are undertaking similar investigations should include primary school settings for a more comprehensive analysis. Finally, only high schools situated in Cape Town were examined; therefore, any researchers wishing to investigate a similar topic should include high schools from different regions of SA, which would make the findings more generalisable to the high school learner population. To further enrich the findings, future research should also employ mixed-method approaches, combining quantitative and qualitative data, to provide a deeper and more holistic understanding of the effects of both SPE and UPE.

5. FUTURE STUDIES

A potential area for future research could explore how gender influences engagement and response to SPE AND UPE activities. Specifically, studies could investigate the role of social and cultural factors, such as perceived support, competence, and motivation, in shaping the participation of male and female learners in PE. By examining how different pedagogical strategies affect each gender's engagement, future research could contribute to the development of gender-responsive PE programmes that foster a more inclusive and supportive learning environment, ultimately enhancing participation and motivation for all students.

CONCLUSION

The findings of this study indicate that through SPE, learners acquire essential skills such as motor development, increased alertness in class, enhanced energy levels, and engagement in health-promoting activities. These results highlight the positive impact of SPE on adolescent growth and development, including the ability to learn new skills in a structured environment, improved cognitive function, and enhanced teamwork and cooperation. Additionally, the study found that UPE allows learners to experience fun and free play, apply activities learned on the playground in class, think creatively about new games, and engage in increased PA. These findings suggest that UPE supports adolescent maturity by fostering creativity, soft skills, social interaction, game improvisation, innovation, and initiative across various PA tasks. A deeper understanding of the factors shaping adolescent culture may aid in developing effective intervention programmes that promote sustained PA and PE from childhood into adulthood, potentially reducing the risk of sedentary behavior and associated health issues. Based on these findings, practitioners should consider designing PE programmes that blend both structured and unstructured activities to foster skill development, creativity, and social engagement among students. It is also recommended that future PE curriculum revisions incorporate elements of both SPE and UPE to maximise student participation and long-term health benefits. For future research, further studies could investigate the long-term impact of SPE and UPE on student health outcomes, explore gender-specific responses to these activities, and examine the role of teacher training in enhancing the effectiveness of both structured and unstructured PE. These areas of inquiry could help to refine PE programmes and contribute to better health promotion strategies in educational settings.

RECOMMENDATIONS AND HEALTH POLICY IMPLICATIONS

Based on the findings of this current study, several recommendations are proposed. Firstly, many teachers lack adequate training and motivation, which hampers effective PE delivery [38]. Similarly, educators face dual roles and pressures, leading to burnout and reduced motivation to engage students in PE [39-41]. Therefore, high school educators should be provided with ongoing teacher education opportunities, such as workshops and in-service training, to enhance their understanding and effective utilisation of PE periods. Secondly, educators could boost student engagement in SPE and UPE by designing activities and content that resonate with learners' daily lives, fostering skills such as problem-solving and social cohesion. This approach is anticipated to influence student behaviour positively, beyond school hours, potentially reducing rates of adolescent crime and gang involvement. Acknowledging teachers as pivotal influencers in the PE environment, efforts should focus on enhancing their strategies for SPE and UPE through collaborative engagements with stakeholders. Finally, implementing a flexible approach that alternates between SPE and UPE lessons may enhance classroom engagement and enjoyment among learners. These recommendations are aimed at optimising the impact of PE programmes on student development and well-being.

In terms of health policy, the Curriculum Assessment Policy Statements (CAPS) document needs to be revised and adapted to suit SPE and UPE, with a separate set of aims and objectives for each type of PE. Indigenous games could be incorporated into the CAPS curriculum development, to tailor the policies according to the games in which adolescents participate. This would make the syllabus more relevant to what the learners engage in in their everyday lives. Policymakers and health experts should advocate for a revision of the South African PE curriculum to enhance its relevance and effectiveness [38]. By creating an appropriate curriculum, learners would be provided with a voice and be empowered to learn new skills, games, as well as physical activities, which would enhance social cohesion and inclusivity among them. The findings of this study emphasise the need for educational policies and teachers that foster a more comprehensive and flexible approach to PE [40-42]. Integrating both structured and unstructured PE activities into the curriculum could better cater to diverse learning styles and promote broader engagement among students. Policymakers should consider these findings when revising the CAPS to ensure that both types of PE are adequately represented, with distinct objectives and strategies for each. Furthermore, incorporating culturally relevant activities, such as indigenous games, would make PE more relatable and engaging for students, potentially increasing their participation and enthusiasm [43]. This approach not only aligns with educational objectives but also contributes to broader health policies aimed at improving adolescent well-being. By prioritising inclusive and contextually relevant PE, schools and teachers can play a pivotal role in promoting lifelong healthy behaviours and achieving public health goals in South Africa [42]. Ultimately, enhancing PE among learners would contribute directly to Sustainable Development Goal 3, which emphasises good health and well-being. By prioritising physical education, the overall health and well-being of learners could be improved, promoting a healthier, more active lifestyle in SA [40, 44].

LIST OF ABBREVIATIONS

CAPS	=	Curriculum Assessment Policy Statements
LO	=	Life Orientation
PA	=	Physical Activity
PE	=	Physical Education
SA	=	South Africa
SPE	=	Structured Physical Education
UPE	=	Unstructured Physical Education
WHO	=	World Health Organization

AUTHORS' CONTRIBUTIONS

The authors confirm their contribution to the paper as follows: study conception and design: CJ; data collection: CJ; Data Analysis or Interpretation: CJ; methodology: CJ; investigation: CJ; draft manuscript: CJ, ST, MY. All authors reviewed the results and approved the final version of the manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Permission to conduct this current study was obtained from the University of Western Cape, Human and Social Sciences Research Ethics Committee, South Africa (reference number: HS18/7/23), as well as the Western Cape Education Department (reference number: 20181106-8239).

HUMAN AND ANIMAL RIGHTS

All procedures performed in studies involving human participants were under the ethical standards of the institutional and/or research committee and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Information about the study was provided to the participants in person, and after, written informed consent was obtained online for voluntary participation in the study.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data and supportive information are available within the article.

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CONFLICT OF INTEREST

The authors declared no conflict of interest, financial or otherwise.

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