



## Article

# Gender-Based Biopsychosocial Correlates of Truancy in Physical Education: A National Survey among Adolescents in Benin

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**Abstract:** Truancy among in-school adolescents has long been established as a major issue that negatively impacts educational attainment or goals and mental health-related issues. However, research on subjects such as physical education (PE) truancy and its correlates is somewhat limited. This study estimated the prevalence of PE and assessed the factors associated with PE truancy in Benin among in-school adolescents. The 2016 Benin's Global School-Based Health Survey (GSHS) data from a sample of in-school adolescents (n = 2496; 13–17 years) were used for data analysis. The overall prevalence of past 30-day truancy in PE class was 15.4%, with female adolescents reporting a higher prevalence of PE truancy than their male counterparts. Stratified by gender, the regression analyses showed that males in 3rd–6th grade (aOR = 0.69, CI = 0.50–0.96) experiencing hunger (aOR = 0.51, CI = 0.32–0.81) and having suicidal ideations (aOR = 1.64, CI = 1.07–2.53) predisposed adolescents to PE truant behaviour. For female in-school adolescents experiencing hunger (aOR = 1.75, CI = 1.15–2.65), drinking alcohol (aOR = 0.62, CI = 0.44–0.87), having sedentary lifestyles (aOR = 0.62, CI = 0.40–0.96), and being physically attacked (aOR = 0.53, CI = 0.33–0.87) were significantly associated with PE truancy. However, understanding and supportive parents [aOR = 0.61, 95% CI = 0.41–0.91] was a protective factor against PE truancy. The present findings suggest the design of gender-sensitive school-based interventions to help minimise or prevent PE truancy among in-school adolescents in Benin based on the predisposing factors while emphasising the protective influences.

**Keywords:** Benin; delinquency; parental support; physical education; supervision; truancy



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## 1. Introduction

Physical education (PE) is essential to any educational curriculum as it promotes a healthy and active lifestyle, improves physical fitness, and enhances social and cognitive development (Wood and Hall 2015; Mieziene et al. 2021). However, students' inactive attendance in PE classes is a major concern among educators (Baghurst et al. 2015; Emeljanovas et al. 2015; Boiché et al. 2020; Mieziene et al. 2021). For example, in a cross-national comparison, 41.3% of school students attended no PE classes (Bann et al. 2019). A study in Brazil revealed that only 41.9% of high school students attended two or more PE classes per week (Prazeres Filho et al. 2019). Another study showed that PE is skipped twice as often as other subjects, such as Mathematics, Biology, Chemistry, and Physics, or even more often

than native language subjects (Sälzer and Heine 2016). It is noteworthy that insufficient engagement during PE lessons increases the chance of future physical inactivity after 20 or more years (Emeljanovas et al. 2015). More recently, 58.4% of high school students intentionally skip their PE classes at least once weekly (Mieziene et al. 2021).

In-school adolescents constitute a significant proportion of the population globally. In-school adolescents, as used in the GSHS, comprise adolescents (typically between 10 and 19 years old) currently enrolled in educational institutions and actively participating in academic activities within a regulated system. In-school adolescents' truancy in PE is both a health and social problem. It is a significant concern among education stakeholders due to the negative consequences associated with this habit (Yoep et al. 2016; Baiden et al. 2019). School truancy occurs when students detach themselves from school (Epstein and Sheldon 2002). Broadly, school truancy refers to the behavioural or habitual practice of unexcused absence from school by students (Zhang et al. 2010). Henry (2010) defines truancy as intentional absence from school, intentionally leaving school early, or intentionally missing classes.

Universally, the prevalence of adolescent truancy in the past 30 days among in-school adolescents is a major concern in most countries. For example, the occurrence of truancy was as high as 59% in Zambia (Muula et al. 2012); 46% in Liberia (Onyeaka et al. 2020); 41% in Laos, Southeast Asia (Pengpid and Peltzer 2019); and 37% apiece in Bangladesh (Hasan et al. 2023), Mozambique (Seidu 2019), and 37% in Ghana (Onyeaka et al. 2020). Additionally, 32% in Indonesia (WHO 2007; Pengpid and Peltzer 2017), 30–31% in Malaysia (Shah et al. 2012; Yoep et al. 2016), 26% in Tanzania (Seidu et al. 2021), 25% in Pakistan (Hasan et al. 2023), 23% in Benni (Onyeaka et al. 2020), 22% in Swaziland (Siziya et al. 2007), 18% in Thailand (WHO 2008), 15% in Afghanistan (Hasan et al. 2023), 15% in Vietnam (Pengpid and Peltzer 2017), and 11% in the USA reported adolescent truancy (Maynard et al. 2017; Vaughn et al. 2013). The prevalence of truancy in low- and middle-income countries is higher because students from socio-economically disadvantaged schools are likelier to miss school than those in advantaged schools (OECD 2019; Sosu et al. 2021).

Extant investigations have found that in-school adolescents who absent themselves from school, especially without permission, are at more significant risk of adverse educational outcomes such as high school dropout, poor academic performance, school expulsion, and decreased chances of graduation (Aucejo and Romano 2016; Freeman and Simonsen 2015; Pengpid and Peltzer 2019; Smerillo et al. 2018). Furthermore, truancy among schooling adolescents has been identified as a significant risk factor for poor psychological well-being outcomes such as suicidal behaviours, substance use (alcohol, tobacco, and marijuana), crime, and other delinquent behaviours (Asante and Kugbe 2019; Asante et al. 2017; Henry 2010; Holtes et al. 2015; Pengpid and Peltzer 2017; Pérez et al. 2010; Vaughn et al. 2013). Other negative outcomes of school truancy among in-school adolescents are social isolation, mood and conduct disorders, and sleep disturbances (Kassarnig et al. 2017).

The issue of students' truancy in PE is complex and multifaceted, involving various factors that can be understood and addressed by applying the Socio-Ecological Model (SEM) and Biopsychosocial (BPS) model. The SEM recognises that in-school adolescents' truancy in PE is influenced by multiple factors, including individual, interpersonal, organisational, community, and societal levels (Bronfenbrenner 1977; McLeroy et al. 1988). Also, drawing from the perspective of the BPS model, in-school adolescents' truancy in PE is the interconnection between biological, psychological, and socio-environmental factors (Engel 1977; Gatchel et al. 2007). Both models (SEM and BPS) are based on systems theory, which assumes the reciprocal influence of biological, psychological, and social factors. The constructs of the SEM and BPS informed the selection of explanatory variables of adolescent PE truancy in Benin, such that explanatory variables in this study were grouped into demographic, biological/physical, psychological, and social factors. Empirical studies have found that in-school adolescents' truancy is associated with demographics (gender, age, grade level), biological/physical factors (hunger, alcohol use, marijuana use, sedentary lifestyle), psychological factors (suicidal ideation, loneliness, worry), and social factors (truancy from

school, physical attacks, parental supervision of homework, parental understanding and support) (Pengpid and Peltzer 2017, 2019; Seidu 2019; Seidu et al. 2019, 2021).

These factors were grouped into socio-demographic factors, externalising behavioural factors, internalising factors, and protective/social-familial support factors (Pengpid and Peltzer 2017, 2019). For example, socio-demographic factors comprise being male, young/older age (15 years and older), lowest school grade, low-income family background/socioeconomic status, experiencing hunger, and living in residential care (Siziya et al. 2007; Muula et al. 2012; Uppal et al. 2010; Vaughn et al. 2013; Maynard et al. 2017; Pengpid and Peltzer 2017, 2019; Seidu 2019; Seidu et al. 2019; Onyeaka et al. 2020; Hasan et al. 2023; Santos et al. 2023). Externalising factors for school truancy may comprise injury, bullying, facing an attack, physical fighting, substance use (tobacco, alcohol), soft drinks consumption, smoking, sexual risk behaviour, having close friends, and low academic performance (Siziya et al. 2007; Gastic 2008; Mounteney et al. 2010; Muula et al. 2012; Houck et al. 2012; Shah et al. 2012; Kholasezadeh et al. 2013; Vaughn et al. 2013; Bailey et al. 2015; Holtes et al. 2015; Yoep et al. 2016; Maynard et al. 2017; Pengpid and Peltzer 2017, 2019; Bugbee et al. 2019; Seidu 2019; Seidu et al. 2019; Onyeaka et al. 2020; Hasan et al. 2023). Moreover, internalising factors, like feeling lonely and anxiety or depressive symptoms, were significantly associated with adolescents' truancy (Lehmkuhl and Lehmkuhl 2004; Pengpid and Peltzer 2017, 2019; Finning et al. 2019; Seidu 2019; Seidu et al. 2019).

Additionally, protective factors, including communication with peers, peer support, and parental support/problems with parents, or complications with parents, not living with parents, parental supervision, and parental bonding were associated with adolescents' truancy (Lehmkuhl and Lehmkuhl 2004; Siziya et al. 2007; Muula et al. 2012; Vaughn et al. 2013; Yoep et al. 2016; Pengpid and Peltzer 2017, 2019; Baiden et al. 2019; Seidu 2019; Seidu et al. 2019; Onyeaka et al. 2020; Hasan et al. 2023). A study conducted in Lithuania found that the main correlates of PE skipping are sedentary behaviour and social participation. The main preventive factors are the perception of PE usefulness and better self-rated health among direct predictors (Mieziene et al. 2021).

Despite previous studies on the prevalence of truancy among in-school adolescents in developing countries and Africa (Henry 2010; Pérez et al. 2010), there seems to be limited scholarly information on the prevalence of subject-specific truancy among in-school adolescents in Benin (Onyeaka et al. 2020). The few empirical studies in Benin did not consider absenteeism in PE (Onyeaka et al. 2020). Usually, teacher and instruction/school factors are the focus when dealing with PE absenteeism. Less is known regarding the biopsychosocial factors that are associated with truancy, specifically related to PE, and focusing on gender. Attendance of PE classes for adolescents and their well-being aligns with several Sustainable Development Goals (SDGs). These include SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), SDG 11 (Sustainable Cities and Communities), and SDG 17 (Partnerships for the Goals), emphasising the interconnectedness of health, education, equality, and community development in fostering a comprehensive approach to adolescent development.

Therefore, using the BPS model as a framework, this study estimated the prevalence and investigated factors associated with in-school adolescents' PE truancy in Benin. Understanding these factors is crucial for addressing the root causes of truancy and implementing effective interventions. By examining how these factors intersect and influence a student's decision to skip PE lessons, researchers and educators can better understand the complex nature of truancy and develop targeted interventions to address the problem. By applying the SEM and BPS model to student PE truancy, schools can develop comprehensive strategies that manage the multiple factors contributing to absenteeism.

## 2. Materials and Methods

### 2.1. Study Design and Setting

This population-based cross-sectional survey involves the analysis of Benin's 2016 Global School-Based Health Survey (GSHS) dataset. The national dataset can be accessed

via the link <https://extranet.who.int/ncdsmicrodata/index.php/catalog/627/study-description> (accessed on 5 February 2024). The GSHS utilised a self-administered questionnaire to identify factors contributing to health risks and protection against illnesses and fatalities among adolescents aged 13–17 in WHO member nations, including Benin. With the self-administered questionnaire, students were able to independently complete the questionnaires with little or no assistance. The World Health Organization (WHO) collaborated with the United Nations Children’s Fund (UNICEF); the Joint United Nations Programme on HIV/AIDS (UNAIDS); and the United Nations Educational, Scientific and Cultural Organization (UNESCO) in developing the survey. The US Centre for Disease Control and Prevention (CDC) supported the data collection.

## 2.2. Sampling and Data Collection

The GSHS utilised a two-stage cluster sampling approach to recruit students aged 13–17 in Benin. Schools in Benin were eligible for recruitment because Benin is one of the WHO member countries that consented to partake in the GSHS. Also, schools with adolescent populations were considered eligible for the study. In the first stage, schools were selected as primary sampling units based on a probability proportional to their enrolment size. The second stage involved systematic random sampling to select classes within eligible schools. All students in the chosen classes were invited to participate in the study. Before the main data collection, the survey instrument underwent pretesting, including translating questions into French to ensure comprehension. Eligible students self-administered the questionnaire under the supervision of field data collection research assistants. Out of 2536 eligible participants in Benin, data from 2496 students were included for analysis. Missing values exceeding 10% of participants’ responses were excluded. The school response rate was 100%, with student and overall response rates at 78%.

## 2.3. Ethical Considerations

The study received approval from Benin’s Ministry of Health (MOH) and Ministry of Education (MoE) before commencing data collection. The ethical guidelines established by the MOH and MoE in Benin were consistently followed during the entire study. Additionally, adherence to protocols for obtaining permission to enter schools, facilitated by school authorities, was ensured. Adolescents under 18 years of age were required to provide child assent, while their parents were asked to sign a parental consent form after receiving detailed information about the study. The research strictly adhered to ethical standards for conducting research involving human subjects, in accordance with the Declaration of Helsinki, throughout the data collection process.

## 2.4. Study Variables

### Outcome Variable

The study designated PE truancy as the outcome variable, evaluating it based on school-going adolescents’ attendance at PE classes each week. Individuals who participated in PE classes one or more times within a week responded with ‘Yes’ and were assigned a score of ‘1’. Conversely, those who did not attend PE classes responded with ‘No’ and received a score of ‘0’.

### 2.5. Explanatory Variable

This study classified explanatory variables into four categories: demographic (age, grade), biological/physical (hunger, alcohol use, marijuana use, sedentary lifestyle), psychological (suicidal ideation, loneliness, worry), and social (truancy from school, physical attacks, parental supervision of homework, parental understanding and support). In the demographic variables, students aged 13–15 were given a score of ‘1’, while those aged 16–18 received a score of ‘0’. Similarly, 3rd–6th grade was scored as ‘1’, while terminal-2nd grade received a score of ‘0’. For other variables in the biological/physical, psychological, and social categories, a response of ‘Yes’ was assigned a score of ‘1’, while ‘No’ responses were given a score of ‘0’. These variables were defined as whether or not students engaged

in or experienced any of the activities, such as hunger, alcohol, loneliness, et cetera, in the last 12 months before the study. For instance, a variable like alcohol use was defined as whether, in the past 12 months, participants drank any alcoholic beverage. A similar approach was used for the other variables.

### 2.6. Data Analysis

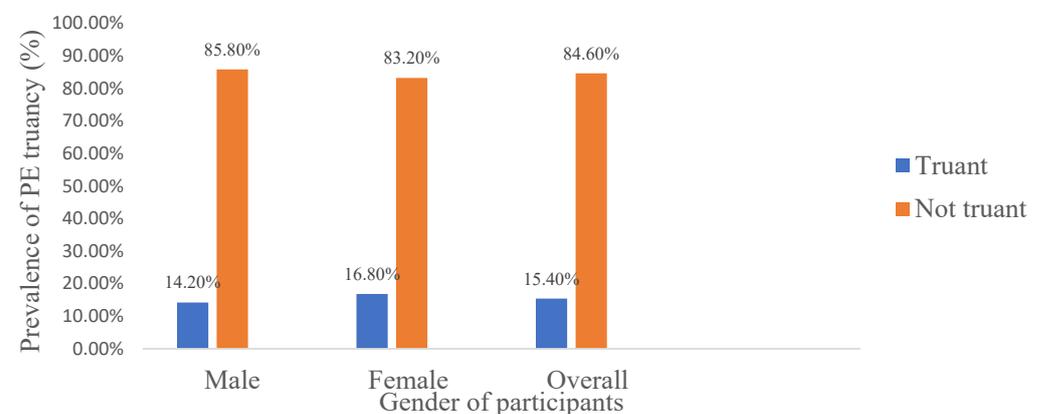
Data extracted from the WHO's GSHS database was cleaned, screened, and analysed using IBM Statistical Package for Social Sciences (SPSS) version 27. The two-stage cluster sampling was considered through the sample weighing approach to ensure the data representativeness for the adolescent population in Benin. The gender-specific and overall prevalence of PE truancy was described using frequencies and percentages, visually represented with a bar chart.

Pearson's Chi-square test was conducted to examine the association between outcome and explanatory variables, and the results were stratified by gender. Multiple binary logistic regression was employed to determine the extent of association between explanatory variables and PE truancy. The goodness-of-fit for the model in both male and female cases was assessed using the Hosmer and Lemeshow test. Multicollinearity was evaluated using the variance inflation factor (VIF), and a VIF below 10 indicated no collinearity. Results from the multiple binary logistic regression analysis were presented using adjusted odds ratios (aOR), and statistical significance was declared at  $p$ -values below 0.05, with a 95% confidence interval (CI).

## 3. Results

### 3.1. Prevalence of PE Truancy among In-School Adolescents in Benin, Stratified by Gender

The results of 2496 participants, comprising 1356 males and 1140 females, have been presented. The results showed that the overall prevalence of PE truancy among the study participants was 15.4%. The prevalence of PE truancy among males was 14.2%, while the prevalence of PE truancy among females was 16.8% (See Figure 1).



**Figure 1.** Gender-based and overall prevalence of PE truancy.

### 3.2. Bivariate Analysis of the Association between Correlates and PE Truancy among In-School Adolescents in Benin, Stratified by Gender

Pearson's Chi-square test was conducted to determine the association between correlates and PE truancy among the study participants. The results showed that among the males, grade ( $p = 0.008$ ), hunger ( $p = 0.022$ ), suicidal ideation ( $p = 0.009$ ), truancy from school ( $p < 0.001$ ), and parental supervision of homework ( $p = 0.021$ ) were significantly associated with PE truancy. However, among the females, grade ( $p = 0.021$ ), hunger ( $p = 0.022$ ), alcohol use ( $p = 0.016$ ), marijuana use ( $p = 0.010$ ), sedentary lifestyle ( $p = 0.014$ ), truancy from school ( $p < 0.001$ ), physical attack ( $p = 0.019$ ), parental supervision of homework ( $p = 0.001$ ), and parental understanding and support ( $p = <0.001$ ) were significantly associated with PE truancy (See Table 1).

**Table 1.** Chi-square analysis of the association between correlates and PE truancy among in-school adolescents in Benin, stratified by gender.

Variables		Male				Female				
		Truant N (%)	Not-Truant N (%)	Chi-Square ( $\chi^2$ )	<i>p</i> -Value	Truant N (%)	Not-Truant N (%)	Chi-Square ( $\chi^2$ )	<i>p</i> -Value	
<b>Demographics</b>										
1.	Age (years)	13–15	19 (9.9)	139 (11.9)	0.670	0.413	28 (14.6)	166 (17.5)	0.969	0.325
		16–18	173 (90.1)	1025 (88.1)			164 (85.4)	782 (82.5)		
2.	Grade	3rd–6th	94 (49.0)	688 (59.1)	6.953	0.008	115 (59.9)	649 (68.5)	5.298	0.021
		Terminal–2nd	98 (51.0)	476 (40.9)			77 (40.1)	299 (31.5)		
<b>Biological/Physical factors</b>										
3.	Hunger	Yes	25 (13.0)	233 (20.0)	5.236	0.022	39 (20.3)	131 (13.8)	5.307	0.022
		No	167 (87.0)	931 (80.0)			153 (79.7)	817 (86.2)		
4.	Alcohol use	Yes	88 (45.8)	529 (45.4)	0.010	0.921	63 (32.8)	400 (42.2)	5.826	0.016
		No	104 (54.2)	635 (54.6)			129 (67.2)	548 (57.8)		
5.	Marijuana use	Yes	108 (60.0)	633 (58.9)	0.072	0.789	77 (44.8)	307 (34.5)	6.644	0.010
		No	72 (40.0)	441 (41.1)			95 (55.2)	584 (65.5)		
6.	Sedentary lifestyle	Yes	44 (22.9)	268 (23.0)	0.001	0.974	31 (16.1)	231 (24.4)	6.097	0.014
		No	148 (77.1)	896 (77.0)			161 (83.9)	717 (75.6)		
<b>Psychological factors</b>										
7.	Suicidal ideation	Yes	35 (18.2)	134 (11.5)	6.816	0.009	36 (18.8)	165 (17.4)	0.199	0.656
		No	157 (81.8)	1030 (88.5)			156 (81.3)	783 (82.6)		
8.	Loneliness	Yes	36 (18.8)	156 (13.4)	3.878	0.049	27 (14.1)	143 (15.1)	0.131	0.717
		No	156 (81.3)	1008 (86.6)			165 (85.9)	805 (84.9)		
9.	Worry	Yes	48 (25.0)	256 (22.0)	0.857	0.355	38 (19.8)	189 (19.9)	0.002	0.963
		No	144 (75.0)	908 (78.0)			154 (80.2)	759 (80.1)		

Table 1. Cont.

Variables			Male				Female			
			Truant N (%)	Not-Truant N (%)	Chi-Square ( $\chi^2$ )	<i>p</i> -Value	Truant N (%)	Not-Truant N (%)	Chi-Square ( $\chi^2$ )	<i>p</i> -Value
<b>Social factors</b>										
10.	Truancy from school	Yes	78 (40.6)	327 (28.1)	12.358	0.000	47 (24.5)	123 (13.0)	16.654	0.000
		No	114 (59.4)	837 (71.9)			145 (75.5)	825 (87.0)		
11.	Physical attacks	Yes	47 (24.5)	272 (23.4)	0.113	0.737	23 (12.0)	181 (19.1)	5.499	0.019
		No	145 (73.5)	892 (76.6)			169 (88.0)	767 (80.9)		
12.	Parental supervision of homework	Yes	51 (26.6)	408 (35.1)	5.304	0.021	54 (28.1)	392 (41.4)	11.725	0.001
		No	141 (73.4)	756 (64.9)			138 (71.9)	556 (58.6)		
13.	Parental understanding and support	Yes	53 (27.6)	378 (32.5)	1.803	0.179	44 (22.9)	345 (36.4)	12.898	0.000
		No	139 (72.4)	786 (67.5)			148 (77.1)	603 (63.6)		

3.3. Multivariable Binary Logistic Regression Analysis of Correlates Associated with PE Truancy among In-School Adolescents in Benin, Stratified by Gender

A multivariable logistic regression analysis was conducted to determine the magnitude of association between the correlates and PE truancy among the participants. The results revealed that males in 3rd–6th grade had 31% significantly reduced odds of being truant from PE class compared to males in terminal grade—2nd (aOR = 0.69, CI = 0.50–0.96). Males who experienced hunger had 49% significantly reduced odds of being truant from PE class compared to males who did not experience hunger (aOR = 0.51, CI = 0.32–0.81). Also, males who ideate suicide had 64% significantly increased odds of being truant from PE class compared to males who did not ideate suicide (aOR = 1.64, CI = 1.07–2.53). Again, males absent from school had 67% more odds of being truant from PE class than males not truant from school (aOR = 1.67, CI = 1.20–2.32) (See Table 2).

**Table 2.** Multivariable binary logistic regression analysis of correlates associated with PE truancy among in-school adolescents in Benin, stratified by gender.

Variables		Prevalence of PE Truancy				
		Males		Females		
		aOR (95% CI)	p-Value	aOR (95% CI)	p-Value	
<b>Demographics</b>						
1.	Age (years)	13–15	1.10 (0.64–1.89)	0.734	1.21 (0.75–1.94)	0.433
		16–18	1.00		1.00	
2.	Grade	3rd–6th	0.69 (0.50–0.96)	0.027	0.74 (0.52–1.04)	0.085
		Terminal—2nd	1.00		1.00	
<b>Biological/Physical factors</b>						
3.	Hunger	Yes	0.51 (0.32–0.81)	0.004	1.75 (1.15–2.65)	0.009
		No	1.00		1.00	
4.	Alcohol use	Yes	0.92 (0.67–1.26)	0.592	0.62 (0.44–0.87)	0.006
		No	1.00		1.00	
5.	Marijuana use	Yes	0.68 (0.214–2.15)	0.510	1.46 (0.30–7.22)	0.643
		No	1.00		1.00	
6.	Sedentary lifestyle	Yes	0.93 (0.64–1.35)	0.702	0.62 (0.40–0.96)	0.030
		No	1.00		1.00	
<b>Psychological factors</b>						
7.	Suicidal ideation	Yes	1.64 (1.07–2.53)	0.024	1.13 (0.74–1.73)	0.563
		No	1.00		1.00	
8.	Loneliness	Yes	1.52 (0.99–2.34)	0.056	0.87 (0.54–1.39)	0.547
		No	1.00		1.00	
9.	Worry	Yes	1.06 (0.72–1.55)	0.771	0.97 (0.64–1.46)	0.864
		No	1.00		1.00	

Table 2. Cont.

Variables		Prevalence of PE Truancy				
		Males		Females		
		aOR (95% CI)	<i>p</i> -Value	aOR (95% CI)	<i>p</i> -Value	
<b>Social factors</b>						
10.	Truancy from school	Yes	1.67 (1.20–2.32)	0.002	2.44 (1.63–3.65)	0.000
		No	1.00		1.00	
11.	Physical attacks	Yes	1.03 (0.71–1.49)	0.884	0.53 (0.33–0.87)	0.011
		No	1.00		1.00	
12.	Parental supervision of homework	Yes	0.73 (0.51–1.06)	0.094	0.63 (0.44–0.91)	0.014
		No	1.00		1.00	
13.	Parental understanding and support	Yes	0.90 (0.63–1.29)	0.567	0.61 (0.41–0.91)	0.015
		No	1.00		1.00	

Note: 1.00—references category; aOR = adjusted odds ratio; CI = confidence interval; Hosmer and Lemeshow test (goodness of fit) (males),  $\chi^2 (8) = 12.318$ ,  $p = 0.138$ ; (females),  $\chi^2 (8) = 3.220$ .

Regarding female in-school adolescents, those who experienced hunger had 75% increased odds of being truant from PE class compared to those who did not experience hunger (aOR = 1.75, CI = 1.15–2.65). Also, the odds of being truant from PE class was 38% significantly lower among females who drank alcohol compared to those who did not drink alcohol (aOR = 0.62, CI = 0.44–0.87). Also, the odds of PE truancy were 38% significantly lower among females who experienced sedentary lifestyles than those who did not experience sedentary lifestyles (aOR = 0.62, CI = 0.40–0.96).

Females who were truant from school also had 2.44 higher odds of being truant from PE class compared to those who were not truant from school (aOR = 2.44, CI = 1.63–3.65). The results further showed that females who were physically attacked had 47% significantly lower odds of being truant from PE class compared to those who were physically attacked (aOR = 0.53, CI = 0.33–0.87). Also, females whose parents supervised their homework had 37% significantly reduced odds of being absent from PE class compared to those whose parents did not supervise their homework (aOR = 0.63, CI = 0.44–0.91). Having understanding and supportive parents was associated with 39% significantly reduced odds of PE truancy compared to not having supportive parents (See Table 2).

#### 4. Discussion

Truancy in PE lessons among adolescents in school poses significant health and social consequences on the individual and society (Baiden et al. 2019; Yoep et al. 2016). Given that regular engagement in PE has higher long-term public health benefits (Mieziene et al. 2021), the study examined the biopsychosocial correlates of school truancy in PE classes among Beninese adolescents.

The study found an overall prevalence rate of PE truancy to be 15.4%, with females and males reporting a PE truancy prevalence of 16.8% and 14.2%, respectively. Consistent with previous studies (Nettlefold et al. 2011), females who participated in this study were more truant than the males. Several factors may explain this observed outcome. For instance, in most Benin communities, boys may face more social pressure to attend school consistently than girls do because of cultural norms and traditional gender roles that prioritise boys' education over girls. Also, girls may encounter obstacles like housework or early marriage, which can cause them to miss school more frequently. In addition, problems such as limited access

to lavatories during their periods of menstruation or worries about safety on the way to school may disproportionately affect girls and discourage regular attendance. Multifaceted interventions are needed to address these disparities, including targeted support, policy reforms, and community engagement to ensure that all children, regardless of gender, have equitable access to education in Benin.

Importantly, attendance at PE class has been linked with factors like enjoyment, knowledge, level of motivation, attitudes, and perceptions about PE engagement (Mieziene et al. 2021). For example, using a Lithuanian sample of 1285 adolescents from ages 14 to 18 years, Mieziene et al. (2021) found social participation and sedentariness to be the main correlates of truancy in the PE class, while factors like perceptions about the usefulness of PE and rating oneself to have better health were factors that prevented truancy in PE. This implies that creating awareness to promote a positive attitude and perception about PE would facilitate PE attendance, especially among females. Additionally, the current finding could be linked with masculine-feminist orientations common to specific cultures within Sub-Saharan Africa. For cultures, it is unacceptable for females to participate in PE classes because the attire worn during PE lessons reveals their bodies. Mieziene et al. (2021) indicate that body image perceptions can also influence PE attendance among adolescents, especially females. Similarly, Maynard et al. (2017) found females to be generally more truant than males, even though the authors did not base truancy on intentionally skipping PE classes but rather on skipping general school attendance. However, some authors have reported contrary findings that males are more truant than females (Muula et al. 2012; Onyeaka et al. 2020). For example, Onyeaka et al. (2020) found males reporting higher truancy rates than females in Ghana, Liberia, and Benin.

Other scholars (e.g., Vaughn et al. 2013) identified no differences in gender for adolescents who reported being moderately or highly truant. These inconsistencies could be linked with the operational definition of truancy by the authors. For instance, Muula et al. (2012) and Onyeaka et al. (2020) operationally defined truancy based on the students' general attendance at school and not specific attendance at a particular subject-based class. However, the current study operationalised truancy as students deliberately absenting themselves from PE classes without tangible reasons. Other factors that may also explain the inconsistencies in findings could be the different time frames within which data was collected, age and sex variations, cultural differences, and other contextual variations.

Hunger and truancy were identified to be associated with truancy in PE among both sexes in Benin. For males, the likelihood of being absent from PE due to hunger was 0.508 times less than not being hungry. However, hunger was a strong predictor of PE absenteeism among females in the present study. The current findings confirm that of previous studies (Muula et al. 2012; Pengpid and Peltzer 2017; Seidu 2019; Seidu et al. 2019; Siziya et al. 2007), except that the authors did not refer to truancy as absenting oneself from PE classes. Males are generally considered more physically active than females (Mieziene et al. 2021), so the possibility of attending PE classes even when hungry is high. Students can be hungry not because they do not have food or money to buy food but because they decide to eat when they want. On the other hand, hunger can arise because the individual may not have food or any pocket money for food. Some authors (Maynard et al. 2017; Muula et al. 2012; Pengpid and Peltzer 2017) found that adolescents who are socio-economically poorer and hungrier are more likely to be absent from school than their counterparts from a higher socioeconomic status. Therefore, females may not come to school or attend PE classes because they are hungry. Such students could skip school or PE classes to engage in menial jobs to fend for themselves (Seidu 2019; Siziya et al. 2007). Therefore, it is unsurprising to find hungrier females being absent from school and PE classes.

The results on truancy being a risk factor for PE class attendance were consistent among both sexes since absence from school automatically meant that the student would be absent from all classes, including PE. This finding is consistent with that of Mieziene et al. (2021), who found that students who skipped school also missed PE classes. This

situation may call for family/parental support as families have been found to be protective of adolescents' truancy in school (Onyeaka et al. 2020).

Truancy in PE classes was linked with school grades for males but not for females. Males in higher school grades were less likely to be truant in PE class compared to males in lower grades. This finding is similar to that of Muula et al. (2012) and Siziya et al. (2007), who found that students in lower grades were more likely to be truant than those in higher grades. However, contradictory results were found by Seidu et al. (2019) and Shah et al. (2012), who found truancy to be more rampant among higher graders than lower graders in school. Other previous authors also found higher truancy rates among higher graders than lower graders and further observed that older adolescents are more likely to be involved in wrongful and externalising behaviours compared to younger adolescents (Maynard et al. 2017; Onyeaka et al. 2020; Pengpid and Peltzer 2017; Vaughn et al. 2013). Even though Muula et al. (2012) and Siziya et al. (2007) explained that lower graders were not under pressure to prepare for examinations compared to higher graders, male adolescents in higher grades who are most likely to be older than those in lower grades might have been well informed about the benefits of engaging in PE and have a higher positive perception about PE and its contribution to their general health and well-being (Mieziene et al. 2021). Conversely, those in lower grades may not have a better perception and knowledge about the health, social, and psychological benefits of engaging regularly in PE classes.

Similar to the results of Epstein et al. (2020), having suicidal thoughts was associated with truancy among male in-school adolescents but not for females. For adolescent males, it appears attending PE classes may serve as a protective mechanism for improved daily life (i.e., perceived life satisfaction) compared with life dissatisfaction, which has been linked with suicidal thoughts, plans, and attempts. For males, engaging in endurance, stretching, and strength exercises during PE classes serves as a proxy for overall mental health (Valois et al. 2004). Although the present study did not find any relationship between suicide ideation and PE truancy among females, Hawton et al. (2012) observed that suicide behaviours are more common among females than in males, but the authors confirmed that full suicide is more common among males. According to Brunner et al. (2014), for example, truancy can intensify the risk of self-harm and suicidal behaviours among adolescents in schools (Brunner et al. 2014). Altogether, the likelihood of adolescents skipping PE classes due to suicidal thoughts can be linked with other risky behaviours like alcohol consumption, having been physically attacked or abused by teachers and or peers, hunger and poor parental love and support, and generally supervising these young adults.

Using alcohol was significantly linked with PE truancy among in-school adolescents in the present study. This finding is consistent with what was previously reported (Asante et al. 2021; Maynard et al. 2017). This study also showed that students who use alcohol are more likely to be truant (Holtes et al. 2015; Muula et al. 2012; Pengpid and Peltzer 2017; Seidu et al. 2019; Yoep et al. 2016). According to Best et al. (2006), excessive use of alcohol among adolescents is associated with regular absenteeism in school. Possibly, adolescents who do not receive proper monitoring from school authorities and at home and deliberately stay out of school could easily be influenced negatively by their deviant peers and/or try to experiment with drinking alcohol (Muula et al. 2012). Alternatively, the likelihood of alcohol use influencing PE truancy among in-school adolescents in Benin could be that the drinkers may not have the ability to control themselves and may have difficulty explaining their own deeds (Seidu et al. 2019). Consistent with studies conducted previously (Maynard et al. 2017; Pengpid and Peltzer 2017; Shah et al. 2012), this study found having been physically attacked to relate to PE truancy among female in-school adolescents but not males in Benin. Previous studies (Pengpid and Peltzer 2017; Seidu 2019) have also reported that in-school adolescents who report being physically attacked are more likely to be absent from school to avoid further attacks or have been injured and are seeking medical assistance (Seidu et al. 2019). Perhaps females who stayed away from the PE classes do so to protect themselves from the risks often associated with practical PE lessons (Mieziene et al. 2021). This result may also signal that school authorities should reinforce

bullying prevention and fighting among in-school adolescents in Benin by ensuring stricter rules and regulations.

Parental supervision, understanding, and support have been found to be protective factors that could reduce PE truancy among adolescents. Similar to previous studies (Muula et al. 2012; Pengpid and Peltzer 2017; Seidu 2019; Seidu et al. 2019; Onyeaka et al. 2020), adolescents who declared that their guardians and or parents inspected their homework were less likely to be truant in school. For example, Pengpid and Peltzer (2017) observed that high parental supervision reduced the odds of truancy. Several researchers have highlighted the positive impact of social support from the family as facilitative to the youth's academic, emotional, physical, and psychological well-being. Hence, parents and significant others who monitor and supervise their wards are able to keep them at school, protect them from delinquent behaviours, and keep them regularly in PE classes (Mieziene et al. 2021). There are various possible explanations for the protective effect that parental understanding, support, and supervision could have on lowering PE truancy in Benin. First and foremost, parents who actively participate in their children's education help them develop a sense of accountability and responsibility. Children who know their parents are committed to their academic goals may feel more obligated to attend classes. Second, understanding and encouraging parenting fosters a conversation about difficulties teenagers may have in the classroom, enabling parents to provide support and advice in resolving issues that might otherwise result in PE truancy. In addition, parental supervision can effectively oversee and enforce attendance, serving as a disincentive to tardiness.

## 5. Strength and Limitations

Using a nationally representative sample of in-school adolescents in Benin guarantees generalisation of findings to this target population in the country and provides useful information to guide planned intervention and future studies. However, absenteeism in PE classes may have been under-reported or over-reported by students; hence, the results of this study should be interpreted carefully. Additionally, the design was cross-sectional, so causal relationships between the chosen variables could not be ascertained. Thus, it is impossible to conclude that the explanatory variables are the direct causes of PE truancy among these students. Further, many of the indicators were measured with just single items, and such limitations cannot be overlooked. Further studies could consider assessing a wider variety of parental or guardian supervision and support.

## 6. Practical Implications

The study findings have practical implications for adolescents' health and well-being through regular participation in PE classes using appropriate interventions that aim to educate and motivate students to engage in PE. The reported risk factors for PE skipping among the adolescents in this study highlight the urgent need of all stakeholders involved (i.e., parents, PE teachers, educational managers, school counsellors, and psychologists) to provide for the PE needs of students. Schools and communities can implement a number of focused strategies to improve attendance in PE classes and reduce truancy. First, encouraging a happy and welcoming PE classroom through interesting exercises and encouraging teacher–student interactions can increase student enthusiasm and attendance.

Second, adding enjoyable and culturally appropriate physical activities such as playing “borborbor” drums and singing to PE classes can boost students' engagement and interest. Thirdly, truancy can be discouraged by implementing precise attendance regulations, such as marking registers that are consistently enforced and have consequences for non-compliance. To further encourage attendance, school authorities may need to consider offering rewards, recognition, or extracurricular activities for students who actively participate in PE classes (Carrasco-Uribarren et al. 2023; Dudley et al. 2022; Hollis et al. 2017). Parental support and supervision help in-school adolescents manage school pressures (e.g., truancy, delinquent behaviours—alcohol use, physical fights/attacks) to improve academic performance and mental health. Keeping a close relationship with significant

others, including parents, teachers, and family, is associated with higher engagement in behaviours that minimise absenteeism in schools.

A classroom setting that provides adequate and appropriate behavioural and emotional support for learners can alleviate absenteeism. Therefore, interventions should focus on making the learning environment gender-sensitive and conducive for all. Moreover, ensuring strict enforcement and adherence to school rules and regulations and zero tolerance for deviant behaviours like physical attacks and bullying among the students by school authorities would be helpful. Future research could investigate truancy-related behaviours among Beninese school adolescents using longitudinal designs to track and identify the riskiest and protective factors specific to PE truancy.

## 7. Conclusions

Female adolescents in Benin were more truant in PE class than males. The overall prevalence of PE truancy within the past 30 days among in-school adolescents in Benin was 15.4%. For males and females, being hungry and truant was related to truancy in PE class. Lower grade levels and suicidal thoughts were specific to males only, while current alcohol use, being physically attacked, and being sedentary exposed female adolescents to truant behaviour. In contrast, parental supervision of homework and parental understanding and support were protective factors against PE class truancy for females. Therefore, there is an urgent need to design school-based practical interventions to minimise absenteeism in PE classes in Benin. Dealing with the risk factors and promoting protective factors would eventually reduce truancy in PE classes and promote in-school adolescents' overall mental health.

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**Data Availability Statement:** The original data presented in the study are openly available in WHO NCD microdata repository: <https://extranet.who.int/ncdsmicrodata/index.php/catalog/627/study-description> (accessed on 5 February 2024).

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