



## **SELECT FACTORS AND THE LEVEL OF ENGAGEMENT OF SENIOR HIGH SCHOOL STUDENTS IN PHYSICAL ACTIVITY: BASIS FOR A SCHOOL-BASED PHYSICAL ACTIVITY PLAN**

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### **ABSTRACT**

Physical activity is essential to adolescents' physical, psychological, and social well-being; however, participation among senior high school students remains inconsistent. This study determined the factors influencing physical activity engagement among Grade 11 and Grade 12 students of Holy Cross College during the School Year 2023–2024. Specifically, it examined the influence of personal motivation, family support, school support, and perceived health, and identified differences in engagement when grouped according to sex, grade level, and socioeconomic status. A descriptive–correlational research design was utilized involving 630 students selected through an appropriate sampling method. Data were collected using a structured survey questionnaire and analyzed using descriptive statistics and nonparametric tests, namely Mann–Whitney U, Kruskal–Wallis H, and Spearman rank-order correlation. Results revealed that personal motivation ( $r_s = .282$ ,  $p < .001$ ), family support ( $r_s = .214$ ,  $p < .001$ ), and perceived health ( $r_s = .204$ ,  $p < .001$ ) had significant positive but weak relationships with physical activity engagement. In contrast, school support ( $r_s = .048$ ,  $p = .231$ ) showed no significant relationship. Significant differences in engagement were found when grouped according to sex ( $H = 7.98$ ,  $p = .020$ ) and socioeconomic status ( $H = 20.80$ ,  $p = .001$ ), while no significant difference was observed in terms of grade level ( $U = 46418.50$ ,  $p = .760$ ). The findings indicate that personal and family-related factors exert greater influence on physical activity engagement than institutional support. A school-based physical activity plan emphasizing motivation enhancement, family involvement, and health promotion is proposed for implementation.

**Keywords:** *physical activity, adolescents, personal motivation, family support, school support, perceived health*

## INTRODUCTION

Physical activity among senior high school students remains a critical concern in contemporary health and education discourse. Physical inactivity is recognized as a major modifiable risk factor for noncommunicable diseases such as cardiovascular diseases, type 2 diabetes, obesity, and certain cancers worldwide (World Health Organization, 2022). The World Health Organization (2022) recommends that adolescents engage in at least 60 minutes of moderate-to-vigorous physical activity daily to promote physical health, cognitive functioning, and psychological well-being. However, global surveillance data show that a large proportion of adolescents fail to meet these recommendations, reflecting a persistent global public health challenge (Guthold et al., 2020).

Post-pandemic shifts have further intensified sedentary behaviors among adolescents, largely driven by increased screen time, online learning modalities, and digital entertainment consumption (Nagata et al., 2020; Xiang et al., 2021). These behavioral changes are associated with negative effects on emotional regulation, academic performance, and long-term lifestyle patterns (Chen et al., 2020). Similar trends are observed globally, where urbanization, academic pressure, and digital dependency contribute to declining physical activity levels among youth (World Health Organization, 2022).

In the Philippine context, insufficient physical activity among adolescents remains a continuing concern. National data indicate that many Filipino adolescents do not meet recommended physical activity levels (Department of Health, 2019; World Health Organization, 2022). Contributing factors include socioeconomic disparities, limited access to safe recreational spaces, academic workload, and varying levels of family and school support (Department of Health, 2019). Although schools implement physical education programs and sports activities, participation remains inconsistent across institutions (Department of Education, 2013), highlighting the need for context-specific investigations.

Adolescence is a critical developmental stage characterized by rapid physical, cognitive, and psychosocial changes (Sawyer et al., 2018; Patton et al., 2024). For senior high school students, increasing academic demands and social pressures may further limit opportunities for physical activity engagement (Eccles & Roeser, 2011; UNESCO, 2023). Despite these challenges, regular physical activity is associated with improved academic outcomes, including enhanced concentration, memory, and school performance (Lubans et al., 2022; Barbosa et al., 2023). Furthermore, physical activity supports psychological well-being by reducing stress, anxiety, and depressive symptoms (Rodriguez-Ayllon et al., 2019; Biddle et al., 2023). It also promotes social development by enhancing teamwork, leadership, discipline, and interpersonal skills (Gould & Carson, 2021).

Despite these benefits, adolescents' participation in physical activity remains inconsistent due to multiple barriers, including time constraints, low self-efficacy, limited access to facilities, lack of social support, and fear of injury (Owen et al., 2022; Mello et al., 2023). Recent evidence highlights that these factors interact across personal, interpersonal, and environmental levels, indicating that physical activity behavior is shaped by multi-level determinants rather than program availability alone (McLeroy et al., 1988; Hagger & Chatzisarantis, 2021).

Schools serve as key environments for promoting active lifestyles through physical education, sports programs, and wellness initiatives (UNESCO, 2023; World Health Organization, 2022). However, student participation is also influenced by personal motivation, family support, perceived health, and school environment (Hagger & Chatzisarantis, 2021; Owen et al., 2022). These factors collectively shape adolescents' engagement in physical activity within the school setting.

At Holy Cross College Senior High School Department, varying levels of participation in physical activities have been observed. While some students actively engage in sports and recreational activities, others demonstrate low involvement and prolonged sedentary behavior despite existing school programs. This variation highlights the need to examine the underlying factors influencing engagement within the institutional context.

Although numerous international and national studies have examined adolescent physical activity, there remains a lack of institution-specific research that simultaneously investigates personal, familial, school-related, and health-related determinants in a localized Philippine setting. Without empirical evidence grounded in the actual school context, the development of targeted interventions remains limited.

In response to this gap, the present study aims to determine the factors influencing physical activity engagement among senior high school students of Holy Cross College during School Year 2023–2024. Specifically, it examines the influence of personal motivation, family support, school support, and perceived health on students' engagement in physical activity. The findings are expected to provide evidence-based insights that may serve as a basis for the development of a school-based physical activity program aimed at promoting sustained engagement and improving overall student well-being.

## Research Questions

This study investigated the factors affecting the engagement of Senior High School students in physical activity at Holy Cross College during the School Year 2023–2024.

Specifically, it sought to answer the following research questions:

1. How may the profile of the respondents be described in terms of:
  - 1.1 sex;

- 1.2 grade level; and
- 1.3 socioeconomic status?
2. How may the selected factors affecting students' engagement in physical activity be described in terms of:
  - 2.1 personal motivation;
  - 2.2 family support;
  - 2.3 school support; and
  - 2.4 perceived health?
3. How may the level of students' engagement in physical activity be described in terms of:
  - 3.1 job-related activities;
  - 3.2 transportation activities;
  - 3.3 household activities;
  - 3.4 recreational activities; and
  - 3.5 sitting time?
4. Is there a significant difference in the level of students' engagement in physical activity when grouped according to their profile variables?
5. Is there a significant relationship between the identified selected factors and the level of students' engagement in physical activity?
6. Based on the findings of the study, what school-based physical activity plan may be developed?

## METHODOLOGY

This study utilized a descriptive-correlational research design to examine the relationship between selected determinants and the level of physical activity engagement among senior high school students in a private educational institution in Pampanga during the School Year 2023–2024. The study focused on identifying the respondents' profile and level of physical activity engagement, as well as determining the significant relationship between personal motivation, family support, school support, perceived health, and physical activity engagement. The respondents of the study were Grade 11 and Grade 12 students officially enrolled in the Senior High School Department, with a total population of 630 students. A representative sample was determined through stratified random sampling to ensure proportional representation of both grade levels. Data were collected using a structured survey questionnaire composed of three parts: respondents' profile, selected determinants of physical activity engagement, and level of physical activity engagement. The instrument employed a five-point Likert scale to measure responses. Content validation was conducted by experts in Physical Education and research to ensure the clarity, relevance, and appropriateness of the items. Prior to the actual data collection, the instrument was pilot-tested to establish reliability and consistency. Data gathering was conducted after securing permission from the school administration and obtaining informed consent from the respondents. The questionnaires were distributed personally and retrieved upon completion. Quantitative data were analyzed using descriptive and inferential statistics. Frequency, percentage, weighted mean, and standard deviation were used to describe the respondents' profile and level of

engagement. Mann–Whitney U test and Kruskal–Wallis H test were used to determine differences in physical activity engagement when grouped according to profile variables. Spearman rank-order correlation was employed to test the relationship between selected determinants and physical activity engagement. All statistical analyses were tested at a 0.05 level of significance.

## RESULTS

### Part I. Profile of the Students

**Table 1.**  
*Profile of the Students*

Profile	Frequency	Percentage
Sex		
Female	365	57.94
Male	251	39.84
Prefer not to say	14	2.22
Grade Level		
Grade 11	386	61.27
Grade 12	244	38.73
Socioeconomic Status		
Less than ₱ 9,520	150	23.81
₱ 9,521 to ₱ 19,040	189	30.00
₱ 19,041 to ₱ 38,080	156	24.76
₱ 38,081 to ₱ 66,640	77	12.22
₱ 66,641 to ₱ 114,240	44	6.98
₱ 114,241 to ₱ 190,400	9	1.43
more than ₱ 190,401	5	0.79
Total	<b>630</b>	<b>100.00</b>

### Part II. Influencing Factors on Physical Activities

**Table 2.**  
*Factors Affecting Engagement in Physical Activities*

Indicators	Mean	SD	DI
<b>Personal Motivation</b>			
1. I am intrinsically motivated to be physically active.	2.84	0.79	Agree
2. I have the capacity to be physically active.	2.97	0.79	Agree
3. I am proud of my appearance because I am physically active.	2.66	0.88	Agree
4. I have seen positive results from my previous physical activity engagement.	2.77	0.84	Agree

5. I am not too old to be physically active.	3.09	1.03	Agree
6. Physical activity engagement will help me achieve my fitness goal.	3.37	0.75	Strongly Agree
7. I enjoy being physically active.	3.12	0.83	Agree
8. I need to be physically active to be fit.	3.21	0.78	Agree
<b>Family Support</b>	<b>3.00</b>	<b>0.57</b>	<b>Moderate</b>
1. My family thinks physical Activity would be helpful to improve Health.	3.36	0.72	Strongly Agree
2. My family members encourage and support my efforts to be physically active.	3.11	0.74	Agree
3. My family members are supportive of my efforts to be physically active.	3.08	0.75	Agree
4. My family assists me in being physically active.	3.10	0.74	Agree
5. My family's culture, beliefs, or morals place physical Activity as a priority.	2.73	0.83	Agree
6. My friends are physically active.	2.71	0.81	Agree
7. My friends talk about being physically active.	2.84	0.80	Agree
<b>Health Related Factors</b>	<b>2.99</b>	<b>0.58</b>	<b>Moderate</b>
1. I never tired or fatigued during physical Activity.	2.28	0.89	Disagree
2. I was never in pain when doing physical activities.	2.25	0.87	Disagree
3. Physicality does not require too much work/effort/energy.	2.08	0.93	Disagree
4. I have a goal to become physically active.	3.15	0.79	Agree
5. I do not feel physical discomfort while being physically active	2.58	0.84	Agree
6. I am cautious not to get injured while being physically active.	2.99	0.84	Agree
7. I am a cheerful person.	3.12	0.87	Agree
<b>School Support</b>	<b>2.64</b>	<b>0.52</b>	<b>Moderate</b>
1. My teacher(s) recognize the students' efforts to participate in physical activities.	3.24	0.72	Agree

2. My teacher(s) are influencing students' interest and participation in physical activities.	3.27	0.70	Strongly Agree
3. School equipment and facilities are sufficient.	3.00	0.76	Agree
4. Schools encourage the students to participate in physical activities.	3.27	0.69	Strongly Agree
5. The school organizes and promotes various sports events and competitions to encourage student participation.	3.40	0.69	Strongly Agree
6. Teachers incorporate physical Activity into classroom routines, such as short breaks or movement-based lessons.	3.06	0.74	Agree
7. The school provides educational programs that emphasize the importance of a healthy and active lifestyle.	3.26	0.70	Strongly Agree
<b>OVERALL</b>	<b>2.96</b>	<b>0.43</b>	<b>Moderate</b>

**Legend:** 3.25–4.00 Strongly Agree; 2.50–3.24 Agree; 1.75–2.49 Disagree; 1.00–1.74 Strongly Disagree  
3.25–4.00 High; 2.50–3.24 Moderate; 1.75–2.49 Low; 1.00–1.74 Very Low

### Part III. Intensity of Physical Activity

**Table 3**  
*Relationship between the Level of Engagement in Physical Activity*

Indicators		Low	Moderate	High	Ave. MET	SD	Descriptive Interpretation
Total physical activity MET minutes per week	<i>f</i>	166	434	30	396.03	1.15	<b>Moderate</b>
	<i>%</i>	26.30	68.90	4.80			

**Legend:** ≥1500 MET min/week (High); ≥150 MET min/week (Moderate); <150 MET min/week (Low)

**Table 4.**  
*Level of Engagement in Physical Activities vis-a-vis Sex*

Variables	Group	Mean	Mean Rank	H	Sig	Decision on H <sub>0</sub>	Interpretation
	Female	349.73	292.23		.	Reject	

	Male	468.84	351.10				
<b>Level of Engagement</b>	Prefer not to say	297.64	283.79	7.9	0.0		Signifi cant

At the .05 level of Sig.

**Table 5.**  
*Level of Engagement in Physical Activities vis-a-vis Grade Level*

Variables	Group	Mean	Mean Rank	U	Sig.	Decision on H <sub>o</sub>	Interpretation
<b>Level of Engagement</b>	Grade 11	400.40	317.24	46418.5	0.76	Failed to Reject	Not Significant
	Grade 12	389.12	312.74	0			

the .05 level of Sig.

**Table 6.**  
*Level of Engagement in Physical Activities vis-a-vis Economic Status*

Variables	Group	Mean	Mean Rank	H	Sig.	Decision on H <sub>o</sub>	Interpretation
<b>Level of Engagement</b>	Less than ₱ 9,520	350.80	293.26				
	₱ 9,521 to ₱ 19,040	344.94	305.73				
	₱ 19,041 to ₱ 38,080	346.67	303.23				
	₱ 38,081 to ₱ 66,640	619.96	364.10	20.80	0.001	Reject	Significant
	₱ 66,641 to ₱ 114,240	538.41	401.52				
	₱ 114,241 to ₱ 190,400	266.67	239.11				
	more than ₱ 190,401	755.40	366.90				

At the .05 level of Sig.

**Table 7.**  
*Relationship between the Level of Engagement and Identified Factors*

Variables	$r_s$	Sig.	Decision on $H_0$	Interpretation
Personal Motivation → MET min/week	.282**	<.001	Reject	Significant
Family Support → MET min/week	.214**	<.001	Reject	Significant
Health → MET min/week	.204**	<.001	Reject	Significant
School Support → MET min/week	.048	.231	Failed to Reject	Not Significant

at the .05 level of Sig.

## DISCUSSION

### Quantitative Results

#### Part 1. Profile of the Students

**Table 1** presents the demographic profile of the respondents in terms of sex, grade level, and socioeconomic status. The results show that most respondents were female (57.94%), followed by male (39.84%), while a small proportion preferred not to disclose their sex (2.22%). This distribution reflects general enrollment trends in the Senior High School population, where female students are slightly more predominant (Department of Education [DepEd], 2021). Previous studies suggest that sex may influence physical activity participation, with males generally exhibiting higher engagement levels.

In terms of grade level, most respondents were Grade 11 students (61.27%), while Grade 12 students comprised 38.73%. Differences in academic workload and transitional demands, particularly in Grade 12, may influence participation in physical activity.

Regarding socioeconomic status, most respondents belong to low- to lower-middle-income households, consistent with national data from the Philippine Statistics Authority (PSA, 2023). Socioeconomic status is an important determinant of physical activity engagement as it affects access to recreational facilities, equipment, and structured opportunities.

## Part II. Influencing Factors on Physical Activities

**Table 2** presents the selected determinants of physical activity engagement, namely personal motivation, family support, perceived health, and school support.

Personal motivation obtained a mean of 3.00, indicating moderate agreement. The findings suggest that students are primarily driven by goal-oriented and health-related reasons rather than appearance-based motivation. This supports Self-Determination Theory, which emphasizes intrinsic motivation as a key factor in sustaining behavior.

Family support also obtained a moderate mean ( $M = 2.99$ ), indicating that while families recognize the importance of physical activity, reinforcement is not consistently strong across respondents. Peer influence also appears variable, suggesting inconsistent social modeling.

Perceived health obtained a moderate mean ( $M = 2.99$ ), indicating mixed perceptions of physical capability. Although students show positive intentions toward physical activity, fatigue and physical discomfort may serve as limiting factors.

School support obtained a relatively higher mean ( $M = 3.21$ ), suggesting that institutional efforts such as sports programs, teacher encouragement, and school-based initiatives are present. However, limitations in facilities and consistency of implementation may still exist.

Overall, the results indicate that physical activity engagement is influenced by a combination of psychological, interpersonal, and institutional factors, with personal motivation and perceived health playing central roles.

**Table 3** shows that most respondents (68.90%) fall under moderate physical activity engagement, while 26.30% are classified as low and only 4.80% as high. The mean MET score ( $M = 396.03$ ) indicates a moderate level of physical activity engagement.

These findings suggest that although students are not inactive, their engagement is not optimal. Much of their activity is derived from non-recreational domains such as transportation and household activities rather than structured exercise. Sedentary behavior also remains a concern, which may negatively affect long-term health outcomes.

**Table 4** shows a significant difference in physical activity engagement when grouped according to sex ( $H = 7.98$ ,  $p = .020$ ). Male students demonstrated higher engagement compared to female students. This aligns with global findings indicating higher physical activity participation among males due to sociocultural expectations, perceived competence, and sports participation patterns (World Health Organization, 2022).

**Table 5** reveals no significant difference in physical activity engagement when grouped according to grade level ( $U = 46,418.50$ ,  $p = .760$ ). This indicates that Grade 11 and Grade 12 students exhibit similar levels of physical activity engagement, suggesting that academic level does not significantly influence participation behavior.

**Table 6** shows a significant difference in physical activity engagement across socioeconomic status groups ( $H = 20.80$ ,  $p = .001$ ). Students from higher-income households tend to demonstrate higher engagement levels, suggesting that financial capacity influences access to physical activity opportunities and resources.

**Table 7** presents the relationship between selected determinants and physical activity engagement. Results show that personal motivation ( $r_s = .282$ ,  $p < .001$ ), family support ( $r_s = .214$ ,  $p < .001$ ), and perceived health ( $r_s = .204$ ,  $p < .001$ ) have significant but weak positive relationships with physical activity engagement. This indicates that higher motivation, stronger family support, and better perceived health are associated with increased engagement.

Among these, personal motivation shows the strongest relationship, supporting Self-Determination Theory, which emphasizes intrinsic motivation as a key driver of sustained behavior. Family support contributes through encouragement and social reinforcement, while perceived health influences participation but to a lesser extent.

In contrast, school support was not significantly related to physical activity engagement ( $r_s = .048$ ,  $p = .231$ ), suggesting that institutional provisions alone may not directly translate into actual participation and may function more as enabling conditions rather than direct behavioral determinants.

Overall, the findings indicate that physical activity engagement is primarily influenced by personal and interpersonal factors rather than institutional support alone.

## Conclusions

The study concludes that personal motivation plays a significant role in influencing students' engagement in physical activity. Students who are goal-oriented and intrinsically motivated are more likely to participate consistently in physical activities, highlighting the importance of internal drives in sustaining active behavior. Family support also emerged as an important contributing factor. Encouragement, modeling, and logistical assistance from family members positively influence students' participation, indicating that interpersonal reinforcement is essential in promoting physical activity engagement among senior high school students.

Perceived health was found to be a relevant predictor of engagement. Students who perceive themselves as physically fit and healthy tend to demonstrate higher levels of participation in physical activities, suggesting that self-perception of health influences behavioral involvement. Although school support is positively perceived, it does not significantly determine engagement levels on its own. This implies that institutional

programs and facilities are not sufficient unless accompanied by strong personal motivation and supportive social environments.

Significant differences in physical activity engagement were observed in terms of sex and socioeconomic status, with male students and those from higher-income households showing higher levels of engagement. This indicates the presence of demographic disparities in access to and participation in physical activity.

However, no significant difference was found when respondents were grouped according to grade level. This suggests that academic level alone does not significantly influence engagement, and that motivational and contextual factors are more influential determinants of physical activity behavior.

Overall, the findings support the framework of Self-Determination Theory, emphasizing that intrinsic motivation, along with social and environmental support systems, plays a crucial role in sustaining physical activity engagement among senior high school students.

## **Recommendations**

Based on the findings and conclusions of the study, the following recommendations are offered.

The school administration may adopt a comprehensive school-based physical activity program that promotes sustained student engagement. Policies should emphasize inclusivity, enjoyment, and the development of an active lifestyle rather than compliance-based participation. Programs should be designed to foster intrinsic motivation and active student involvement.

Physical education teachers are encouraged to implement student-centered and autonomy-supportive instructional strategies that enhance students' motivation, competence, and engagement. Activities such as goal-setting, self-monitoring, reflective assessment, and varied physical exercises tailored to students' interests and abilities may further improve participation.

Parents and guardians may be encouraged to strengthen their involvement by providing consistent encouragement, modeling active behavior, and promoting active routines at home. Family participation in physical activities may further reinforce students' engagement and motivation.

The school community may initiate health promotion programs such as wellness campaigns, fitness activities, sports festivals, and seminars on active living. These initiatives may improve students' awareness of the benefits of physical activity and enhance their perceived health.

Guidance counselors and school health personnel may collaborate with teachers in implementing wellness education, stress management programs, and health awareness activities to address psychological and health-related barriers that may affect participation in physical activities.

A monitoring and evaluation system may be established by the school to regularly assess students' physical activity levels and program effectiveness. This will help identify gaps and guide continuous improvement of physical activity initiatives.

Equity and access should be prioritized by providing inclusive and affordable opportunities for all students regardless of socioeconomic background. This may include shared equipment, diversified activity options, and partnerships with community organizations to support broader participation.

Future researchers are encouraged to explore additional variables influencing physical activity engagement such as academic workload, digital media usage, psychological well-being, and environmental factors. Longitudinal and intervention-based studies are also recommended to further examine behavioral changes over time.

The findings of this study support Self-Determination Theory, particularly the role of intrinsic motivation in sustaining behavioral engagement. The stronger influence of personal motivation compared to institutional support highlights the importance of autonomy, competence, and relatedness in fostering sustained physical activity participation. The results also align with Social Ecological Theory, emphasizing that physical activity behavior is shaped by the interaction of individual, interpersonal, and environmental factors.

The moderate level of physical activity engagement among students suggests that most do not fully meet recommended activity standards. This underscores the need for schools to shift from compliance-based approaches to motivation-driven and student-centered physical activity programs. Enhancing intrinsic motivation through goal-setting, reflective practices, and autonomy-supportive teaching strategies is strongly recommended.

Family involvement emerged as a key reinforcing factor; thus, interventions should extend beyond the school environment to include home-based support systems. Strengthening parental engagement can significantly enhance the sustainability of students' physical activity behaviors.

Significant socioeconomic disparities in engagement highlight the need for equitable and inclusive programming. Ensuring access to facilities, resources, and opportunities for all students is essential in reducing participation gaps.

Although school support was not significantly correlated with engagement, this does not diminish its importance. Instead, it suggests that institutional programs must be

implemented in a way that meaningfully engages students and fosters motivation, rather than merely providing activities and facilities.

Overall, the study emphasizes that physical activity engagement among senior high school students is influenced by a combination of motivational, interpersonal, and structural factors. A holistic, inclusive, and motivation-centered approach is necessary to foster a sustainable culture of active living within the school. Through collaborative efforts among schools, families, and communities, students may be guided toward lifelong engagement in physical activity that supports their overall physical, psychological, and social well-being.

### **Compliance with Ethical Standards**

This study adhered to ethical standards in educational research involving human participants. Ethical approval was obtained from the appropriate institutional review body, together with permission from the school administration prior to data collection. Informed consent was secured from all participants, including students and faculty members, after a clear explanation of the study's purpose, procedures, potential risks, and benefits. Participation in the study was voluntary, and respondents were informed of their right to withdraw at any point without penalty. Anonymity and confidentiality were strictly observed through the use of coded identifiers to protect the identities of participants. All collected data were used exclusively for research purposes and were securely stored to prevent unauthorized access. The study was conducted with honesty, integrity, and transparency in data collection, analysis, and reporting. All findings were presented accurately, including limitations and no conflicts of interest were identified.

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