



Academic confidence as a predictor of physical activity engagement among students enrolled in physical education classes

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ABSTRACT

The purpose of this study is to determine whether academic confidence predicts university physical education students' physical activity (PA) engagement. This employed a quantitative, descriptive-correlation method with 362 respondents and utilized validated standardized instruments. Stratified random sampling was used to obtain an equal representation of participants. The Academic Confidence Questionnaire and International Physical Activity Questionnaire were the instruments employed and validated to contextualize the items using Google Forms to gather the respondents' responses. In analyzing the data gathered, mean was used to identify the levels of academic confidence and PA engagement, Pearson r was used to determine the relationship between academic confidence and PA engagement, and regression was used to determine whether academic confidence predicts PA engagement of the students. The results showed that the academic confidence level was high while the PA engagement was moderate. The results also revealed a significant relationship between academic confidence and PA engagement. Finally, the results exhibited that academic confidence significantly predicts PA Engagement among university physical education students.

Keywords: Academic confidence, physical education, physical activity, Philippines regression

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INTRODUCTION

Engagement in physical activities (PAs) in a week, particularly at moderate and vigorous levels, is part of adults' goal to achieve wellness; however, this activity declines every time a person ages (Suryadinata et al., 2020). Filipino children and adolescents still fail to comply with the World Health Organization's recommendation of engaging in physical activities to attain optimum health (Cagas et al., 2022). For the students in particular, this case has severed due to the limitations imposed by the COVID-19 pandemic, such as the closing of schools, staying at home, and restriction of sports activities for almost two years (Barkley et al., 2020; Dunton et al., 2020). Because they were being home-schooled, they became sedentary because their mandatory daily PAs were not strictly engaged and monitored as if they were in schools (Roe et al., 2021). Additionally, their sitting time has become longer due to the pressure of schoolwork brought about by the secondary-tertiary transition (Alkhateeb et al., 2019; Owen, 2018), and if they have free time, they still neglect PA engagement because they prefer sedentary leisure activities such as computer/video games, television, and mere chat chats (Dunton et al., 2020). In the Philippines, students depend on Physical Education (PE) subject's mandatory activities, making them ignorant of other PAs beyond this class (Acampado and Valenzuela, 2018).

Many studies have found the benefits a person can gain from PA engagement. Being physically active helps a person survive by preventing the acquisition of deathly diseases such as heart and lung ailments (Loprinzi, 2015). Positive effects are different according to the intensity levels engaged by the person. Moderate level prevents vascular diseases (Armstrong et al., 2015), while vigorous activity strongly helps in an individual's behavior change (Szymczak et al., 2020) as long as the engagement is frequent. Its vital effects on a person's physical, mental, and psychological health are already evident in society, given the delight and happiness one feels every time he engages in any PA

(Kumar, 2017). In fact, during the pandemic, due to the sudden change of routines and stress, people become more conscious of their mental health care, such as cases in the Philippines where the utilization of remote Physical Education gave the students diverse learning challenges associated with alternative instructional methods (Ybanez, 2022), and several other problems affecting academic employee's mental health like internet connectivity, home distractions, work-life balance, infection anxiety, virtual communication, and for teachers, module management, student assessment, and online class instruction (Law-ay et al., 2022). That is why they engage in PAs during their free time regardless of their intensity as long as they are fond and happy (Bone et al., 2022). PA engagement has become a significant factor in increasing students' engagement and performance in education, particularly by incorporating PAs into daily lessons to make classroom interaction active. This has resulted in a more interested and focused learner acquiring higher grades (Reynolds, 2022).

Academic confidence plays a significant role in PA engagement. Academic confidence is the person's belief in his capability in academic circumstances (Garrido et al., 2020), which, for the students, is a huge factor in achieving the goal of constant PA engagement. It is the student's self-confidence in their academic undertakings (Marianty et al., 2021), depending on his belief in strategizing to cope and fight against the challenges (Amirtha and Shalini, 2013). For students, confidence is vital to developing a strong urge to participate in sports and other physical activities. When students' confidence is greatly honed and developed, they are likely to become participative in various tasks in school, even physical activities (Akbari and Sahibzada, 2020).

Similarly, Ilhan and Bardakci (2020) indicated that the higher the PA, the greater the confidence is. However, it is also possible to occur the other way around when students have increased academic confidence and are actively involved in

PAs (Hussein et al., 2022). In the Philippines, academic confidence was found to play a crucial role in the student's engagement with academic tasks; the more they possessed self-confidence in class, the higher their participation in performance activities (Moneva and Tribunalo, 2020) and in facing challenges regarding academic concepts such as in mathematical concepts, it is confidence building that helped strategized in coping to these struggles (Velez, et al., 2023).

The COVID-19 pandemic has had positive and negative influences on students' PA. A heightened use of technology among students helped them improve their technological academic confidence and competence (Tong et al., 2022). However, excessive use has exposed them to too many gadget-related leisure activities, such as video games and social media use, making them sedentary (Amirual Ayop et al., 2023). Added to this are the destructive spending-sitting behaviors due to the heavy workloads and the negative influence of the school, home, and community (Cowgill et al., 2020; Owen, 2018). Students became less often engaged in physical activity due to several factors, including educational and traditional concerns (Kljacevic et al., 2021). In the Philippines, university students' physical activity (PA) dropped significantly during the COVID-19 pandemic, especially among females, in which sitting hours were prolonged, especially on weekdays (Cruz et al., 2022). The University student-athletes have been found to have engaged less in moderate-to-vigorous PAs, even walking, and increased spending time in sitting due to switching on-site classes to home confinement learning (Pandila et. al, 2023).

Physical activity is generally important in one's daily life; however, if surpassed by too much sitting, it may lead to a sedentary life instead of an active one. Thus, it is important to create and impose encouragement and empowerment towards movement and boost students' academic self-confidence, as it plays a vital role in empowering oneself to engage in PA.

If these two work together, holistic development within individuals would be attainable.

This study aims to determine whether academic confidence predicts PA engagement in university physical education students. Specifically, it aims to find out the levels of academic confidence and PA engagement, determine the significance of the relationship between academic confidence and PA engagement, and find out whether academic confidence significantly predicts PA engagement of university physical education students. The null hypotheses, which were tested at a 0.05 level of confidence, state that there is no significant relationship between academic confidence and PA engagement, and academic confidence does not predict PA engagement of university physical education students.

MATERIALS AND METHODS

This study employed a quantitative descriptive correlation method with 362 SPEAR (Sports, Physical Education, Arts, and Recreation) students at Davao Oriental State University (DOrSU). It was conducted at Davao Oriental State University (DOrSU) in Guang-Guang, Dahican, City of Mati, province of Davao Oriental. Among the 6,086 1st and 2nd-year students enrolled in the university, 362 were identified as the respondents using the Raosoft sample size calculator at a 95% confidence level. In the 6,086 population size, employing the 95% confidence level of the software resulted in a 362 sample size, thus, the number of respondents in the study. Stratified random sampling was then utilized to obtain equal representation among the respondents. The accuracy of inclusion was ensured by asking for copies of the official class lists of all SPEAR sections from the SPEAR instructors to guarantee that the respondents are bona fide DOrSU students enrolled in SPEAR 1 and 3 subjects during the 1st semester of the school year 2022-2023. Importantly, permission to access these lists was given appropriately.

Meanwhile, those who were not officially enrolled in the said subjects and those who wished to withdraw participation from the study were excluded. The DOrSU Research Ethics Office issued an ethical

clearance, signifying that the researcher has adhered to the ethical standards governing the study's conduct. Figure 1 shows the map of the study's research locale.

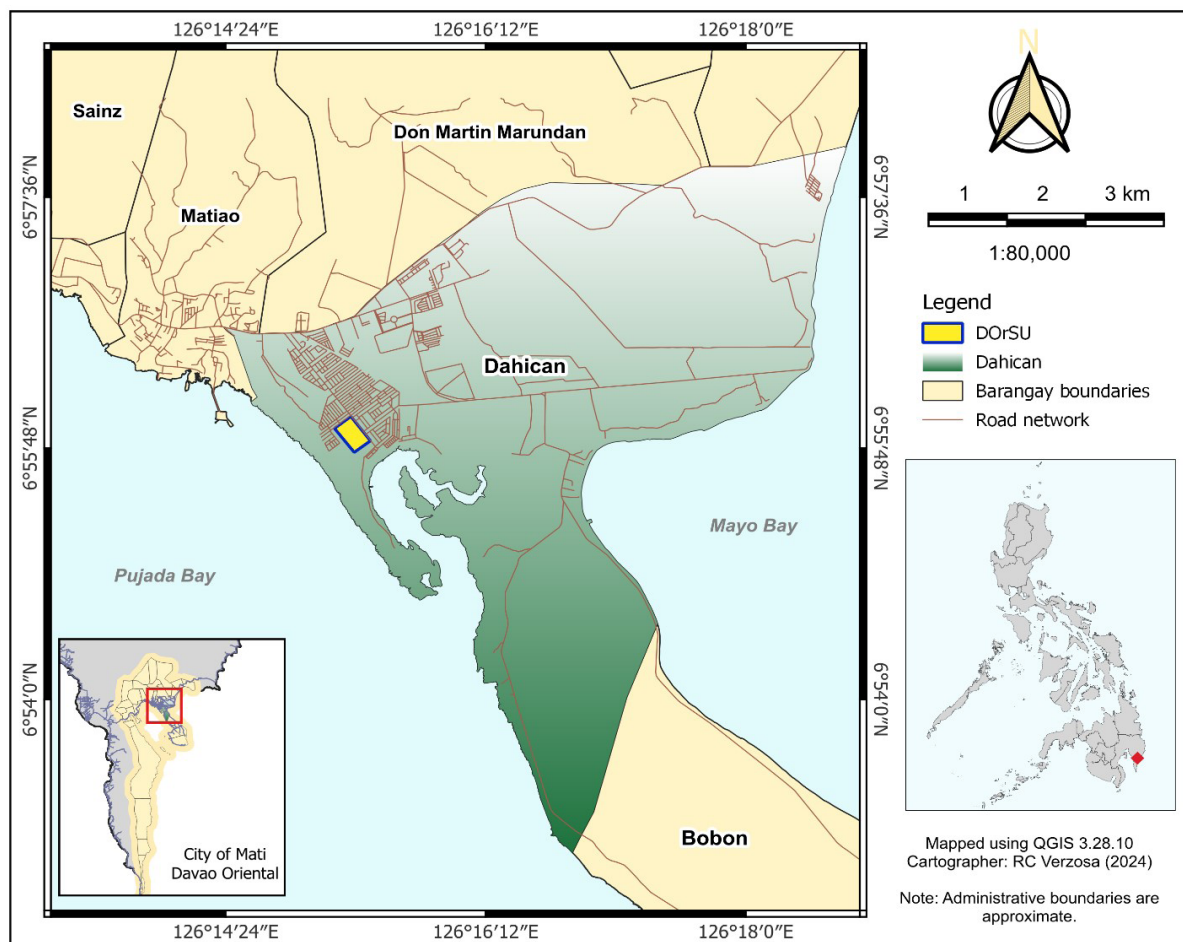


Figure 1. Map of Davao Oriental State University- Main Campus.

Two types of instruments were used in the study. The first one is the Academic Confidence Questionnaire developed by Bray, Byrne, and O'Kelly (2020), which contains six indicators, namely: working with others – collaboration; communication; being creative – creativity and innovation; managing myself – self-direction; managing information and thinking and use technology for educational purposes with three items each indicator and a total of 18 items. The second instrument used was the International Physical Activity Questionnaire (IPAQ). This questionnaire is a standardized questionnaire used by various researchers globally. However, in this study, the researcher based it on the study of Craig et al. (2003), which

is composed of five indicators, namely: job-related PA with 7 items, transportation PA with 6 items, housework, house maintenance and caring for family with 3 items, recreation, sport, and leisure-time PA with 3 items and time spent sitting with 2 items with a total of 21 items. All these instruments were adopted and underwent validation by the panel of experts to contextualize the study. The variable is considered very high if the mean obtained falls in the range of 4.20-5.00, which indicates that the measures of the study variables are always manifested; high if it falls in 3.40-4.19, which reflects that the measures of the study variables are often manifested; moderate if it is in the range of 2.60-3.39 indicating that 12

the measures of the study variables are sometimes manifested; low if it falls under 1.80-2.59 which specifies that the measures of the study variables are seldom manifested and; very low if it is in the range of 1.00-1.79 showing that the measures of the study variables are never manifested. The instruments were evaluated and validated with a 4.68 rating, which was very good.

Mean was utilized to determine academic confidence and PA engagement levels. Pearson r was used to determine the relationship between academic confidence and PA engagement, and Linear Regression was used to identify whether academic confidence predicts PA engagement. Ethical

considerations were also highly observed in this study. It has undergone two ethics reviews, one at the University of Mindanao (UM), Davao City, where the researcher took her master's degree study, and the other one at DOrSU, the partner institution of this study, which both has released ethical clearance and ethical completion to the researcher. The respondents' participation in this study was ensured to be voluntary; those who wished to withdraw their involvement from the study were given the free will to do so. Informed Consent was given to them before answering the questionnaires. Finally, the researcher observed confidentiality, protection, privacy, and appropriate citation and referencing in the study's conduct and making.

RESULTS

Table 1. Level of academic confidence.

Indicators	SD	Mean	Descriptive level
Working with others-collaboration	0.83	4.04	High
Communication	0.83	3.74	High
Being creative- creativity and innovation	0.79	3.97	High
Managing myself- self-direction	0.77	3.96	High
Managing information and thinking	0.80	3.82	High
Using technology for educational purposes	0.83	4.08	High
Overall	0.68	3.94	High

Table 1 displays the level of academic confidence, revealing an overall mean of 3.94 (SD=0.68) accounted as high. This is a result of the combined means of its six indicators which all got a high descriptive level, namely: using technology for educational purposes with a 4.08 mean score (SD=0.83); working

with others – a collaboration with 4.04 mean (SD=0.83); being creative – creativity and innovation with 3.97 mean scores (SD=0.79); managing myself – self-direction with 3.96 means (SD=0.77); managing information and thinking with 3.82 means (SD=0.80) and; communication with 3.74 means (SD=0.83).

Table 2. Level of physical activity engagement.

Indicators	SD	Mean	Descriptive level
Job-Related PA	1.06	3.16	Moderate
Transportation PA	0.98	3.16	Moderate
Housework, House maintenance & caring for family	0.96	3.26	Moderate
Recreation, Sport, and Leisure-Time PA	0.94	3.29	Moderate
Time –spent sitting	1.03	3.26	Moderate
Overall	0.75	3.23	Moderate

Table 2 presents the level of physical activity engagement, revealing a mean score of 3.23 (SD=0.75), which is described as moderate. All of the five indicators of this variable obtain a rating of moderate level, namely recreation, sport, and leisure-time physical activity with a 3.29 mean score

(SD=0.94); job-related physical activity with a 3.16 mean score (SD=1.06); housework, house maintenance and caring for family with 3.26 mean score (SD=0.96); time-spent sitting with 3.26 mean (SD=1.03); and physical transportation activity with 3.16 mean (0.98).

Table 3. Correlation between academic confidence and physical activity engagement.

Academic confidence	Physical activity engagement					
	Job-related physical activity	Transportation physical activity	Housework, house maintenance, and caring for family	Recreation, sport, and leisure-time physical activity	Time-Spent Sitting	Overall
Working with others-collaboration	.28* (0.000)	.22* (0.000)	.39* (0.000)	.29* (0.000)	.18* (0.000)	.36* (0.000)
Communication	.36* (0.000)	.29* (0.000)	.42* (0.000)	.35* (0.000)	.29* (0.000)	.49* (0.000)
Being creative-creativity and innovation	.31* (0.000)	.24* (0.000)	.34* (0.000)	.34* (0.000)	.21* (0.000)	.38* (0.000)
Managing myself- self-direction	.30* (0.000)	.22* (0.000)	.36* (0.000)	.31* (0.000)	.19* (0.000)	.36* (0.000)
Managing information and thinking	.42* (0.000)	.32* (0.000)	.39* (0.000)	.39* (0.000)	.31* (0.000)	.49* (0.000)
Use technology for educational purposes	.29* (0.000)	.23* (0.000)	.36* (0.000)	.31* (0.000)	.25* (0.000)	.38* (0.000)
Overall	.39* (0.000)	.30* (0.000)	.45* (0.000)	.39* (0.000)	.28* (0.000)	.48* (0.000)

*Significant at 0.05 significance level

Moreover, table 3 exposes the significance of the correlation between the student’s academic confidence and physical activity engagement. The data presented herein shows an overall calculated r-value of .48, a moderate relationship with a p-value of 0.0000, which is lesser than the alpha value of 0.05, thereby rejecting the study’s

first hypothesis. This implies a significant relationship between academic confidence and PA engagement among university students in physical education classes. It can be stated that academic confidence has a moderate effect on PA engagement among students enrolled in physical education classes.

Table 4. The extent of influence of predictor variables on physical activity engagement.

Independent variables	Physical activity engagement (Dependent variables)			
	B (Standardized Coefficients)	B (Unstandardized Coefficients)	t	Significant
Constant	1.04	.22	4.79	.000
Academic Confidence (AC)	.40	.44	5.39	.000
R	.48			
R ²	.23			
F	55.20			
p	.000			

Finally, illustrated in Table 4 is the data that determined whether academic confidence significantly predicts the PA engagement of the students enrolled in physical education classes. As shown in the findings above, the variable academic confidence attained a calculated t -value of 5.39 ($p=0.000$), which implies a significant influence of academic confidence on students' engagement in physical activity. Moreover, there is a computed R^2 of .233, which means that 23% of the impact of physical engagement can be explained by collaboration, communication, creativity and innovation, self-direction, managing information, thinking, and educational technology use. In comparison, the remaining 77% cannot be defined in the scope of this study.

DISCUSSION

The findings show that a high student's academic confidence and a lower standard deviation tend to cluster closely around the mean value. These imply that the student's academic confidence is often manifested, and there is a higher level of agreement or consistency among the students' self-assessment of their academic confidence.

This outcome parallels Saidah's findings (2024), highlighting the high academic self-confidence exhibited by students during both in-class and extracurricular learning engagements. However, this was contradicted by Tasneem and Panwar (2019), who revealed that undergraduate students only have moderate academic confidence regardless of gender. However, Malhotra, Kumari, and Faiyaz (2022) neutralized this idea by stating that students' academic confidence varies according to their academic status. High achievers have high academic confidence, while low achievers only have moderate academic confidence. With this result, the researcher suggests that physical education teachers, being the first-hand guide and the mentors of the students in the school, may set and utilize teaching activities that could help

elevate the students' academic confidence and achieve a very high level. Specifically, these strategies may be about educational games and 21st-century teaching-learning activities for constant recitation and classroom participation, which might be reflected in the course syllabi for the basis of implementation.

On the other hand, the results revealed that the student's physical activity engagement level is moderate, and the standard deviation is low. These results stipulate that the student's engagement in physical activity is sometimes manifested, and the students have similar physical activity levels, clustering closely around the mean value. However, it must also be noted that the indicator *time-spent sitting* is not a physical activity but rather the opposite of this concept. In the results, it prevailed to be at a moderate level too. This indicates that students sometimes manifest physical activity engagement and time spent sitting. This result is similar to Martin, Santos, and Tubera's (2017) study, which found that college students partake only in moderate physical activity. Moreover, the systematic review of Kljacevic et al. (2021) specified that students are moderately engaged in physical activity for several reasons, such as the different educational systems and diverse cultural backgrounds. As for the moderate level of time spent sitting, Cowgill et al. (2020) ascertained that students spend much time sitting because of the heavy course workloads and other environmental limitations that hurdled them to become physically active.

With this, it is strongly recommended that physical educators strengthen their monitoring and integration of physical activity in the class. PE teachers may regularly assess and check the students' active lifestyles every semester to ensure constant engagement. They may establish a unified strategy among the teachers to actualize this goal, such as a mandatory requirement to create and implement individual workout plans and a compulsory attainment of the student's average body mass index. Pre-assessment, monitoring, and post-assessment may be done throughout

the semester to ensure that all students are in the average score/range of their BMI and are employing their workout plans. On the other hand, the students may do self-paced tracking of their progress by creating activity log sheets containing their physical activities and how often they partake in them. They might do it whether it is a part of their class or not to keep checking on their consistency and gain.

Moreover, the result suggests a significant relationship between academic confidence and physical activity engagement, thus rejecting the first null hypothesis of the study. This indicates that the student's academic confidence moderately impacts their determination to engage in physical activity. This finding corresponded to the discoveries of Ilhan and Bardakci (2020), who stressed that the students having high confidence in any aspects of their academic undertakings were seen to be highly participative in physical activities, unlike those who were less confident in class. Hussein, Tawfeeq, and Khalaf (2022) also emphasized the two-way relationship between academic confidence and physical activity engagement. As students owned high self-confidence in class, they were more encouraged to become physically active, and if they performed more physical activity, their self-esteem and confidence to attain excellence also increased.

Finally, the result also rejects the second null hypothesis of the study because it prevailed that academic confidence significantly predicts physical activity engagement. The finding implies that the student's academic confidence strongly governs their physical activity engagement. Well-established academic confidence allows students to participate in physical activity more often. This result is supported by Gallardo (2023), who mentioned that the students' confidence significantly projects their participation in doing a task. Higher confidence means greater performance. Simonton, Gran, and Solomon (2016) added that the student's confidence, as seen in how they believe in their capabilities and value the task at hand, pushes them to

engage in physical activities they enjoy. However, the results contradict the findings of Martin et al. (2017), who revealed that extrinsic and intrinsic motivation were predictors of physical activity participation among college students.

CONCLUSION

The results of this study show that the level of academic confidence is high, while the level of physical activity engagement is moderate among university physical education students. Moreover, it reveals a significant relationship between academic confidence and physical activity engagement. Finally, it was found that academic confidence significantly predicted physical activity engagement among university physical education students. The findings of this study indicate that university physical education students frequently demonstrate academic confidence while occasionally participating in physical activity. Moreover, it was observed that their academic confidence has a moderate impact and significantly influences their engagement in physical activity. Hence, physical educators must foster students' academic confidence to promote increased engagement in physical activity. Efforts to encourage collaboration, communication, innovation, self-direction, thinking informatively, and using technology in academic undertakings could enhance students' confidence, leading to improved physical activity engagement and overall well-being.

Finally, it is highly recommended that researchers investigate the results of this study, do additional research related to academic confidence and physical activity engagement, and utilize the findings herein to support this study further.

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