

Movement Competency Training Performance and Challenges in Physical Activity of Students

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Abstract

This study investigated the influence of physical activity challenges on the Movement Competency Training performance of first-year college students at the Bicol State College of Applied Sciences and Technology (BISCAST) during the 2025-2026 school year. Utilizing a descriptive-associational-correlational research design, the study aimed to assess the levels of challenges specifically in content knowledge, learning environment, physiological adaptation, and motivation and their relationship to student performance in physical fitness, locomotor and non-locomotor exercises, basic resistance training, and healthy eating habits. The respondents were of 171 first-year students, representing a total enumeration of the population of selected programs. Data were gathered through a validated survey questionnaire to measure challenges and a 40-item teacher-made test to evaluate movement competency training performance. Statistical analysis involved were Frequency Count, Percentage Technique, Weighted Mean, Mean, Standard Deviation, Performance Level, Pearson Product-Moment Correlation Coefficient, Coefficient of Determination and Chi-square Test of Independence. A significant relationship was found between challenges and movement competency training performance, indicating that as challenges increased, movement competency scores significantly decreased. It also concluded that while students possessed baseline fitness awareness, intellectual challenges were the most significant predictors of poor physical performance. Furthermore, a specialized lesson guide was developed using the ADDIE model to enhance pedagogical support and overcome identified challenges in Movement Competency Training Performance.

Keywords: Movement Competency Training, Physical Activity Challenge, Demographic Profile

Introduction

Movement Competency Training (MCT) serves as the foundation for student physical development, emphasizing the mastery of fundamental patterns produced by skeletal muscles to optimize energy expenditure. When students demonstrate high performance in this subject, they exhibit a broad spectrum of physical literacy, ranging from technical execution in high-intensity drills to functional efficiency in everyday tasks. This mastery is not merely physical, consistent competency in movement significantly enhances a student's physiological profile reducing risks of hypertension and cardiovascular issues while simultaneously boosting cognitive function and mental clarity. A student who performs well in MCT is essentially building the movement vocabulary necessary to navigate both sports and daily life with resilience and ease.

Despite the clear benefits, students frequently encounter a complex array of challenges that impede their progress in Movement Competency Training. Many struggle with a perceived lack of time due to demanding academic schedules, which often forces physical development to take a backseat to sedentary study. Psychological barriers, such as a deficit of social support or the difficulty of maintaining long-term motivation, can make technical training feel like an insurmountable chore. These personal challenges are often exacerbated by systemic and environmental issues, including the high cost of specialized equipment and a lack of accessible, safe spaces to practice these movements outside of the classroom. Overcoming these challenges requires more than individual effort, it necessitates a supportive school environment and community policies that prioritize inclusive, accessible physical education for all students.

International research consistently highlights the significant global trend of insufficient physical activity, a major risk factor for non-communicable diseases such as heart disease and diabetes. The World Health Organization (WHO), reveals that about one-third of the world's adult population and over 80% of adolescents fail to meet recommended physical activity guidelines. Research also points to several key challenges, including increasing urbanization and sedentary lifestyles due to technology and automation. Despite these hurdles, a wide body of research from institutions like the Centers for Disease Control and Prevention (CDC) and the American Heart Association confirms the powerful and multifaceted benefits of regular physical activity, from improving cardiovascular and mental health to enhancing overall quality of life and longevity.

The urgency of addressing physical inactivity is further underscored by its strong alignment with the United Nations' Sustainable Development Goals (SDGs). Specifically, this study directly contributes to SDG 3: Good Health and Well-being by promoting active lifestyles and preventing non-communicable diseases. SDG 4: Quality Education, which emphasizes holistic development, including physical literacy and skills for lifelong health. Physical education and activity are recognized as vital tools for achieving these goals, promoting not only physical health but also mental well-being, social cohesion, and even environmental awareness (Frontiers Media SA, 2023). This research provides insights into how educational institutions can better contribute to these global sustainability objectives. Understanding challenges in physical activity can inform strategies to cultivate a culture of sustained physical activity.

International research on physical activity reveals a consistent set of challenges that transcend national boundaries, creating significant hurdles to global health and wellness. A primary barrier identified in numerous studies is a lack of time, often cited by adults juggling work, family, and other commitments (American Heart Association, 2022). This is compounded by a lack of motivation and energy, which are frequently interlinked, as individuals who are tired from their daily routines find it difficult to engage in exercise. Social and environmental factors play a critical role; research from the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) highlights unsafe neighborhoods, a lack of accessible and affordable facilities, and insufficient social support from family and friends as major deterrents. These challenges are especially pronounced in urban areas, where sedentary behaviors are on the rise due to technological conveniences and a built environment that discourages active transport like walking or cycling (WHO, 2022).

On a global scale, university students face a systemic decline in physical activity (PA) primarily driven by the built environment and institutional temporal poverty."Internationally, research highlights

that campus "walkability" and the proximity of residential halls to sports complexes are decisive factors in activity levels (Sallis et al., 2016; Huang et al., 2023). Beyond infrastructure, the "hidden curriculum" of academic rigor in countries like Saudi Arabia, India, and various Western nations creates a "Freshman 15" transition, where rigorous scheduling and heavy credit loads leave students with no time for exercise (Chao et al., 2022; Vainshelboim et al., 2019; Small et al., 2017). Psychological barriers such as exercise anxiety and the intention-behavior gap where students understand the neurobiological benefits (e.g., BDNF release and brain plasticity) but lack the self-regulation to act are documented as universal hurdles (Rhodes et al., 2017; Loprinzi et al., 2023; Pila et al., 2020).

Moving into the regional context, particularly within the ASEAN region and middle-income countries, environmental and financial barriers become more specialized. Extreme weather patterns and a lack of climate-controlled indoor spaces significantly restrict outdoor engagement in tropical climates (Phongsavan et al., 2019). Socioeconomically, the lack of subsidized sports programs or expensive off-campus gym fees creates a financial wall that prevents students from lower-income backgrounds from maintaining active lifestyles (Deliens et al., 2016; Morales et al., 2025). This is compounded by a growing digital divide, where a lack of institutional support for mHealth and wearable technology further alienates students who cannot afford personal fitness tracking tools (Laranjo et al., 2021).

The Commission on Higher Education (CHED) plays a crucial role in shaping the students' program to promote physical activity. The CHED Memorandum Order (CMO) 39, series of 2021, particularly the introduction of the Physical Activity Towards Health and Fitness (PATHFit) courses, explicitly aims to address deficiencies in students' fitness performances and integrate fitness engagement with sports participation, social interaction, and diversity of movement (Soriano, 2024). This study, by examining the current physical activity landscape of students, directly assesses the practical outcomes of these CHED mandates and identifies areas where further support and intervention may be needed to ensure that these students are not only academically proficient but also actively engaged in physical well-being.

In the Philippines, these challenges are intensified by a persistent shortage of appropriate equipment and poor maintenance of existing sports infrastructure across Higher Education Institutions (HEIs) (Philippine Journal of Health Research and Development, 2020). Recent data reveals a "failing grade" for youth activity, with only about 37% of university students remaining active (Largoza et al., 2021). The transition to remote and blended learning further exacerbated these resource gaps, as students lost access to campus facilities and struggled with home-based PA (International Journal of Instruction, 2023). The Philippine context shows a sharp rise in mental health conditions among youth aged 15–24, which acts as both a result of and a barrier to movement (Lagman et al., 2022).

At the local level, the quality of instruction and scheduling serves as the final bottleneck. Studies in Cebu City, Northern Mindanao, and the Bicol Region link student inactivity to dissatisfaction with teacher quality and unengaging instructional methods (Asia-Pacific Journal of Public Health, 2022; Bicol University Research Journal, 2021). Large class sizes and high student-to-teacher ratios prevent the individualized instruction necessary for developing movement competency. The Filipino students' struggle is not just a lack of motivation, but a combination of sedentary academic immersion, inadequate local facilities, and the metabolic cost of high digital screen time (Tan et al., 2024; Li & Shi, 2021).

Maintaining a physically active lifestyle among college students is increasingly hindered by a complex interplay of time constraints, academic fatigue, and limited socio-economic resources. At Bicol State College of Applied Sciences and Technology (BISCAST), students often struggle to balance demanding course loads with physical health, leading to a sedentary shift that threatens their long-term well-being. Despite the implementation of the Physical Activity Towards Health and Fitness (PATHFit) program, a mandatory curriculum designed to instill lifelong movement competency, there remains a critical gap in understanding how these specific personal and environmental barriers directly impact student performance. This study addresses the urgent need to bridge that gap, investigating how these challenges influence Movement Competency Training outcomes to better inform institutional strategies that promote academic success, mental resilience, and a sustained culture of wellness.

Students consistently face significant challenges to physical activity, primarily stemming from inaccessible facilities, materials, and equipment, a challenge observed globally. Beyond infrastructure, the quality of physical education instruction, program design, and effective class management are crucial factors impacting student engagement. Recent research increasingly underscores the profound link between physical activity and improved student well-being, highlighting its importance particularly in the post-pandemic era for Filipino tertiary students. This body of evidence emphasizes the need for educational institutions to prioritize comprehensive and relevant interventions that address both resource deficiencies and instructional quality to effectively enhance student physical activity levels and overall well-being.

The studies all agreed that physical activity is crucial in the well-being and mental health of college students. Their studies suggest that promoting physical activity through structured programs and interventions can enhance overall well-being, improve mental health, and lead to better academic success. The studies are similar to the present research in a sense that they all focus on the relationship between challenges and movement competency training of college students. However, they differ in their scope and specificity. While some of the studies are international in scope. Furthermore, some studies focus on specific subgroups, while others concentrate on specific periods, such as the post-PE course period. The present research, while building on these findings, can provide a specific, localized context for college students.

The studies agreed that inadequate or inaccessible facilities and equipment are primary challenges for students engaging in physical activity. This is further supported by several Philippine-based studies, which specifically identified issues like limited access to sports facilities during peak hours and outdated infrastructure. Their findings are similar to the present research in that they all highlight environmental and resource-based barriers to physical activity. However, they differ by focusing on specific, localized contexts in the Philippines, providing a direct parallel to the challenges faced by students.

Despite extensive research across both global and local literature and studies highlighting critical challenges and varying physical activity levels among students, a notable gap exists in the literature. None of the reviewed studies explicitly aimed to craft a tangible instructional material as a direct output influenced by the identified challenges and movement competency training competency. While many studies identify problems, explore relationships, or assess interventions, the crucial step of translating these findings directly into a practical, implementable instructional resource remains largely uncharted territory within this specific body of work. This gap presents a unique opportunity for this study to make

a significant and practical contribution by bridging the divide between academic insight and pedagogical application.

The significance of this study extends across multiple levels of the academic and social community, providing a comprehensive framework for improving student well-being through data-driven insights. At the individual level, it empowers students with self-awareness and fitness enthusiasts with the empathy needed to mentor peers, while equipping parents to provide informed support for active lifestyles at home. For educators, including college instructors and curriculum planners, the findings offer a roadmap to tailor instructional methods and integrate practical strategies that directly address student-specific hurdles. On an institutional scale, the study provides BISCAS administrators, deans, and the College President with the evidence necessary to justify resource allocation for sports facilities, schedule flexibility, and targeted wellness programs. Beyond the campus, the research informs Higher Education Institutions (HEIs) on how to enhance institutional reputation through health-centric policies and serves as a vital assessment tool for CHED officials to evaluate the real-world impact of the PATHFit curriculum (CMO 39, s. 2021).

The researcher wanted to conduct this study because it determined the challenges that hinder the movement competency training of the students and it stood out because it directly addresses a critical gap in existing research by creating a tangible instructional material specifically, a lesson guide designed to overcome the challenges and enhance the Movement Competency Training performance of first-year college students at Bicol State College of Applied Sciences and Technology. The focus is specifically on Movement Competency Training Competency.

Research Objectives

This study determined the influence of movement competency training performance in challenges of physical activities of first year college students at Bicol State College of Applied Sciences and Technology (BISCAS), Naga City. Specifically, it obtained the following objectives:

1. To determine the demographic profile of the students along name, age, sex, and course;
2. To assess the level of movement competency training performance of students in terms of physical fitness, locomotor and non-locomotor exercises, basic resistance training movement patterns, and healthy eating habits;
3. To assess the level of challenges that hinder physical activity of students along content knowledge, learning environment, physiological adaptation, and motivation and engagement;
4. To assess the significant association between demographic profile and the challenges that hinder physical activity of the students and between the demographic profile and the movement competency training performance of the students;
5. To ascertain the significant relationship between the challenges and the movement competency training performance of students;
6. To identify the extent to which challenges influence the movement competency training performance of students;
7. To develop a lesson guide to overcome the challenges and enhance the movement competency training performance of students.

Scope and Delimitations

This study determined the influence of physical activity challenges on the Movement Competency Training performance of first-year college students at Bicol State College of Applied Sciences and Technology (BISCAST), Naga City for the first semester of the school year 2025-2026.

This research determined the demographic profile of students based on name, age, sex, and course. This also assessed the movement competency training performance in physical fitness, locomotor and non-locomotor exercises, basic resistance training, and healthy eating habits of the students. Thus, the study explored the significant associations between demographic profiles and both the challenges faced and performance levels, while also ascertained the relationship and the extent of influence those challenges have on movement competency. It further evaluates the association and relationship between challenges hindering their physical activity across content knowledge, learning environment, physiological adaptation, and motivation. The respondents of this study consisted of 171 first-year students, without a sampling technique being applied selected programs of Bachelor of Science in Entrepreneurship (A), Bachelor of Engineering Technology major in Electrical Engineering Technology (B), Bachelor in Technical-Vocational Teacher Education (C) and Bachelor of Science in Electrical Engineering (D). Utilized a descriptive-associational-correlational research design. The findings were utilized to develop a comprehensive lesson guide designed to overcome identified challenges and enhance the overall movement competency training performance of students.

This study was delimited to freshmen currently enrolled in PATHFit 1 under the researcher handled subject. This study excluded students from other programs. Subsequently the PATHFit 2, 3, and 4 were excluded. The findings are specific to the selected programs at BISCAST and are not intended to be generalized to other student populations or institutions.

Assumptions

These assumptions were established to clarify the context in which the data was gathered and to acknowledge the baseline conditions of the participants. The following statements were assumed to be true throughout the duration of the research:

1. The demographic profile of the students serves as the foundational context for their physical engagement.
2. The overall level of movement competency training performance was at a "Good" level.
3. The students were assumed to be highly challenged in their physical activities.
4. The lesson guide may be crafted to overcome physical activity challenges and enhance the Movement Competency Training performance of students.

Hypotheses

To systematically examine the variables involved in the study, several null and alternative hypotheses were formulated. The following objectives and their corresponding statistical hypotheses guided the analytical process:

Objective: To assess the significant association between demographic profile and the challenges that hinder physical activity of the students.

Ho: There is no significant association between demographic profile and the challenges that hinder physical activity of the students

Ha: There is a significant association between demographic profile and the challenges that hinder physical activity of the students

Objective: To assess the significant association between the demographic profile and the movement competency training performance of the students;

Ho: There is no significant association between demographic profile and the movement competency training performance of the students.

Ha: There is a significant association between demographic profile and the movement competency training performance of the students.

Objective: To ascertain the significant relationship between the challenges and the movement competency training performance of students.

Ho: There is no significant relationship between the challenges and the movement competency training performance of students.

Ha: There is a significant relationship between the challenges and the movement competency training performance of students.

Objective: To identify the extent to which challenges influence the movement competency training performance of students;

Ho: The challenges do not significantly influence movement competency training performance of students.

Ha: The challenges significantly influence movement competency training performance of students.

Theoretical Framework

This study is anchored in a hierarchical theoretical framework that identifies Social Cognitive Theory as the primary theory by Bandura (1986), as cited by Young et al. (2023), supported by the Theory of Planned Behavior by Ajzen (1985) as cited by Weiner et al. (2020) and Self-Determination Theory Deci and Ryan (1985) as cited by White et al. (2021) as integral sub-theories. This section provides a comprehensive exploration of the multidimensional nature of physical activity. Each theory is systematically discussed and reflected upon in the following subsections to further detail its core concepts and demonstrate its direct application to the study's variables, ensuring a foundation for interpreting the research findings.

Social Cognitive Theory (SCT), This theory was originally established by Bandura (1986), is built on the principle of triadic reciprocal determinism. This framework asserts that behavior, internal personal factors, and environmental events operate as interacting determinants of one another. A central pillar of this theory is self-efficacy, which represents an individual's belief in their capability to organize and execute necessary actions. These beliefs dictate how people manage prospective situations and achieve their goals. Recent scholarship by Young et al. (2023) and Lau et al. (2021) has further demonstrated that self-efficacy acts as a critical mediator between environmental barriers and physical performance, suggesting that individuals with high self-efficacy view challenges as tasks to be mastered rather than threats to be avoided. In this study, SCT was applied to the variables of physiological adaptation and

content knowledge as they relate to movement competency performance. When students encountered challenges such as physiological fatigue or a lack of technical knowledge, these factors functioned as environmental and personal barriers that tested their self-efficacy. If students perceived these barriers as insurmountable, their confidence in mastering complex Movement Competency Training movement patterns such as squats, lunges, or hinges diminished. This reduction in self-efficacy led to decreased effort and a higher rate of attrition during physically demanding training, resulting in lower observed movement competency scores.

Theory of Planned Behavior. This theory proposed by Ajzen (1985), explains human action through three primary considerations: behavioral beliefs, normative beliefs, and control beliefs. A key component is Perceived Behavioral Control (PBC), which refers to an individual's perception of the ease or difficulty of performing a specific behavior. Modern research by Hagger et al. (2022) and Mullan et al. (2020) highlights that PBC is often the strongest predictor of physical activity intentions, particularly when external resources are scarce or environmental barriers are prevalent. This theory was incorporated into the study to explain how the movement competency training performance influenced the challenges in physical activities. Specific challenges identified in the study, such as lack of accessible facilities or heavy academic workloads, acted as direct inhibitors to the students' perceived control. When students felt they lacked the appropriate environment or time to practice, their PBC was lowered, creating an "intention-behavior gap." Even if a student held a positive attitude toward fitness, the structural challenges within their environment reduced their perceived control to the point where they failed to sustain the training, leading to a decline in movement competency proficiency.

Attribution Theory, Primarily proposed by Heider (1958) and later refined by Weiner (1985), posits that individuals are motivated to understand the underlying causes of their successes and failures. According to Weiner, these causal explanations generally fall into three dimensions: locus of causality, stability, and controllability. In academic and physical settings, previous literature including recent discussions by Weiner et al. (2020) suggests that these attributions directly influence a student's emotional response and future expectations. For example, attributing a failure to a lack of effort typically leads to greater persistence than attributing it to a lack of ability. In this study, the researcher applies Attribution Theory to analyze how students perceive their Movement Competency Training Performance and the specific challenges they encounter in physical activity. The theory is used to bridge the gap between a student demographic profile and their actual physical output. By relating this theory to the study variables, the researcher examines how different demographic groups might attribute a struggle in movement competency training to factors. This framework helps explain why certain students remain resilient despite challenges while others may experience a decline in performance based on how they rationalize their training outcomes.

Self-Determination Theory. This theory developed by Deci and Ryan (1985), distinguishes between types of motivation based on the underlying reasons or goals that give rise to action. The theory posits that the satisfaction of three basic psychological needs: autonomy, competence, and relatedness is essential for high-quality performance and persistence. Recent meta-analyses by Vasconcellos et al. (2020) and studies by White et al. (2021) emphasize that the social environment plays a critical role in need satisfaction; when these needs are thwarted, individuals experience amotivation or controlled motivation, which lacks long-term sustainability. In this study, SDT was incorporated into the variable of

movement competency training performance, challenges in physical activity, and its impact on healthy eating habits and exercise persistence. The challenge of a lack of social support (relatedness) or a lack of autonomy in choosing activities directly hindered the satisfaction of the students' psychological needs. When students felt isolated or forced into Movement Competency Training, the activity lost its intrinsic value and was perceived as a burdensome requirement. This lack of relatedness and autonomy eroded their intrinsic motivation, causing them to disengage from the training and neglect the healthy eating habits required by the movement competency training, resulting in substandard physical performance.

Conceptual Framework

This study explores the association between demographic profile and their movement competency training performance, and the challenges they faced in physical activities. This indicates that demographic profile, specifically age and course, serve as significant predictors for challenges such as content knowledge, the learning environment, and motivation and engagement. The academic course is linked to their proficiency in physical fitness and locomotor and non-locomotor exercises. These interconnected variables are used as the foundational basis for developing the PATHFit 1: Movement Competency Training Lesson Guide.

The direct relationship between the challenges in physical activity and movement competency training performance. Content knowledge is linked to multiple movement competency performance, including physical fitness, locomotor and non-locomotor exercises, and healthy eating habits. Additionally, the framework shows a connection between physiological adaptation and locomotor and non-locomotor exercises, suggesting that physical readiness directly impacts movement mastery. Like the previous figure, these specific relationships serve as the critical evidence base for designing the PATHFit 1: Movement Competency Training Lesson Guide, ensuring the curriculum targets the challenges that hinder student movement competency performance.

Definition of Terms

For the purpose of general understanding, the following terms are defined conceptually and/or operationally.

Challenges in Physical Activity. Are defined as the perceived internal and external barriers that disrupt an individual's intention-behavior gap regarding exercise (Rhodes et al., 2020). In this study the term was operationally referred to students' responses of what challenges they faced which were assessed through on a survey questionnaire.

Content Knowledge. It refers to the specialized disciplinary literacy and theoretical foundations a student must possess to make informed health decisions (Ward, 2016; Iserbyt et al., 2020). In this study the term was operationally referred to understanding of students in movement competency training which focus on physical fitness, locomotor and non-locomotor exercises, basic resistance training movement pattern, and healthy eating habits.

Learning Environment. A multi-dimensional construct comprising the physical, pedagogical, and psychosocial climate of the educational setting (Mainhard et al., 2018; OECD, 2021). In this study the term was operationally referred to the classroom and facilities which focus on the learning environment as measured through a survey questionnaire.

Physiological Adaptation. The biological process by which the body's systems adjust and adapt to acute or chronic changes in the environment, specifically the physical stress of exercise, to maintain homeostasis (Estaphan et al., 2023). In this study the term was operationally referred to the responses of exercises and physical activities measured through survey questionnaires.

Motivation and Engagement. Reasons one has for acting or behaving in a particular way (Deci et al., 2020). In this study the term was operationally referred to engagement of students which focus on level of involvement and participation in an activity.

Lesson Guide. Structured pedagogical framework used to systematically direct instruction and monitor student development in the cognitive and psychomotor domains of physical literacy (Blegur et al., 2023; Bodnar et al., 2020). This guide incorporates the Movement Competency Screen (MCS), the standardized Physical Fitness Test (PFT), and specialized performance rubrics to facilitate the mastery of specific competencies in fundamental movement patterns and fitness levels (Ceribo, 2025; Alberto, 2024). In this study the term was operationally referred to an instructional material which focuses on Movement Competency Training.

Movement Competency Training Performance. The ability of students to execute fundamental movement patterns such as locomotor and non-locomotor skills without dysfunction or pain, establishing a baseline of quality movement (Scrib & Cook, 2021). In this study the term was operationally referred to performance of students in movement competency training validated teacher-made test.

Physical Fitness. Physiological state of well-being that provides a foundation for daily tasks and protection against disease by allowing the body to respond and adapt to the stress of physical effort (Bakinde, 2022; Guidangen, 2016). In this study the term was operationally referred to performance of students based on their knowledge and understanding of the components in movement competency training using a validated teacher-made test.

Locomotor and Non-locomotor Exercises. The fundamental movement skills necessary for functional physical development; locomotor skills involve transporting the body from one point to another, while non-locomotor (axial) skills involve moving the body around its own axis without changing location (Gallahue et al., 2012). In this study the term was operationally referred to the performance of students based on their knowledge and understanding of the components in movement competency training using a validated researcher-made test.

Basic Resistance Training Movement Pattern. Defined as the seven primal functional movements (squat, lunge, hinge, push, pull, twist, and gait) that form the essential biomechanical foundation for both daily activities and advanced athletic performance (Science for Sport, 2025). In this study the term was operationally referred to the performance of students based on their knowledge and understanding of the components in movement competency training using a validated researcher-made test.

Healthy Eating Habits. As the consistent and conscious selection of a balanced diet rich in essential macronutrients and micronutrients that nourishes the body for optimal growth, energy, and physiological maintenance (Estaphan et al., 2023). In this study the term was operationally

referred to the performance of students based on their knowledge and understanding of the components in movement competency training using a validated researcher-made test.

Research Design

This study utilized a descriptive-associational-correlational method. This methodological design stated that descriptive research was essential for providing a detailed account of characteristics within a particular population, allowing researchers to paint a picture of the current situation without manipulation. As noted by Fraenkel et al (2019), & Creswell (2018), correlational research was used to investigate the extent to which variations in one factor correspond with variations in another, which was critical for identifying how specific barriers directly impact fitness outcomes.

The descriptive method was employed to determine the physical activity challenges hindering students, including content knowledge, learning environment, psychological and physiological factors, and motivation and engagement. It also used to assess current movement competency training performances in terms of physical fitness, locomotor and nonlocomotor exercises, basic resistance training movement patterns and healthy eating habits, aiding in the creation of a lesson guide. This method was successfully applied by Al-Hazzaa (2024), who used descriptive analysis to identify perceived challenges and benefits contributing to university students' physical activity. Similarly, Dizon et al. (2022) utilized this method to establish the baseline prevalence of physical activity and fitness levels among Filipino university students.

The associational method was used to determine significant associations between the demographic profile of the students such as age, sex, and course and the challenges in physical activity, as well as their movement competency performance. In this study, the Chi-square (χ^2) test specifically was used to identify these associations, such as the relationship between age and content knowledge. This method was reflected in the work of Frank et al. (2021), who found significant differences in mental health outcomes associated with different academic majors (sports-related vs. liberal arts), suggesting that academic immersion dictates physical activity outcomes. Elgazar et al. (2022) applied a similar approach in a review to associate various demographic and environmental factors with physical activity barriers in university settings.

The correlational method was utilized to determine the significant relationship between challenges in physical activity and the movement competency performances of students, as well as the extent to which these challenges influence those performances. This approach is mirrored in the study by Chacón-Cuberos et al. (2020), which investigated the relationship between physical activity and academic performance through the mediating role of emotional intelligence. Huang et al. (2025) successfully applied correlational techniques to identify the positive relationship between physical activity and mental health, noting its role in reducing student anxiety and depression.

Respondents of the Study

The respondents of this study were the total enumeration of class sections per the course program handled by the researcher. This included only first-year students of the course program at Bicol State College of Applied Sciences and Technology (BISCAST), Naga City, during the first semester of the school year 2025-2026. The research focused exclusively on this state college where the researcher was employed.

Table 1

Respondents of the Study

Course Programs	N-respondents	Percentage
A	47	27.49
B	23	13.45
C	50	29.24
D	51	29.82
Total	171	100

Table 1 presents the distribution of the respondents across the various course programs handled by the researcher during the first semester of the school year 2025-2026. A total of 171 respondents participated in the study, representing a total enumeration of the identified student groups. Among the four programs, the course program D comprised the largest group with 51 students, accounting for 29.82% of the total population. This was closely followed by the course program C with 50 respondents (29.24%). The course program A represented 27.49% of the sample with 47 students, while the course program B constituted the smallest segment of the group, with 23 respondents making up 13.45% of the total.

Research Instruments

This study utilized two main gathering tools: a survey questionnaire and a researcher-made test questionnaire. Each data-gathering tool was discussed in this section in a detailed description.

Survey Questionnaire. This research instrument was utilized to determine the physical activity challenges that hinder students from engaging in physical activity along with content knowledge, learning environment, physiological adaptation and motivation and engagement. Below are the parts of the survey questionnaire that will be used. There will be a front page as the approved letter to conduct the study and the heading that includes the information about the study also the The Data Privacy Act of 2012 (Republic Act 10173). Part I is the profiling of the respondents that includes name, age, course and section. The instructions in answering the research instrument. Parts II, III, IV and V were the survey proper with ten indicators each for content knowledge, learning environment, physiological adaptation, and motivation and engagement, respectively.

A pilot testing was conducted in Bachelor of Science in Entrepreneurship major in Manufacturing and Service Technology in Bicol State College of Applied Sciences and Technology to ensure the validity of the survey questionnaire. The researcher conducted the survey to first year college students taking Physical Activity Towards Health and Fitness courses in the first semester school year 2025-2026. A group of Professional Physical Education Teachers in BISCASAT validated the content of the instrument. The results show a Cronbach's alpha of 0.964, indicating strong internal consistency across the full instrument. Each aspect was evaluated using a 4-point Likert Scale. 4 as Very Highly Challenged, 3 as Highly Challenged, 2 as Moderately Challenged and 1 as Fairly Challenged. A Four-point Likert Scale will be used to determine the result on the challenges that hinder students from engaging in physical activity. The survey was conducted and retrieved in BISCASAT to first year college students handled by the researcher. According to Bauman et al. (2012), physical activity is influenced by a complex synergy of individual,

social, and environmental factors. By categorizing challenges into distinct domains, this instrument aligns with the socio-ecological model of health behavior, ensuring a comprehensive assessment of barriers.

Teacher-made test. This research instrument was used to determine the Movement Competency Training performance of the students. A 40-item test consisting of the parameters, physical fitness, locomotor and non-locomotor exercises, basic resistance movement training pattern and healthy eating habits. The test is a multiple choice test with 10 items in each competency covered as course outcome in CMO 39, s. 2021. The researcher-made test was validated by the experts to ensure effectiveness and validity. A pilot testing was conducted in Bachelor of Science in Entrepreneurship major in Manufacturing and Service Technology in Bicol State College of Applied Sciences and Technology to ensure the validity of the survey questionnaire. Research by Giblin, Collins, and Button (2014) emphasizes that movement competency is a foundational element for lifelong physical activity; therefore, measuring cognitive understanding of these movements is vital for assessing overall physical literacy. The researcher-made test underwent a rigorous item analysis to ensure its psychometric integrity. Out of the 40 items evaluated, the majority were deemed high-quality, with 24 items being Retained and 7 items requiring Modification. The remaining 9 items were scheduled for Change due to poor performance. In terms of the Discrimination Index, the test demonstrated strong efficacy in distinguishing student performance, as 21 items were classified as "Very Good" and 3 as "Good". However, the Difficulty Index revealed that the instrument leaned toward being accessible, with 32 items falling in the Average range and 8 categorized as Very Easy, with no items found to be "Difficult". Despite these variations in individual items, the overall test analysis yielded impressive results: the KR21 coefficient of 0.820 indicates Acceptable Reliability, while the Rwt of 0.901 and Vwt of 0.949 confirm that the instrument possesses Very Reliable Questions and Very High Validity, respectively.

Procedures of Investigation

The realization of this study followed the following procedure of investigation so that the goal of the study will be obtained.

Preparation of the Research Instruments. After the approval of the research problem, the researcher crafted the questionnaire. The researcher sought the approval of the adviser regarding the content and format of the instrument.

Validation and Dry Run of the Research Instruments. The researcher planned and organized a dry run session for the survey questionnaire, setting specific objectives and timelines. This involved the selection of a sample group that was non-representative of the target respondents of the study. The dry run helped the researcher identify challenges that influenced the movement competency training performance of the students. Feedback was sought from students on the appropriateness and accuracy of the questionnaire and checklist content. Validators checked for potential ambiguities, factual errors, or misleading wording within the instrument. The researcher focused on ensuring that the questionnaire and checklist accurately measured what they intended to measure.

Administration of Research Instruments. After the validation, suggestions, and revisions of the survey questionnaire and the researcher-made test, the researcher administered the instruments to the

participants of the study. The administration was conducted on December 10, 2025, and the tools were retrieved on the same day.

Data Gathering and Analyses. The researcher administered the finalized data-gathering tools to each of the respondents. Data and information from the respondents were collected and recorded accordingly. This administration helped the researcher establish a baseline measure of the students, which was used in designing the intended output of the study before it was applied to the teaching-learning process. The researcher retrieved the data-gathering tools personally from the respondents; immediately after the survey questionnaire and researcher-made test were answered, they were collected by the researcher. Finally, the data were tallied and scored using an Excel file for statistical purposes.

Ethical Considerations

In the conduct of this research, strictly adhering to ethical standards was a primary priority to ensure the integrity of the process and the protection of all involved parties. The study was guided by the principles of respect for persons, beneficence, and justice, ensuring that no harm physical, psychological, or social befell the participants. These ethical considerations served as the foundation for establishing trust between the researcher and the respondents at Bicol State College of Applied Sciences and Technology (BISCAST).

Transparency. The researcher secured informed consent and student assent from all participants prior to the commencement of data collection. Each respondent was provided with a clear explanation of the study's objectives, the nature of their involvement, and the voluntary nature of their participation. They were explicitly informed of their right to withdraw from the study at any time without penalty, ensuring that their contribution was made with full knowledge and without any form of coercion.

Student Assent. For respondents who were under the legal age of majority or where institutional policy required additional layers of agreement, student assent was obtained. This process ensured that the younger participants understood the research in simplified terms and could express their willingness to participate alongside the formal consent of their guardians or the institution. By prioritizing student assent, the researcher demonstrated respect for the students' autonomy and their right to be heard throughout the research process.

Generative AI. ChatGPT (OpenAI) and Google Gemini, introduced specific ethical considerations concerning data integrity, authorship, and intellectual accountability. Google Gemini served as a digital tool for making concepts related to movement competency training, while ChatGPT assisted in framing ideas for clarity. To maintain ethical standards, the researcher conducted rigorous verification of all AI-assisted outputs to prevent bias or overreliance on algorithms. The researcher assumed full authorship responsibility, ensuring that AI tools enhanced but did not replace human judgment, reasoning, or original analysis.

Confidentiality. The researcher maintained the highest level of confidentiality and anonymity for all respondents. Personal identifiers were removed from the data during the analysis and reporting stages to ensure that individual responses could not be traced back to specific students. All collected data,

including survey results and test scores, were stored securely in password-protected files and were accessible only to the researcher for the sole purpose of this study.

Data Analysis Technique

The following statistical tools were used in this study and computations will be done using electronic software.

Frequency Count. This tool was employed to determine the specific number of respondents belonging to each category of the demographic profile, such as age, sex, and year level. Christou (2025) emphasizes that frequency counts remain a fundamental starting point in quantitative analysis to provide a structural overview of the sample before moving into more complex thematic or inferential interpretations.

Percentage Technique. This was used to determine the relative proportion of the frequency distribution, providing a standardized basis for comparing demographic characteristics across the student population. Rajh-Weber et al. (2025) highlight that the use of percentages is essential for mapping methodological and demographic trends, allowing researchers to foster a clearer understanding of how specific sub-groups are represented within a larger data set.

Weighted Mean (WM). The Weighted Mean was used to calculate the average scores for various aspects related to the level of challenges that hinder the students' engagement in physical activity including content knowledge, learning environment, physiological adaptation, and motivation and engagement. Aubert et al. (2018) utilized means to evaluate global physical activity "Report Card" grades across 49 countries, establishing baseline benchmarks for adolescent physical competence.

Mean. The Mean was used to determine the mean scores on the level of movement competency training performance in terms of physical fitness, locomotor and non-locomotor exercises, basic resistance training movement pattern, and healthy eating habits. Choi & Lee (2022) applied means and standard deviations to develop evaluation standards for physical activity competence, specifically for measuring fundamental movement skills and health-related fitness.

Standard Deviation. The Standard Deviation was used to determine the measure of the dispersion or spread of data points in the gathered numerical data around the average scores and mean scores. Moullec et al. (2023) emphasized the use of SD to determine the variability in physical literacy scores (CAPL-2) among adolescents during a 9-month intervention. Sideridis & Alamri (2023) used SD to analyze the variability in student achievement and physical activity regularity, noting how spread-out performance data influenced educational outcomes.

Performance Level. The Performance Level was used to determine the equivalent numerical grade and remarks. There are 30% of equivalent grades in examinations. $(\text{Raw Score}/40\text{-item}) \times 100$. Lynch et al. (2024) highlighted the importance of multi-component assessment rubrics in Physical Education to accurately reflect a student's holistic physical competence and engagement levels beyond simple attendance.

Chi-square (χ^2) Test of Independence. This was used to determine if there is a significant association between categorical variables. Gow et al. (2016) provided a detailed methodological review of the Chi-square test, highlighting its robustness in analyzing associations between categorical variables in educational settings. Ghimire (2025) utilized the Chi-square test to explore the significant link between gender and digital resource usage, demonstrating its effectiveness in identifying disparities in educational access.

Pearson Product-Moment Correlation Coefficient. The Pearson Product Moment Correlation Coefficient (r) was utilized to determine the relationship between challenges and movement competency training performance of the students. Metsämuuronen (2022) highlighted the widespread applicability of Pearson's r in academic works, noting it as the primary tool for measuring linear associations between two continuous variables. Humphreys et al. (2018) analyzed the precision of Pearson's r in ecological and behavioral studies, reinforcing its status as the classical measure for correlation in observational research.

Coefficient of Determination. The Coefficient of Determination was employed to determine the extent of influence of challenges to movement competency training performance of the students. Pei et al. (2023) applied regression models and R^2 to evaluate how much variance in student physical fitness scores could be explained by specific behavioral and environmental factors. Aburizaizah et al. (2019) reported that R^2 was critical in determining that two-thirds of the variability in student achievement was linked to specific institutional-level variables rather than individual student traits.

ADDIE Model. The study utilized a modified ADDIE model, focusing exclusively on the Analysis, Design, and Development phases to create the lesson guide. Mappadang et al. (2022) discussed the importance of the Analysis phase in identifying "academic interest" as a determining factor for performance before developing instructional interventions. Oteng et al. (2023) emphasized the Design and Development stages in ensuring that curriculum content standards meet the specific challenging situations faced by students in the modern learning environment.

Demographic Profile of the Students

The demographic profile of students was one of the variables of this research, including course, age, and sex. There were 171 total students that were chosen as the main respondents in 4 different course programs handled by the researcher. This study also determined the age of the students that took Movement Competency Training and their biological sex between male and female. This data gathered was vital for analysing the influence of demographic profile of the students on challenges in physical activity and on Movement Competency Training performance, presented in table 2.

This section presents the demographic profile of the students according to their course programs. There were 4 course programs A, B, C, and D accordingly. This study determined how their field of study influences their movement competency training performance. The objective of profiling by course was that specific academic practices and school works can directly impact their performance in Movement Competency Training of the students.

Course. Shows the distribution of students across four course programs, with course program D with 51 students (29.82%), course program C with 50 students (29.24%), course program A with 47 students (27.49%), course program B with 23 students (13.45%), with the total of 171 students.

Table 2
Demographic Profile of Students

Course	Age			Sex		Frequency	Percentage
	≤ 19	20 to 24	≥ 25	M	F		
A	41	5	1	16	31	47	27.49
B	16	7	0	20	3	23	13.45
C	38	11	1	16	34	50	29.24
D	48	3	0	39	12	51	29.82
Total	143	26	2	91	80	171	100
Percentage	83.63	15.20	0.58	53.22	46.78	100	

The data indicates a balanced group of respondents across three programs, with course program B with a small number of students among the course programs. The nearly equal number of students in course programs A, C, and D, suggests a broad enrollment across these course programs, while with the smaller number of students in course program B could influence analyses that depend on program size. This may suggest stratified or targeted sampling considerations.

The number of students was distributed evenly among course programs A, C, and D, with course program B with a small number of students, which has implications in the level of programs on comparisons. For data analyses, consider presenting specific programs results alongside overall findings and using stratified analyses for the unequal group sizes. If course program effects are because of interest, sample sizes and intervals by program to ensure transparency and interpretation. Future data collection could aim to support representation in course program B, to achieve a more balanced respondents across these programs.

These results are linked to the studies of Li et al. (2021) and Frank et al. (2021), who observed that students in different academic majors exhibit varying levels of physical activity challenges, suggesting that academic engagement results in physical activity outcomes. The findings are supported by Vainshelboim et al. (2019) and Thompson et al. (2023). Research describes how academic burden and class scheduling create challenges to students, affecting fitness facilities accessibility.

These results align with the Social Cognitive Theory, as a student's academic environment serves as a primary social context that shapes their self-efficacy. Theory of Planned Behavior, where the rigors of a specific course can weaken a student's perceived behavioral control over their exercise routine; and the Self-Determination Theory, which posits that a demanding academic culture can undermine intrinsic motivation if it does not support a student's need for autonomy and balance. The Attribution Theory explains how the perception of students about the causes of their success or failure, whether they extend much effort, determine difficulty of tasks, and directly determine their motivation within the course program.

This section presents the age distribution of first-year college students who participated in the study. The objective for profiling by age is to identify the developmental stage of the students. This determined their baseline physical capacity to movement competency training. Age is an important factor in physiological adaptation and content knowledge. The data were gathered through a survey questionnaire and analyzed using frequency and percentage distribution to establish the primary age concentration.

Age. Shows the demographic profile of the students along age. The respondents were primarily composed of college students, with a significant 83.63% (n=143) aged 19 or below and only a marginal 0.58% (n=2) aged 25 or older. In this study, course program D holds the highest percentage of students at 29.82%, followed closely by course program C (29.24%) and course program A (27.49%), while course program B represents the smallest number of students at just 13.45%.

The respondents were dominated by younger students, particularly 18 and 19 years old. Limited representation at older ages, which should be considered when generalizing findings to a broader student population. Age is a key variable in subsequent analyses, stratified by age groups. The underrepresentation of older ages reflected the course program admission pattern, data collection aims for a more balanced age distribution to enhance generalizability of the data.

These results are linked to the studies of Small et al. (2017) and Silva et al. (2022). They identified this age as a high-risk freshman transition period for physical activity decline. As well as Largoza et al. (2021) and Lagman et al. (2022). They emphasize that Filipino youth in this age bracket face significant challenges in meeting physical activity standards.

These findings align with Social Cognitive Theory, at their young age, self-efficacy of students is highly affected by new physical activity challenges. The Theory of Planned Behavior, where transitional life changes affect perceived behavioral control. Self-Determination Theory, which highlights that in this age group there was a need for relatedness, it is a primary driver for sustaining the intrinsic motivation necessary for movement competency. Attribution theory suggests that as students progress through different age groups, their interpretation of success and failure in Movement Competency Training shifts from a focus on effort to a more complex evaluation of physical ability.

This section presents the sex distribution of the students. Provided a foundational understanding of the gender balance within the Movement Competency Training. The objective for profiling by sex was that gender can influence baseline physical capacity and challenges in physical activities. All of which shape the experience of students in Movement Competency Training.

Sex. Presents the sex distribution of the students. While the overall sex distribution is relatively balanced consisting of 53.22% males (n=91) and 46.78% females (n=80) notable gender disparities exist across specific academic course programs. For instance, course programs B and D were heavily male-dominated, whereas course programs A and C show a higher female representation.

The near-equal representation of male and female participants in this study provided a foundation. It ensured that the analysis of Movement Competency Training and challenges in physical activity was balanced and inclusive. By maintaining this parity, the research minimizes the risk of gender biased analysis. Allowing the findings to more accurately reflect the general student population rather than the specific physical or psychological tendencies of a single dominant group.

The gathered data achieves a fairly balanced gender mix. This was suitable for analyses that compare outcomes by sex without substantial sampling bias from gender. Gender is a key variable in physical activity interest. Consider reporting effect sizes for sex-related differences and conducting stratified analyses to explore whether relationships differ by gender.

These results are linked to the studies of Alnofaiey et al. (2023) and Pila et al. (2020). They discuss how psychological barriers and exercise anxiety can manifest differently across genders. As well as Barkley et al. (2020) and Li and Shi (2021). They emphasize that a balanced gender environment was crucial for mitigating social challenges and ensuring inclusive physical education outcomes.

These findings align with Social Cognitive Theory, as a balanced sex distribution provides diverse social modeling that bolsters self-efficacy. The Theory of Planned Behavior, where gender-balanced peer influence shapes normative beliefs and exercise intentions. Self-Determination Theory, which posits that a diverse and inclusive social environment fulfills the need for relatedness, thereby sustaining the intrinsic motivation necessary for mastery in movement competency. Attribution Theory suggests that sex distribution plays a significant role in how students perceive their physical activity performance, as societal expectations often influence whether males and females attribute their success or failure in Movement Competency Training.

Movement Competency Training Performance of Students

Movement Competency Training aims to develop the fundamental movement patterns essential for both athletic performance and daily functional living. The performance of students in this variable reflects their mastery of essential knowledge such as in physical fitness, locomotor and non-locomotor, basic resistance training movement patterns which, and healthy eating habits were necessary to execute physical tasks safely and efficiently.

Table 3, presents the Level of Movement Competency Training of Students across four key domains, with an overall mean of 23.63 and a Proficiency Level of 83.63, which is interpreted as “Good”. Among the competencies, Physical Fitness achieved the highest score with a mean of 6.83, Proficiency Level of 87.32, interpreted as “Very Good”. This is followed by Healthy Eating Habits with a mean of 5.90, Performance Level of 83.6 and Locomotor and Non-locomotor Exercises with a mean of 5.87, Proficiency Level of 83.46, both interpreted as “Good”. The lowest-performing area is Basic Resistance Training Movement Pattern, which obtained a mean of 5.04, Proficiency Level of 80.14, interpreted as “Fair”.

Table 3
Level of Movement Competency Training Performance of Students

Competencies	N	Mean	SD	PL	Interpretation
Physical Fitness	10	6.83	1.87	87.32	VG
Locomotor and Non-locomotor Exercises	10	5.87	1.93	83.46	G
Basic Resistance Training Movement Pattern	10	5.04	2.07	80.14	Fr
Healthy Eating Habits	10	5.90	1.96	83.60	G
Overall	40	23.63	5.67	83.63	Good

Note. N refers to Number of Items, SD refers to Standard Deviation, PL refers to Performance Level, and Int refers to Interpretation. Thus, the interpretation values are based on the following ranges: 97 to 100 is Excellent (E); 92 to 96 is Superior (S); 87 to 91 Very Good (VG); 81 to 86 is Good (G), 76 to 80 is Fair (Fr), 75 is Pass (P), and 75 below is Failed (F).

The results indicate that while students possess a generally solid foundation in movement competency, there is a clear disparity between their theoretical fitness levels and their technical resistance training skills. The Very Good rating in Physical Fitness suggests that students have a strong baseline of general health and body awareness. However, the drop to a Fair rating in Basic Resistance Training indicates a lack of proficiency in specialized, weighted, or complex movement patterns. This suggests that while students are capable of general activity, they struggle when required to perform movements that involve structural loading or specific technical mechanics, highlighting a need for more focused instructional intervention in resistance-based training.

The inference drawn from this table is that student competency is currently skewed toward general wellness rather than specialized physical skill sets. The discrepancy between Physical Fitness and Resistance Training implies that students are likely more comfortable with traditional cardiovascular or aerobic activities than they are with strength-building modalities. This proficiency gap in resistance training is significant, as it indicates a potential weakness in long-term musculoskeletal health and metabolic optimization. It suggests that the current curriculum may be successful in promoting general activity but is less effective in equipping students with the technical mastery needed for diverse and advanced forms of exercise.

These findings align with existing research on the gaps between general health awareness and practical physical skill. The high proficiency in physical fitness supports the observations of Dizon et al. (2022) and Llana-Bello et al. (2020), who link consistent physical activity (PA) to tangible baseline

cardiorespiratory improvements. However, the Fair performance in resistance training reflects the concerns of Mendizabal-Gomez et al. (2022) regarding the critical gap between body awareness knowledge and actual movement control. The overall standing is specific technical weaknesses echo the intention-behavior gap discussed by Rhodes et al. (2017) and Miller et al. (2024), where students may understand the value of exercise but lack the specific self-regulatory skills and technical competence to implement complex training routines effectively.

These findings align with Social Cognitive Theory. As the technical difficulty of resistance training can undermine a student's self-efficacy if they lack proper instructional feedback. The Theory of Planned Behavior, where low performance in complex movements weakens perceived behavioral control. Self-Determination Theory, which suggests that unless students feel a sense of competence in these foundational patterns, they are unlikely to maintain the intrinsic motivation necessary for sustained movement competency. Attribution Theory, explains the direct influences how a student processes the physical feedback from their body during complex motor tasks.

Level of Challenges in Physical Activity of Students

In Movement Competency Training, students face significant challenges in mastering content knowledge and overcoming restrictive learning environments. These challenges are often compounded by the slow pace of physiological adaptation, which can delay visible progress and overall motivation and engagement.

Content Knowledge. Table 4a details the levels of challenges students face regarding physical activity content knowledge, showing an overall average weighted mean of 2.02, which falls under the "Moderately Challenged" interpretation. The highest-ranked challenge is exercise programming knowledge for workout effectiveness weighted mean of 2.19, followed closely by the ability to identify how to progress or regress movement execution weighted mean of 2.17 and core stability exercise performance makes learning or performance enjoyable weighted mean of 2.13. The indicators receiving the lowest challenge ratings are knowledge about proper warm-up and cool-down weighted mean of 1.77 and understanding long-term health benefits Weighted Mean of 1.83, though both remain within the "Moderately Challenged" level.

Table 4a

Level of Challenges in Physical Activity of Students along Content Knowledge

Indicators	WM	Int	Rank
Knowledge about the proper performance activation or			
warm-up and cool down exercises.	1.77	MC	10
The correct technique or body movement pattern exercises.	2.12	MC	4
Awareness about safety and injury prevention in	1.96	MC	7

every

movement specific performance.

**Understanding the strategies of various movement
pattern exercises.**

1.98 MC 6

**Identify how to progress or regress movement
execution that fits the capacity to perform.**

2.17 MC 2

Awareness of various exercise equipment utilization.

1.92 MC 8

**Exercise programming knowledge makes a better
result**

of workout effectiveness.

2.19 MC 1

**Understanding the long-term health benefits of
different types of physical activity.**

1.83 MC 9

**Knowledge about core stability exercise performance
makes learning or performance enjoyable.**

2.13 MC 3

**Monitoring fitness level is a form of pattern
assessment**

or evaluation.

2.10 MC 5

Average WM 2.02 Moderately Challenged

Note. WM refers to Weighted Mean and interpreted (Int.). The interpretation is based from: 3.26 to 4.00 as Very Highly Challenge (VHC); 2.51 to 3.25 as Highly Challenge (HC); 1.76 to 2.50 as Moderately Challenge (MC); and 1.00 to 1.75 as Fairly Challenge (FC).

These findings reveal that while students have a baseline understanding of basic fitness concepts like warming up, they struggle significantly with the technical and tactical application of exercise. The clustering of Moderately Challenged interpretations across all ten indicators suggests a consistent deficit in specialized fitness literacy. Specifically, the high Weighted Mean for exercise programming and movement progression/regression indicates that students lack the autonomy to design or adjust their own fitness routines independently, even if they understand the general importance of being active.

These results imply that students possess knowledge of content but lack practical mastery. While they know they should exercise for health, they are hindered by a lack of self-regulation and technical expertise required to sustain a routine. The difficulty in progressing or regressing movements suggests a high risk for injury or stagnation, which can lead to a loss of motivation. Essentially, the data suggests that the Moderately Challenged status is an explanation that students may want to be active but are stopped by the cognitive burden of not knowing exactly how to train effectively for their specific needs.

These provides a direct and robust alignment with the studies established by Rhodes et al. (2017) and Miller et al. (2024), both of whom contend that elevated health literacy is an insufficient driver of behavioral change if students lack the requisite self-regulation and executive function skills to bridge the gap between knowledge and action. Specifically, the participants’ documented struggle with movement execution serves as a quantitative mirror to the findings of Mendizabal-Gomez et al. (2022), who identified a pervasive disconnect between theoretical body awareness and actualized postural behavior, suggesting that intellectual understanding does not naturally confer kinesthetic competence. This deficit is further exacerbated by the moderate difficulty students face in fitness programming, a challenge that highlights the detrimental impact of the hidden curriculum. By disproportionately prioritizing academic and sedentary milestones over holistic well-being, institutions inadvertently force students into a state of temporal poverty, where a lack of time and practical life skills makes consistent fitness management nearly impossible.

These results are further supported by Social Cognitive Theory, which suggests that low self-efficacy in technical areas like programming leads to decreased effort when tasks become complex; the Theory of Planned Behavior, where a lack of specialized knowledge weakens a student’s perceived behavioral control over their fitness outcomes; and Self-Determination Theory, which posits that a lack of technical mastery undermines the psychological need for "competence," eroding the intrinsic motivation required for long-term movement competency.

Learning Environment. Table 4b displays the challenges students face regarding their learning environment, yielding an average weighted mean of 2.20, which falls under the “Moderately Challenged” interpretation. The most significant barrier identified is environmental factors such as “extreme heat, cold, or rain”, which earned the highest weighted mean of 2.56 and a “Highly Challenged” interpretation. Other notable high-ranking challenges include “unfavorable transportation to and from campus” weighted mean of 2.50 and the “lack of standard equipment and facilities provided by the institution” weighted mean of 2.39. The lowest-ranked challenges are class scheduling, which students perceive as less restrictive, functionality of equipment, and enough space for physical activity with a weighted mean of 1.83 and 2.01.

Table 4b

Level of Challenges in Physical Activity of Students along Learning Environment

Indicators	WM	Int	Rank
Adequate or safe facilities is a challenge.	2.10	MC	7
The functionality of equipment for physical activity.	2.01	MC	8.5
Accessibility of physical activity spaces.	2.22	MC	5
Class scheduling for PATHFit class is an implementation of diverse usage of spaces.	1.83	MC	10

Environmental factors like extreme heat, cold, or rain are some bases for participation rate.	2.56	HC	1
The learning environment provides enough space for a safe practice execution of movement pattern performance.	2.01	MC	8.5
The location of the campus is favorable from my station.	2.28	MC	4
The institution provides standard needed equipment and facility.	2.39	MC	3
Transportation to and from campus is favorable.	2.50	MC	2
The spaces (open space, hall, fields, fitness assessment area etc.) in the campus are accessible.	2.13	MC	6

Average WM 2.20 Moderately Challenged

Note. WM refers to Weighted Mean and interpreted (Int.). The interpretation is based from: 3.26 to 4.00 as Very Highly Challenge (VHC); 2.51 to 3.25 as Highly Challenge (HC); 1.76 to 2.50 as Moderately Challenge (MC); and 1.00 to 1.75 as Fairly Challenge (FC).

The data analysis indicates that the physical and external environment acts as a more substantial deterrent to physical activity than institutional scheduling. The environmental factors suggest that participation of students is heavily dictated by external conditions they cannot control, such as the climate. The relatively high means for transportation and equipment provision suggest that the status is pushed toward the higher end of the scale by logistical and infrastructural gaps rather than just a lack of physical space. This indicates that even if a student is motivated, the friction caused by commuting and substandard resources creates a significant hurdle to consistent engagement. From these results, it can be inferred that the college physical infrastructure and geographic context are not fully optimized for student wellness.

The shift implies a lack of adequate indoor or climate-controlled facilities, forcing students to rely on outdoor spaces that become unusable during extreme weather. The findings also imply a logistical burden where the effort required to reach campus or find proper equipment may outweigh the perceived benefits of the activity itself. The learning environment currently presents a passive resistance to physical activity, where the lack of a supportive physical ecosystem undermines students' intent to remain active.

The findings of this study offer a compelling resonance with existing literature centered on the Philippine socio-economic landscape, particularly mirroring regional assessments in Northern Mindanao

and the Bicol Region that consistently highlight a chronic deficit in specialized equipment and restrictive budgetary allocations for sports development. The acute difficulty posed by extreme weather conditions serves as a critical empirical validation of the observations made by Phongsavan et al. (2019) and Tan and Lee (2024), who argue that the unique The Association of Southeast Asian Nations climate characterized by intense heat and unpredictable tropical precipitation acts as a formidable barrier to outdoor physical activity when not offset by adequate, climate-controlled indoor infrastructure. This environmental constraint is further compounded by significant logistical hurdles involving transportation inefficiencies and substandard facility maintenance, which directly align with the spatial analysis of Cayaban et al. (2023) and the global urban health frameworks of Sallis et al. (2016).

These researchers identify campus walkability and the proximity of residential zones to athletic hubs as primary determinants of student engagement levels. The data underscores a profound disconnect within the institutional framework, while students possess the intrinsic motivation for wellness as evidenced by the high scores the opportunity afforded by the physical and systemic environment remains a glaring gap, suggesting that personal willpower is frequently nullified by the structural inadequacies of the campus ecosystem.

These findings align with Social Cognitive Theory. Which posits that environmental barriers can directly undermine a student's self-efficacy and subsequent behavioral outcomes. The Theory of Planned Behavior, where a lack of accessible facilities weakens perceived behavioral control. Self-Determination Theory, which suggests that an unsupportive or inaccessible learning environment can frustrate the basic psychological need for competence, thereby diminishing the intrinsic motivation necessary for sustained movement competency.

Physiological Adaptation. Table 4c presents the level of challenges in physical activity of students regarding physiological adaptation, with an average weighted mean of 2.22, which corresponds to an interpretation of "Moderately Challenged". The data reveals that "Stamina and endurance" weighted mean of 2.39 and "Optimization of energy distribution" weighted mean of 2.38, followed by "feedback in body exertion" weighted mean of 2.34, are the top three ranked indicators, suggesting these are the most significant physiological challenges for students. In contrast, "Physical activities

Table 4c

Level of Challenges in Physical Activity of Students along Physiological Adaptation

Indicators	WM	Int	Rank
Stamina and endurance are active areas for development and growth that allows sustained engagement.	2.39	MC	1
The body provides clear feedback regarding exertion, indicating the current need for intensity management and recovery.	2.34	MC	3

Balancing the high energy demands required for exercise recovery.	2.18	MC	6.5
Designing exercise programs that stimulate the optimal hormonal response for muscle growth and bone density.	2.23	MC	5
Transitioning from prolonged sedentary behaviors.	2.25	MC	4
Physical activities include effective injury prevention training.	2.04	MC	10
Health management is an ongoing priority that guides the selection of safe, beneficial, and adapted activities.	2.05	MC	9
Activities are chosen with an emphasis on skill acquisition and competence building, ensuring a focus on personal improvement.	2.18	MC	6.5
The optimization of energy distribution across all daily demands are essential for overall well-being.	2.38	MC	2
The importance of prioritizing foundational recovery practices to maximize vitality.	2.13	MC	8

Average WM 2.22 Moderately Challenged

Note. WM refers to Weighted Mean and interpreted (Int). The interpretation is based from: 3.26 to 4.00 as Very Highly Challenge (VHC); 2.51 to 3.25 as Highly Challenge (HC); 1.76 to 2.50 as Moderately Challenge (MC); and 1.00 to 1.75 as Fairly Challenge (FC).

include effective injury prevention training" weighted mean of 2.04 and "Health management as an ongoing priority" weighted mean of 2.05 are ranked lowest, though they remain within the "Moderately Challenged" range. All ten indicators consistently fall between 2.04 and 2.39, reflecting a uniform level of moderate difficulty across all physiological metrics surveyed.

The interpretation of these results suggests that while students are not experiencing an overwhelming physical crisis, they are facing a consistent struggle to align their bodily capabilities with the demands of active living. This indicates that the transition from sedentary lifestyles to active engagement is met with internal resistance, primarily in the form of low physical capacity (stamina) and poor metabolic resource management (energy distribution). The fact that energy distribution is ranked

second suggests that students find it difficult to balance the high metabolic cost of exercise with the demanding energy requirements of their daily academic responsibilities. This creates a physiological bottleneck where students may have the desire to be active but are limited by a body that is not yet conditioned for sustained physical exertion or efficient recovery.

Students are likely suffering from a fitness-energy deficit exacerbated by the academic environment. Because "stamina and endurance" is the leading challenge, it is evident that the loss of structured physical activity often seen during the transition from high school to college has led to a decline in baseline cardiorespiratory health. The high concern over "energy distribution" implies that students perceive physical activity not as a source of energy, but as a drain on their limited reserves needed for studying. This suggests that without institutional intervention to gradually build student stamina and provide better recovery education, students will continue to perceive physical activity as a physiological burden rather than a health benefit.

These findings are connected in recent research regarding student wellness and physiological barriers. The struggle with stamina and the need for internalized exercise values are supported by Dizon et al. (2022) and Llana-Bello et al. (2020), who link consistent physical activity to necessary improvements in cardiorespiratory fitness and muscular endurance. The challenge of managing energy amidst academic pressure is reflected in the work of Vainshelboim et al. (2019) and Thompson et al. (2023), who describe temporal poverty where heavy credit loads render gym access irrelevant due to physical and mental exhaustion. The difficulty in transitioning from sedentary behaviors is corroborated by Lopez and Mendoza (2025) and Tan et al. (2024), who identify sedentary behavior as a primary predictor of metabolic syndrome in the Philippine context. Finally, the overarching moderate challenge to physiological adaptation aligns with Rhodes et al. (2017) and Miller et al. (2024), who observe that students often possess the literacy regarding exercise benefits but lack the self-regulation and physical conditioning to bridge the intention-behavior gap.

These findings align with Social Cognitive Theory. As the physical discomfort of low stamina can diminish a student's self-efficacy, leading them to view training as a threat rather than a task to be mastered. The Theory of Planned Behavior, where the lack of energy for recovery weakens perceived behavioral control and creates an intention-behavior gap. Self-Determination Theory, which suggests that when physical capacity is low, students struggle to achieve a sense of competence, causing the activity to lose its internal value and diminishing the intrinsic motivation necessary for sustained movement competency.

Motivation and Engagement. Table 4d presents that students are "Moderately Challenged" regarding the motivational aspects of physical activity, with an average weighted mean of 1.90. The most significant challenge identified is "Core stability exercises such as motivating engagement in class," which earned the highest rank with a weighted mean of 2.13, followed by "Inner drive to push through practical performance" at a weighted mean of 1.95, followed by "physical activities motivates engagement with weighted mean of 1.94. The indicator "The activities offered are interesting or fun" received the lowest score of 1.74, placing it in the "Fairly Challenged" level, while "The class situation is open for social support" also ranked low with a weighted mean of 1.79. All other indicators, including goal setting and technology exposure, fall within the "Moderately Challenged" range between 1.80 and 1.94.

The data suggests that while students generally find the activities fun or interesting (as indicated by the lower FC score), they struggle significantly with the internal drive and specific exercise modalities required to sustain participation. The high rank of core stability exercises as a challenge implies that technical or physically demanding components of the curriculum may act as psychological barriers to engagement. The cluster of means around the 1.90 mark indicates a persistent, moderate struggle with maintaining consistent motivation and envisioning the long-term relevance of these activities to their future goals. The lower score for social support suggests that while the environment is somewhat inviting, it is not yet powerful enough to overcome the internal hurdles of inner drive and persistence.

Table 4d

Level of Challenges in Physical Activity of Students along Motivation and Engagement

Indicators	WM	Int	Rank
The activities offered are interesting or fun that motivates participation.	1.74	FC	10
Motivation to start or continue a physical activity.	1.80	MC	8
The physical activities motivates engagement.	1.94	MC	3
The class situation is open for social support.	1.79	MC	9
Envision of the relevance of physical activities to my future life or goals.	1.92	MC	5
Technology exposure sets inspiration for participation in movement competency training.	1.93	MC	4
Goal setting is part of an introductory topic in PATHFit			
1.	1.91	MC	6
Core stability exercises such as motivates engagement in class.	2.13	MC	1
Inner drive to push through the practical performance of specific movement inspires to promote endurance.	1.95	MC	2
Immediate, tangible rewards or positive reinforcement	1.90	MC	7

served as inspiration to achieve a fitness goal.

Average WM 1.90 Moderately Challenged

Note. WM refers to Weighted Mean and interpreted (Int.). The interpretation is based from: 3.26 to 4.00 as Very Highly Challenge (VHC); 2.51 to 3.25 as Highly Challenge (HC); 1.76 to 2.50 as Moderately Challenge (MC); and 1.00 to 1.75 as Fairly Challenge (FC).

The inference drawn from these results is that students are experiencing a motivation-execution gap where the initial interest in physical activity does not effectively translate into long-term commitment or endurance. The difficulty with inner drive and core stability suggests that when the physical demand increases or requires high levels of self-discipline, students' psychological resilience wavers. This indicates that college physical education programs may need to shift focus from merely providing fun activities to actively building psychological grit and self-regulation skills. Without these internal competencies, students remain susceptible to academic stress and temporal poverty, leading them to deprioritize physical activity when coursework becomes demanding.

These findings are closely aligned with existing literature on student behavior and psychological mediators. The struggle with inner drive and self-regulation reflects the intention-behavior gap noted by Rhodes et al. (2017) and Miller et al. (2024), who argue that literacy about health benefits does not automatically lead to routine implementation. The importance of overcoming exercise anxiety and the fear of judgment is echoed by Pila et al. (2020) and Zhao et al. (2026), whose research suggests that the psychological "accessibility" of a workout is often more critical than the physical facility itself. The role of social support as a potential but underutilized mediator is supported by Mazzoni et al. (2021) and Williams and Jones (2024), who emphasize that peer-group culture can either override or enhance institutional facilities. Finally, the need for inclusive pedagogy to prevent students from withdrawing due to perceived low competence is a key theme in the work of Barkley et al. (2020) and O'Neil et al. (2026).

These findings align with Social Cognitive Theory. A lack of inner drive can be a manifestation of low self-efficacy in overcoming perceived barriers. The Theory of Planned Behavior, where weak internal motivation diminishes the perceived behavioral control necessary to maintain an active lifestyle. Self-Determination Theory, which emphasizes that for students to sustain movement competency, the activities must be perceived as interesting or fun to foster the intrinsic motivation required for long-term engagement.

Challenges in Physical Activity of Students. Table 4e presents the consolidated results of the challenges faced by students across four key aspects, showing an overall status of "Moderately Challenged" for all categories. Physiological Adaptation emerges as the primary challenge with the highest average weighted mean of 2.22, closely followed by the Learning Environment at 2.20. Content Knowledge holds the third rank with an average weighted mean of 2.02, while Motivation and Engagement is identified as the least challenging aspect among the four, though it remains in the "Moderately Challenged" range with an average weighted mean of 1.90.

Table 4e

Level of Challenges in Physical Activity of Students

Aspects	AWM	Int	Rank
Content Knowledge	2.02	MC	3
Learning Environment	2.20	MC	2
Physiological Adaptation	2.22	MC	1
Motivation and Engagement	1.90	MC	4

Average WM 2.09 Moderately Challenged

Note. AWM refers to Average Weighted Mean and interpreted (Int.). The interpretation is based from: 3.26 to 4.00 as Very Highly Challenge (VHC); 2.51 to 3.25 as Highly Challenge (HC); 1.76 to 2.50 as Moderately Challenge (MC); and 1.00 to 1.75 as Fairly Challenge (FC).

The data indicates that the physical and environmental barriers to activity are more taxing for students than their intellectual understanding or internal desire to participate. This suggests that while students may have a baseline of motivation and knowledge, they are significantly hindered by how their bodies respond to exertion and the external conditions in which they are expected to perform. The narrow margin between Physiological Adaptation and Learning Environment highlights a strong intersection between physical capacity and the adequacy of the surrounding infrastructure, suggesting that neither can be addressed in isolation.

The biological cost of exercise and the quality of the built environment are the dominant deterrents to student health. Since Physiological Adaptation is the leading challenge, it implies that the student population may be starting from a state of low physical baseline fitness, making the transition to active lifestyles feel physically demanding. The high rank of the Learning Environment suggests that even if students were physically prepared, the lack of accessible or high-quality facilities acts as a secondary gatekeeper. This creates challenges where poor infrastructure fails to support the physical conditioning students need, making physiological adaptation even more difficult to achieve.

These summary results are related to research highlighting the multifaceted nature of physical activity barriers. The prominence of Physiological Adaptation is supported by Dizon et al. (2022) and Llana-Bello et al. (2020), who emphasize that cardiorespiratory fitness is a direct result of consistent engagement which many students currently lack. The high impact of the Learning Environment aligns with findings from Medical Central Association (2022), which identify outdated infrastructure and insufficient exercise spaces as primary deterrents. The challenges in the Philippine context regarding budget and maintenance are echoed by the Philippine Journal of Health Research and Development (2020). The Motivation and Engagement is linked to the work of Rhodes et al. (2017) and Miller et al.

(2024), who argue that the intention-behavior gap remains a hurdle even when students are literate in the benefits of movement.

These findings align with Social Cognitive Theory. As the biological cost of exercise and poor infrastructure can diminish a student’s self-efficacy. The Theory of Planned Behavior, where the narrow margin between physiological and environmental hurdles weakens perceived behavioral control. Self-Determination Theory, which suggests that when physical capacity is low and facilities are inadequate, students struggle to achieve the sense of competence and relatedness necessary for sustaining intrinsic motivation in movement competency.

Association between Demographic Profile and Challenges in Physical Activity of Students

The relationship between a student's demographic profile and their ability to navigate the rigors of physical education is one of the factors in academic and physical success. Factors such as age, sex, and academic course often dictate a student's baseline physical capacity and time management constraints, which in turn influence how they experience specific challenges in physical activity. For instance, disparities in content knowledge and physiological adaptation may vary significantly across different age groups or sexes, while a student’s specific course workload can directly impact their motivation, engagement, and perception of the learning environment. Investigating the significant association between these variables allows for a more nuanced understanding of how students’ background shapes the challenges that students face in achieving physical literacy.

Table 5a displays the Chi-square χ^2 test results for associations between demographic variables Age, Sex, and Course and four categories of physical activity challenges. Age shows a highly significant association with Content Knowledge χ^2 value of 106, p-value of <.001, Course shows a highly significant association with Content Knowledge, Learning Environment, and Motivation and Engagement with χ^2 value of 23.9, 20.3, and 28.6 consecutively, with p-value of 0.005, 0.016, and <.001.

Table 5a
Significant Association between Demographic Profile and Challenges in Physical Activity of Students

Demographic Variable	Challenges in Physical Activities	χ^2 value	df	p-value	Int
Age	Content Knowledge	106	24	<.001	S
	Learning Environment	14.9	24	0.924	NS
	Physiological Adaptation	22.5	24	0.548	NS
	Motivation and Engagement	24.8	24	0.417	NS
Sex	Content Knowledge	1.63	3	0.653	NS

	Learning Environment	6.92	3	0.075	NS
	Physiological Adaptation	6.29	3	0.098	NS
	Motivation and Engagement	5.21	3	0.157	NS
	Content Knowledge	23.9	9	0.005	S
Course	Learning Environment	20.3	9	0.016	S
	Physiological Adaptation	16.9	9	0.050	NS
	Motivation and Engagement	28.6	9	<.001	S

Note. χ^2 value refers to Chi-square test value, df refers to Degrees of Freedom, and Int. as Interpretation of p-value that when it is <.05 then there is a significant association (S) and NS if there is no significant association.

The data indicates that a student's academic field and age are far more influential than gender in determining the challenges they face regarding physical health. The significant association between Age and Content Knowledge suggests that a student's maturity or year level likely dictates their understanding of fitness principles. Most importantly, the broad significance of Course as a variable implies that the specific academic culture, workload, and physical demands of different majors significantly shape how students perceive their learning environment and their internal motivation

The inference drawn from this table is that physical activity challenges are largely contextual and academic. Because the course program is significantly linked to nearly all challenge categories, it suggests that lack of time, resources, and accessibility are dictated by the department and location of buildings on campus. For instance, students in more laboratory-heavy courses may face different motivational challenges compared to those in more flexible programs. The significant link between age and content knowledge further implies that as students progress through their college years, their movement competency training performance changes, but their challenges in physical activity remains a challenge.

These findings are supported by studies that highlight how institutional and academic structures dictate health outcomes. The significant influence of Course aligns with the findings of Li and Shi (2021) and Frank et al. (2021), who noted that students in sports-related majors exhibit better mental health and fewer activity barriers than those in liberal arts or high-pressure academic fields. The non-significant role of Sex in this specific context provides a nuanced contrast to Alnofaiey et al. (2023), who found that psychological benefits and barriers were stronger in female students, suggesting that local campus infrastructure may be a great equalizer of challenges. The link between academic immersion and motivation is echoed by Vainshelboim et al. (2019) and Thompson et al. (2023), whose research on heavy

credit loads and back-to-back scheduling describes how a student's course load creates the temporal poverty that renders facilities inaccessible.

These findings align with Social Cognitive Theory. Where the academic course acts as a critical environmental factor shaping self-efficacy. The Theory of Planned Behavior, as heavy program requirements weaken perceived behavioral control. Self-Determination Theory, which suggests that unless an academic environment supports the need for autonomy and competence, students will lack the intrinsic motivation necessary to overcome challenges and sustain movement competency.

Association between Demographic Profile and Movement Competency Training Performance of Students

The significant association between the demographic profile of the respondents and their Movement Competency Training performance to determine how personal backgrounds influence physical skill acquisition. The rationale for this analysis is to identify whether specific student groups require more specialized instructional focus, shifting the pedagogical approach from general physical education to one that accounts for the diverse baseline capabilities found in different academic programs.

Table 5b presents the association between Course and Physical Fitness shows a χ^2 -value of 32.1, p-value of 0.006, indicating a significant relationship. The association between Course and Locomotor/Non-locomotor Exercises shows a χ^2 -value of 27.6, p-value of 0.025, also significant.

The data shows that the course programs of the students are the primary determinant of their physical performance levels. The significant p-values suggest that the variation in training performance is not due to random chance but is likely influenced by the specific demands or characteristics of the field of study of the students.

Table 5b
Significant Association between Demographic Profile and Movement Competency Training Performance of Students

Demographic Variable	Movement Competency Training Performance	χ^2 value	df	p-value	Int
Age	Physical Fitness	52.0	40	0.097	NS
	Locomotor and Non-locomotor Exercises	33.7	40	0.748	NS
	Basic Resistance Training	30.1	40	0.873	NS
	Movement Pattern	31.7	40	0.822	NS
Healthy Eating Habits					
Sex	Physical Fitness	2.48	5	0.780	NS

	Locomotor and Non-locomotor Exercises	4.76	5	0.446	NS
	Basic Resistance Training Movement Pattern	9.47	5	0.092	NS
	Healthy Eating Habits	2.05	5	0.842	NS
Course	Physical Fitness	32.1	15	0.006	S
	Locomotor and Non-locomotor Exercises	27.6	15	0.025	S
	Basic Resistance Training Movement Pattern	23.3	15	0.078	NS
	Healthy Eating Habits	19.3	15	0.198	NS

Note. Note. χ^2 value refers to Chi-square test value, df refers to Degrees of Freedom, and Int as Interpretation of p-value that when it is $<.05$ then there is a significant association (S) and NS if there is no significant association.

These results suggest that course program have a stronger influence on Movement Competency Training performance of the students.

The findings imply that the academic immersion or the nature of a student's degree program significantly shapes their physical capabilities and engagement with movement competency. This suggests that certain courses may naturally attract students with higher baseline fitness or provide schedules that better accommodate physical training. The non-significance of Healthy Eating Habits across all demographics p-value of > 0.198 further infers that nutritional choices are likely influenced by external factors such as campus food environments or temporal poverty from busy schedules rather than personal demographic traits.

The data aligns with the findings of Li and Shi (2021) and Frank et al. (2021), who observed that students in sports-related or physically demanding majors exhibit significantly better health and activity outcomes than those in liberal arts or sedentary-heavy disciplines. The lack of significant association between demographic traits and Healthy Eating Habits in the table mirrors research by Deliens et al. (2016) and Morales et al. (2025), which suggests that environmental and financial barriers, such as the cost of healthy food or expensive gym memberships, often override individual demographic differences in middle-income contexts like the Philippines. The significance of the "Course" variable also supports the theory of Thompson et al. (2023) regarding temporal poverty, where specific academic workloads and back-to-back scheduling in certain courses leave students with varying levels of time to dedicate to physical fitness and locomotor mastery.

These findings align with Social Cognitive Theory, as the academic program acts as a distinct environmental context that can either bolster or undermine a student's self-efficacy through varying levels of peer support and instructional quality; the Theory of Planned Behavior, where course-specific scheduling and temporal poverty weaken the perceived behavioral control necessary for consistent movement practice; and Self-Determination Theory, which highlights that when an academic department prioritizes holistic wellness, it better satisfies a student's basic psychological needs for competence and relatedness, thereby fostering the intrinsic motivation required to sustain high-level movement competency.

Relationship between Challenges and Movement Competency Training Performance of Students

The significant relationship between the challenges in physical activity and the Movement Competency Training performance of the 171 respondents to determine how these barriers inversely impact skill acquisition. The rationale for this correlation is to identify whether specific hurdles, such as a lack of knowledge or physiological stress, serve as direct predictors of a student's inability to master the competencies.

Table 6 presents the statistically significant. Content Knowledge shows notable negative associations with Physical Fitness r-value of -0.163, p-value of 0.033, Locomotor/Non-locomotor Exercises r-value of -0.265, p-value of <.001, and Healthy Eating Habits r-value of -0.224, p-value of 0.003, indicating that greater CK challenges relate to lower performance in these areas, especially locomotor tasks. For Physiological Adaptation, a significant negative association exists only with Locomotor/Non-locomotor Exercises r-value of -0.179, p-value of 0.019.

Overall very low negative relationship between challenges in physical activity and movement competency performance r-value of -0.203, p-value of 0.008, meaning higher reported challenges tend to be associated with slightly poorer movement performance, though the effect is small.

Table 6
Significant Relationship between Challenges and Movement Competency Training Performance of Students

Challenges	Movement Competency Training Performance	r value	p-value	Int
Content Knowledge	Physical Fitness	-0.163	0.033	S
	Locomotor and Non-locomotor Exercises	-0.265	<.001	S
	Basic Resistance Training Movement Pattern	-0.019	0.804	NS

	Healthy Eating Habits	-0.224	0.003	S
Learning Environment	Physical Fitness	-0.130	0.09	NS
	Locomotor and Non-locomotor Exercises	-0.101	0.189	NS
	Basic Resistance Training Movement Pattern	-0.147	0.055	NS
Physiological Adaptation	Healthy Eating Habits	-0.086	0.263	NS
	Physical Fitness	-0.142	0.064	NS
	Locomotor and Non-locomotor Exercises	-0.179	0.019	S
	Basic Resistance Training Movement Pattern	-0.053	0.493	NS
Motivation and Engagement	Healthy Eating Habits	-0.144	0.061	NS
	Physical Fitness	-0.063	0.416	NS
	Locomotor and Non-locomotor Exercises	-0.150	0.050	NS
	Basic Resistance Training Movement Pattern	0.046	0.553	NS
	Healthy Eating Habits	-0.106	0.167	NS
Overall		-0.203	0.008	Significant

Note. The r-value interpretation (Int.) is based on the following 0.90 to 0.99 as Very High Correlation (VHC); 0.70 to 0.89 as High Correlation (HC); 0.50 to 0.69 as Moderate Correlation (MC); 0.30 to 0.49 as Low Correlation (LC); and 0.01 to 0.29 as Very Low Correlation (VLC). While the p-value is interpreted as Significant (S) when < 0.05. and NS refers to Not Significant.

The negative r-values across the table indicate an inverse relationship, meaning that as the challenges or barriers in these areas increase, the student's performance in movement competency tends

to decrease. The significance found suggests that a lack of theoretical understanding or literacy regarding movement is a primary predictor of poor physical execution and habit formation. The overall results indicate that while these challenges do significantly impede performance, they only account for a small portion of the variance, suggesting other unmeasured factors also influence student outcomes.

The findings imply that knowledge in content of students is more detrimental to physical performance than environmental or motivational ones in this specific institution. This suggests that students may have the desire to be active, but a lack of foundational knowledge on how to perform exercises or maintain nutrition serves as a significant roadblock to their success. The significant link further implies that physical discomfort or the inability of the body to adjust to training stress directly hampers fundamental movement mastery. The data suggests that institutional interventions should prioritize movement literacy and theoretical education to effectively improve practical physical outputs.

These results align with the findings of Mendizabal-Gomez et al. (2022), who highlighted a critical gap where theoretical body awareness knowledge is necessary for actual postural and movement control. The significant negative impact of challenges on performance mirrors research by Riño et al. (2025) and Mungcal et al. (2020), who identified that specific barriers ranging from physiological struggles in at-risk populations to post-instructional transitions significantly diminish student engagement and physical success. The inverse relationship between challenges and healthy habits supports the intention-behavior gap discussed by Rhodes et al. (2017) and Miller et al. (2024), where students may understand the benefits of health but lack the self-regulatory skills to overcome the practical challenges of implementing a routine. Finally, the significant role of Content Knowledge reinforces the findings of O'Neil et al. (2026) and Barkley et al. (2020), who suggest that when instructional quality or inclusive pedagogy is lacking, students struggle to translate information into physical competence.

These findings align with the main theory, Social Cognitive Theory. As the inverse relationship demonstrates how external challenges can degrade a self-efficacy of students and subsequent physical performance and the supporting theory, Theory of Planned Behavior, where increased barriers weaken the perceived behavioral control necessary for habit formation.

Influence of Challenges in Physical Activity on Movement Competency Training Performance of Students

The extent of influence that challenges in physical activity have on the Movement Competency Training performance of the students. To determine the predictive power of challenges in physical activities. The objective for examining this influence is to understand how much of the variance in a movement competency training performance of students can be attributed to the specific challenges they face. This helps to prioritize which challenges most urgently require intervention.

Table 7 presents the challenges in physical activity that have, on average, a very weak negative influence on movement competency training performances overall, r^2 -value of 0.041. Among the specific pairings, the strongest association is between Content Knowledge and Locomotor and Non-locomotor Exercises r^2 -value of 0.070, which is still a weak influence, followed by Content Knowledge with Healthy Eating Habits r^2 -value of 0.050 and Content Knowledge with Physical Fitness r^2 -value of 0.027. A more

modest link exists between Physiological Adaptation and Locomotor/Non-locomotor Exercises r^2 -value of 0.032.

Table 7

Extent of Influence of Challenges on Movement Competency Training Performance of Students

Challenges in Physical Activity	Movement Competency Training Performance	r value	r ² -value	Int
Content Knowledge	Physical Fitness	-0.163	0.027	VWI
Learning Environment	Locomotor and Non-locomotor Exercises	-0.265	0.070	VWI
Physiological Adaptation	Healthy Eating Habits	-0.224	0.050	VWI
Motivation and Engagement	Locomotor and Non-locomotor Exercises	-0.179	0.032	VWI
Overall		-0.203	0.041	Very Weak Influence

Note. The r^2 -value interpretation is based on the following 0.80 to 1.00 as Very Strong Influence (VSI); 0.60 to 0.79 as Strong Influence (SI); 0.40 to 0.59 as Moderate Influence (MI); 0.20 to 0.39 as Weak Influence (WI); and 0.00 to 0.19 as Very Weak Influence (VWI).

The analysis of the r^2 values indicates that while challenges in physical activity do have a statistically significant impact, they account for only a very small percentage of the variance in student performance. For instance, the overall r^2 suggests that only the decline in movement competency training performance can be attributed to the identified challenges, while influenced by other factors not captured in this specific model.

The findings infer that while institutional and personal challenges are deterrents, they are not the sole or primary drivers of performance failure in this cohort. The fact that the highest relative influence on locomotor skills suggests that intellectual mastery of movement is the most influential of the weak factors, implying that students struggle more with understanding movement patterns than with the learning environment or motivation themselves. The results suggests that students may be remarkably resilient, or that other significant predictors such as baseline athletic ability or prior socioeconomic access to sports play a much larger role in their success than the immediate challenges surveyed.

The results showing that challenges have a measurable but small influence on performance align with the findings of Rhodes et al. (2017) and Miller et al. (2024), who argue that the "intention-behavior

gap" is complex and that even significant barriers do not always dictate the final physical outcome if self-regulation skills are present. The specific influence of Content Knowledge on locomotor mastery supports the research of Mendizabal-Gomez et al. (2022), which identifies body awareness and theoretical knowledge as essential precursors to physical control. The overall weak influence of the environment and physiological adaptation reflects the "hierarchy of obstacles" noted by Chao et al. (2022) and Alkhateeb et al. (2024), where external pressures like rigorous academic schedules often overlap with multiple internal factors, making it difficult for any single challenge to claim a dominant influence on student physical activity. Finally, the findings regarding healthy eating habits align with Deliens et al. (2016) and Morales et al. (2025), who suggest that nutritional choices are part of a broader, multifaceted systemic issue that transcends simple demographic or immediate instructional barriers.

These findings align with the main theory, Social Cognitive Theory. This suggests that while challenges impact self-efficacy, many unmeasured factors such as prior athletic experience also drive performance and the supporting Self-Determination Theory, which posits that internalizing the value of an activity is a more powerful predictor of success than the mere absence of external hurdles.

Lesson Guide in Movement Competency Training

The development of the Lesson Guide serves as a strategic intervention to bridge the gap between student challenges in physical activity and movement competency performance. Your study revealed that while students generally possess a "Good" level of movement competency, they remain "Moderately Challenged" across multiple domains, particularly in physiological adaptation and technical content knowledge. This instructional material is designed to provide a ready-to-use pedagogical resource for physical education instructors to move beyond theoretical teaching and address the practical barriers identified in the research. By grounding the guide in the modified ADDIE framework, the output ensures that the instructional strategies are systematically aligned with the verified needs of first-year college students.

Analysis Phase. The focus is on the profile of the students, which indicates a significant inverse relationship where challenges in physical activity relate to movement competency training performance. Based on the data, the conceptualization of the lesson guide will be based on the physiological adaptation focusing on endurance and energy management and providing adequate facilities and equipment as part of class management. This identifies knowledge of content, focusing specifically in activities like creating exercise programs and physical activities focused on movement progression. This phase establishes that the lesson guide must be differentiated by academic course.

Design Phase. Instructional objectives in specific physical activities are formulated, focusing on basic resistance training movement patterns with specialized physical activity instructions. Integrating the Social Cognitive Theory as main theory of this study by designing activities that foster autonomy, competence, and relatedness to enhance intrinsic motivation and the fun factor of the course. To address challenges, the design includes flexible learning modalities that can adapt to varying conditions and facility limitations. Strategies such as small-group

coaching and real-time technical feedback are planned to provide the individualized instruction necessary for students to master complex biomechanical foundations.

Development Phase. Involves the application of lesson guide, the design into practical instructional scripts and assessment tools. Creates structured endurance progressions and diagnostic assessments to identify skill gaps in physical fitness and locomotor exercises. The guide incorporates a program-centered approach, tailoring examples and workloads to be compatible with the specific academic schedules and resources of different majors. Ensures the final output is a lesson guide that empowers physical education instructors to overcome and reduce the challenges in physical activity and enhance the movement competency training performance of the students.

Conclusion

1. The study was composed of respondents with a stable and balanced first-year college students, primarily composed of late adolescents with a nearly equal distribution of males and females. While age and sex provide a consistent baseline, the specific academic course of students emerged as the most significant demographic factor influencing their movement competency training performance.
2. A significant performance gap was identified in technical areas, particularly in basic resistance training movement patterns and healthy eating habits, where students struggled to move from general awareness to technical mastery.
3. The challenge in physical activity of students was not a simple lack of motivation, but rather a combination of internal biological fatigue and external intellectual barriers that make movement competency training feel intimidating and unmanageable.
4. There were no significant associations between age or sex and the challenges or movement competency training performance levels, but the academic course program of the students.
5. The study identified a significant relationship between the level of challenges encountered and movement competency performance. This correlation proves that student success in physical education was not solely dependent on individual motivation but was heavily influenced by the quality of the learning environment and the accessibility of instructional support.
6. Knowledge in content of students was identified as the most influential predictor of poor locomotor and non-locomotor outcomes. The overall very weak influence of aspects was unmeasured elements play a vital role in determining movement competency training performance.

Recommendation

1. It is recommended that college administrators and deans move beyond generic physical education policies and instead implement course-aware wellness strategies that account for the diverse academic demands of different degree programs. This should include the institutionalization of wellness opportunities or flexible laboratory schedules to ensure that students in time-intensive technical majors are not forced to sacrifice their physical health for academic compliance.

2. To address these challenges, physical education instructors should prioritize the technical foundations of resistance training within the curriculum, moving beyond general participation toward precision in biomechanical execution. It is recommended that the department utilize the developed specialized lesson guide to provide more structured, on-demand pedagogical support that specifically targets these primal movement patterns. Regular form checks and video-based assessments should be integrated into the classroom to ensure students achieve the technical proficiency necessary for lifelong physical literacy.
3. The institution should provide clearer instructional materials and improve the learning environment, such as updated facilities and equipment to mitigate the impact of these challenges. Instructors should incorporate lessons on active recovery and energy management to help students navigate physiological fatigue, while also providing visual aids and digital resources to bridge the content knowledge gap at the point of exercise.
4. It is recommended that the Institution planned their scheduling to ensure that students in demanding majors have dedicated, uninterrupted time for physical development. Administrators should conduct regular assessments of how specific departmental practices impact student wellness to identify at-risk programs that require additional health interventions.
5. The institution must adopt a supportive group that actively seeks to overcome the challenges in physical activity of students. This involves not only enhancing the physical learning environment through better equipment maintenance but also providing pedagogical tools like the developed lesson guide to simplify complex content.
6. Both the Institution and Instructors should prioritize physical literacy by ensuring that every physical activity is supported by a strong theoretical foundation, making how and why as important as doing. Assessment methods should be broadened to include cognitive tests that evaluate an understanding of the students in biomechanics, ensuring they have the mental blueprint required for safe and effective movement.

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Author's Biography

The author is a dedicated educator and fitness professional based in Naga City, Camarines Sur, currently serving as an Instructor I and Part-Time PATHFit Instructor at the Bicol State College of Applied Sciences and Technology (BISCAST). A proud alumnus of the institution, he earned a Bachelor of Science in Exercise and Sport Sciences with a major in Fitness and Sports Management in 2022 and is currently advancing his expertise by pursuing a Master of Arts in Education major in Physical Education at Naga College Foundation, Inc. Beyond these academic and instructional roles, he serves as the Coach and Trainer for the BISCAST Intensity dance troupe, leveraging a background in sports management and movement to mentor students. Born on September 18, 1999, he maintains a strong professional presence in the Bicol region, combining a passion for physical literacy with a commitment to higher education.

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Appendix

Results

Contingency Tables

Contingency Tables							
Physical Fitness							
Age	E	F	Fr	G	S	VG	Total
17	0	0	0	1	0	1	2
18	4	4	14	14	38	10	84
19	1	2	10	9	23	12	57
20	1	1	2	0	3	1	8
21	0	2	4	4	0	1	11
22	0	0	1	0	2	0	3
23	1	1	0	0	1	0	3
24	0	0	0	1	0	0	1
26	0	0	0	2	0	0	2
Total	7	10	31	31	67	25	171

χ^2 Tests			
Value	df	p	
χ^2 52.0	40	0.097	
N	171		

Contingency Tables

Contingency Tables							
Locomotor and Non-locomotor Exercises							
Age	E	F	Fr	G	S	VG	Total
17	0	0	1	0	1	0	2
18	1	9	21	15	20	18	84
19	1	6	16	13	12	9	57
20	0	1	5	1	0	1	8
21	0	4	3	2	0	2	11
22	0	0	1	0	1	1	3
23	0	1	0	0	1	1	3
24	0	1	0	0	0	0	1
26	0	0	2	0	0	0	2
Total	2	22	49	31	35	32	171

χ^2 Tests			
Value	df	p	
χ^2 33.7	40	0.748	
N	171		

Contingency Tables

Contingency Tables							
Basic Resistance Training Movement Pattern							
Age	E	F	Fr	G	S	VG	Total
17	0	1	0	1	0	0	2
18	1	22	27	12	11	11	84
19	2	13	21	9	7	5	57
20	1	3	2	1	1	0	8
21	0	4	5	1	1	0	11
22	0	0	1	1	1	0	3
23	0	0	1	1	0	1	3
24	0	0	0	1	0	0	1
26	0	0	0	1	0	1	2
Total	4	43	57	28	21	18	171

χ^2 Tests			
Value	df	p	
χ^2 30.1	40	0.873	
N	171		

Contingency Tables

Contingency Tables

Age	Healthy Eating Habits						Total
	E	F	Fr	G	S	VG	
17	0	0	1	1	0	0	2
18	3	6	21	15	18	21	84
19	1	7	17	13	9	10	57
20	0	2	5	1	0	0	8
21	1	2	4	0	2	2	11
22	0	0	1	0	0	2	3
23	0	0	1	1	0	1	3
24	0	0	0	1	0	0	1
26	0	0	1	1	0	0	2

Contingency Tables

Total	5	17	51	33	29	36	171
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χ^2 Tests

	Value	df	p
χ^2	31.7	40	0.822
N	171		

Contingency Tables

Contingency Tables

Sex	Physical Fitness						Total
	E	F	Fr	G	S	VG	
F	2	5	17	16	29	11	80
M	5	5	14	15	38	14	91
Total	7	10	31	31	67	25	171

χ^2 Tests

	Value	df	p
χ^2	2.48	5	0.780
N	171		

Contingency Tables

Contingency Tables

Sex	Locomotor and Non-locomotor Exercises						Total
	E	F	Fr	G	S	VG	
F	1	10	28	13	12	16	80
M	1	12	21	18	23	16	91
Total	2	22	49	31	35	32	171

χ^2 Tests

	Value	df	p
χ^2	4.76	5	0.446
N	171		

Contingency Tables

Contingency Tables

Basic Resistance Training Movement Pattern							
Sex	E	F	Fr	G	S	VG	Total
F	0	25	28	9	8	10	80
M	4	18	29	19	13	8	91
Total	4	43	57	28	21	18	171

χ^2 Tests

Value	df	p
χ^2 9.47	5	0.092
N	171	

Contingency Tables

Contingency Tables

Healthy Eating Habits							
Sex	E	F	Fr	G	S	VG	Total
F	3	6	24	14	14	19	80
M	2	11	27	19	15	17	91
Total	5	17	51	33	29	36	171

χ^2 Tests

Value	df	p
χ^2 2.05	5	0.842
N	171	

Contingency Tables

Contingency Tables

Physical Fitness							
Course	E	F	Fr	G	S	VG	Total
BET-EET	2	3	2	2	9	5	23
BSEE	1	2	6	9	23	10	51
BSENTREP	2	1	5	9	26	4	47
BTVTED	2	4	18	11	9	6	50
Total	7	10	31	31	67	25	171

χ^2 Tests

Value	df	p
χ^2 32.1	15	0.006
N	171	

Contingency Tables

Contingency Tables

Locomotor and Non-locomotor Exercises							
Course	E	F	Fr	G	S	VG	Total
BET-EET	1	4	8	1	6	3	23
BSEE	0	6	8	11	16	10	51
BSENTREP	1	3	15	9	12	7	47
BTVTED	0	9	18	10	1	12	50
Total	2	22	49	31	35	32	171

χ^2 Tests

Value	df	p
χ^2 27.6	15	0.025
N	171	

Contingency Tables

Contingency Tables

Basic Resistance Training Movement Pattern							
Course	E	F	Fr	G	S	VG	Total
BET-EET	2	9	6	2	3	1	23
BSEE	2	6	20	10	7	6	51
BSENTREP	0	11	13	11	8	4	47
BTVTED	0	17	18	5	3	7	50
Total	4	43	57	28	21	18	171

χ^2 Tests

Value	df	p
χ^2 23.3	15	0.078
N	171	

Contingency Tables

Contingency Tables

Course	Healthy Eating Habits						Total
	E	F	Fr	G	S	VG	
BET-EET	0	6	8	4	1	4	23
BSEE	2	2	12	13	12	10	51
BSENTREP	2	2	16	7	10	10	47
BTVTED	1	7	15	9	6	12	50
Total	5	17	51	33	29	36	171

χ^2 Tests

	Value	df	p
χ^2	19.3	15	0.198
N	171		

References

- [1] The jamovi project (2025). *jamovi*. (Version 2.7) [Computer Software]. Retrieved from <https://www.jamovi.org>.
- [2] R Core Team (2025). *R: A Language and environment for statistical computing*. (Version 4.5) [Computer software]. Retrieved from <https://cran.r-project.org>. (R packages retrieved from CRAN snapshot 2025-05-25).

Descriptives

Descriptives

	Content Knowledge	Learning Environment	Physiological Adaptation	Motivation and Engagement	Challenges	Physical Fitness	Locomotor and Non-locomotor Exercises	Basic Resistance Training Movement Pattern	Healthy Eating Habits	Scores
N	171	171	171	171	171	171	171	171	171	171
Missing	0	0	0	0	0	0	0	0	0	0
Mean	2.02	2.20	2.22	1.90	2.08	6.83	5.87	5.04	5.90	23.6
Standard deviation	0.534	0.575	0.580	0.546	0.451	1.87	1.93	2.07	1.96	5.67
Minimum	1.00	1.10	1.00	1.00	1.18	1	1	1	1	8
Maximum	3.50	3.70	4.00	4.00	3.70	10	10	10	10	35
Shapiro-Wilk W	0.976	0.984	0.976	0.939	0.971	0.947	0.967	0.965	0.970	0.989
Shapiro-Wilk p	0.153	0.524	0.275	0.361	0.171	0.122	0.136	0.224	0.183	0.193

References

- [1] The jamovi project (2025). *jamovi*. (Version 2.7) [Computer Software]. Retrieved from <https://www.jamovi.org>.
- [2] R Core Team (2025). *R: A Language and environment for statistical computing*. (Version 4.5) [Computer software]. Retrieved from <https://cran.r-project.org>. (R packages retrieved from CRAN snapshot 2025-05-25).

Results

Correlation Matrix

Correlation Matrix

		Content Knowledge	Learning Environment	Physiological Adaptation	Motivation and Engagement	Respondents	Physical Fitness	Locomotor and Non-locomotor Exercises	Basic Resistance Training Movement Pattern	Healthy Eating Habits	Challenges	Scores
Content Knowledge	Pearson's <i>r</i>	—										
	df	—										
	p-value	—										
	N	—										
Learning Environment	Pearson's <i>r</i>	0.420***	—									
	df	169	—									
	p-value	<.001	—									
	N	171	—									
Physiological Adaptation	Pearson's <i>r</i>	0.581***	0.428***	—								
	df	169	169	—								
	p-value	<.001	<.001	—								
	N	171	171	—								
Motivation and Engagement	Pearson's <i>r</i>	0.667***	0.429***	0.697***	—							
	df	169	169	169	—							
	p-value	<.001	<.001	<.001	—							
	N	171	171	171	—							
Respondents	Pearson's <i>r</i>	NaN*	NaN*	NaN*	NaN*	—						
	df	169	169	169	169	—						
	p-value	NaN	NaN	NaN	NaN	—						
	N	171	171	171	171	—						
Physical Fitness	Pearson's <i>r</i>	-0.163*	-0.130	-0.142	-0.063	NaN*	—					
	df	169	169	169	169	169	—					
	p-value	0.033	0.090	0.064	0.416	NaN	—					
	N	171	171	171	171	171	—					
Locomotor and Non-locomotor Exercises	Pearson's <i>r</i>	-0.265***	-0.101	-0.179*	-0.150	NaN*	0.597***	—				
	df	169	169	169	169	169	169	—				
	p-value	<.001	0.189	0.019	0.050	NaN	<.001	—				
	N	171	171	171	171	171	171	—				
Basic Resistance Training Movement Pattern	Pearson's <i>r</i>	-0.019	-0.147	-0.053	0.046	NaN*	0.375***	0.268***	—			
	df	169	169	169	169	169	169	169	—			
	p-value	0.804	0.055	0.493	0.553	NaN	<.001	<.001	—			
	N	171	171	171	171	171	171	171	—			
Healthy Eating Habits	Pearson's <i>r</i>	-0.224**	-0.086	-0.144	-0.106	NaN*	0.304***	0.390***	0.278***	—		
	df	169	169	169	169	169	169	169	169	—		
	p-value	0.003	0.263	0.061	0.167	NaN	<.001	<.001	<.001	—		
	N	171	171	171	171	171	171	171	171	—		
Challenges	Pearson's <i>r</i>	0.819***	0.710***	0.841***	0.861***	NaN*	-0.154*	-0.214**	-0.056	-0.172*	—	
	df	169	169	169	169	169	169	169	169	169	—	
	p-value	<.001	<.001	<.001	<.001	NaN	0.044	0.005	0.469	0.024	—	
	N	171	171	171	171	171	171	171	171	171	—	
Scores	Pearson's <i>r</i>	-0.229**	-0.161*	-0.177*	-0.092	NaN*	0.775***	0.770***	0.677***	0.680***	-0.203**	—
	df	169	169	169	169	169	169	169	169	169	169	—
	p-value	0.003	0.036	0.021	0.233	NaN	<.001	<.001	<.001	<.001	0.008	—
	N	171	171	171	171	171	171	171	171	171	171	—

Note. * p < .05, ** p < .01, *** p < .001
 * Pearson correlation cannot be calculated for non-numeric values