VOLUME 1
ISSUE 4
OCTOBER–DECEMBER
2026

Print ISSN: 3116-3882
Electronic ISSN: 3116-3890



IJSHEFMS

International Journal of Sports, Health, Fitness, and Movement Studies

A Quarterly Peer-Reviewed International Research Journal

SPORTS SCIENCE | HEALTH | FITNESS | MOVEMENT STUDIES | WELLNESS & PERFORMANCE

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Published by ETCOR, Publisher of the Best Homiletics Book Preaching with My Scars, 20th Cardinal Sin Catholic Book Awards

International Journal of Sports, Health, Fitness, and Movement Studies (IJSHEFMS)
National Book Development Board (NBDB) Registration as Book Publisher (Print & Digital): 6312
PRC-CPD Accredited Provider: PTR-2025-749
Print ISSN: 3116-3882
Electronic ISSN: 3116-3890

Physical activity engagement and the well-being of freshman students of local college in Lipa City

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Received: 27 September 2026 **Revised**: 27 September 2026; 04 November 2026; 07 November 2026; 08 November 2026

Accepted: 09 November 2026 **Available Online**: 10 November 2026

Volume 1 (2026), Issue 4, P-ISSN – 3116-3882; E-ISSN - 3116-3890

https://doi.org/10.63498/ijshefms2

Abstract

Aim: This study examined physical activity engagement and the academic, social, and emotional well-being of 110 freshman Bachelor of Secondary Education (BSED) students at Kolehiyo ng Lungsod ng Lipa (KLL). It assessed autonomy, competence, and relatedness; described the three well-being domains; tested their relationships; and developed a proposed physical activity program.

Methodology: A quantitative descriptive-correlational design was used. All 110 eligible freshman BSED students were included through total population enumeration. Data were gathered using structured questionnaires based on Self-Determination Theory and established student well-being measures. Composite means and inferential statistics were used for analysis.

Results: Physical activity engagement was High for autonomy (3.40) and competence (3.34), and Very High for relatedness (3.55). Well-being was High for academic (3.32) and social (3.48), and Very High for emotional well-being (3.55). No statistically significant relationship was found between physical activity engagement and academic ($p = .183$), social ($p = .207$), or emotional well-being ($p = .261$).

Conclusion: Respondents reported favorable physical activity engagement and well-being, with relatedness and emotional well-being receiving the highest means in their respective domains. The analyses found no statistically significant associations between physical activity engagement and the three well-being domains. The proposed KLL Holistic Well-Being Movement Initiative offers structured activity opportunities; its effectiveness remains to be evaluated.

Keywords: *Physical activity engagement; academic well-being; social well-being; emotional well-being; structured physical activity program*

INTRODUCTION

Physical activity is an important health-promotion concern in higher education, where students navigate new academic demands, relationships, independence, and learning environments. These transitions may affect participation in health-promoting behaviors and students' overall well-being.

Research on university students reports mixed associations between physical activity, sedentary behavior, and educational outcomes. Babaeer et al. (2022) found the evidence complex and methodologically varied, while Lynch et al. (2022) identified classroom movement breaks and active learning as feasible ways to increase movement and reduce sedentary behavior in tertiary settings.

Physical activity may also support mental health. Huang et al. (2024), reviewing 59 undergraduate intervention studies, reported potential reductions in anxiety, depression, and stress, but noted intervention heterogeneity and limitations in evidence quality. Context-specific research and rigorous program evaluation therefore remain important.

Self-Determination Theory (SDT) explains motivation through autonomy, competence, and relatedness. A meta-analysis by Bureau et al. (2022), covering 144 studies and more than 79,000 students, highlighted psychological-need satisfaction and autonomy-supportive environments as relevant to student motivation. These dimensions help describe choice, perceived capability, and social connection in physical activity.

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In the Philippines, student well-being is understood as multidimensional. Cristobal and Bance (2021) proposed the BLOOMS Model, encompassing academic, psycho-emotional, physical, social, and spiritual development. Campoamor-Olegario et al. (2025) further examined health behaviors among 2,620 Filipino tertiary students, underscoring the value of local evidence.

Freshmen are an important group because entry into college requires adjustment to academic expectations, peer relationships, personal responsibilities, and new learning environments. These experiences may shape both physical activity participation and perceived well-being.

At KLL, a city-funded institution in Lipa City, Physical Education is part of the general education curriculum. The researcher's observations as a PE instructor indicate variation in students' enthusiasm, confidence, and consistency; workload, personal circumstances, motivation, and interest may affect participation. These observations establish the local context but are not study findings.

Although prior studies address physical activity and well-being, institution-specific evidence is needed on freshman students in local public higher education. This study examines engagement through autonomy, competence, and relatedness alongside academic, social, and emotional well-being, and tests whether the variables are significantly associated.

Using a quantitative descriptive-correlational design, the study describes these variables and tests their associations. It neither establishes causation nor evaluates an intervention.

The findings may inform PE teachers, administrators, student-development personnel, and researchers planning student-centered activity opportunities. They also provide an evidence-informed basis for the proposed KLL program.

Review of Related Literature and Studies

Physical Activity Engagement

Physical activity is bodily movement produced by skeletal muscles that requires energy expenditure, including exercise, sports, recreation, and daily movement. The World Health Organization (WHO, 2020) identifies it as essential to health promotion. In higher education, engagement also encompasses participation, motivation, perceived capability, and willingness to remain active.

Engagement is shaped by personal, social, and environmental conditions, including workload, time, facilities, motivation, and access. Babaeer et al. (2022) found inconsistencies in evidence linking university students' activity and educational outcomes, indicating a need for further study.

Lynch et al. (2022), in a review of 14 studies involving 5,997 participants, found classroom movement breaks and physically active learning feasible in university settings, with potential to increase activity and reduce sedentary behavior and fatigue.

SDT identifies autonomy (choice and personal control), competence (perceived capability), and relatedness (connection and belonging) as basic psychological needs relevant to motivation and sustained engagement. Bureau et al. (2022) demonstrated their relevance to student motivation.

In PE, autonomy can be supported through activity choices, competence through appropriately challenging tasks and skill development, and relatedness through cooperative games and supportive peer interaction. These dimensions guide the present assessment of engagement.

Student Well-Being

Student well-being encompasses positive functioning and experiences in academic, social, emotional, and personal environments. It includes satisfaction, meaningful relationships, emotional balance, and the ability to manage everyday demands, all of which matter during the transition to higher education.

Cristobal and Bance (2021) proposed the BLOOMS Model from research with Filipino university students. Its academic, psycho-emotional, physical, social, and spiritual dimensions highlight the interconnected and context-dependent nature of student well-being.

Academic Well-Being

Academic well-being concerns students' attitudes, motivation, satisfaction, and capacity to manage educational demands. In this study it is measured through school value, academic burnout, academic satisfaction, and homework engagement using the Academic Well-Being Questionnaire (AWBQ).

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These dimensions capture both positive and challenging experiences: students may value school and feel satisfied while also experiencing exhaustion or difficulty completing requirements. Academic well-being is therefore broader than grades alone.

Social Well-Being

Social well-being concerns perceived relationships, integration, acceptance, contribution, and connection with the wider community. Positive social experiences can foster belonging and supportive peer relationships.

Keyes' Social Well-Being Scale includes social integration, acceptance, contribution, actualization, and coherence. These dimensions are relevant to freshmen establishing peer relationships and adapting to a new social environment.

Group physical activities offer opportunities for interaction and teamwork, but participation does not guarantee social connection. Experiences may vary with confidence, peer acceptance, activity preferences, and interaction quality.

Emotional Well-Being

Emotional well-being involves positive emotions, emotional regulation, psychological balance, and coping with everyday stressors. It is especially relevant during the academic and social adjustments associated with college entry.

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS; Tennant et al., 2007) assesses positive mental well-being, including optimism, relaxation, clear thinking, and energy. It provides the measure of emotional well-being used in this study.

Huang et al. (2024) reported potential reductions in anxiety, depression, and stress following physical activity interventions among undergraduates, while noting substantial heterogeneity and evidence limitations. These findings support investigation without assuming uniform outcomes.

Relationship Between Physical Activity Engagement and Academic, Social, and Emotional Well-Being

Studies have examined physical activity in relation to cognitive functioning, emotional health, social relationships, and adjustment. Associations vary by population, measures, activity type, and design.

For academic well-being, research considers attention, cognition, learning engagement, and educational experiences. Babaeer et al. (2022) found university-level evidence inconclusive; Lynch et al. (2022) reported that movement breaks may support attention and reduce fatigue, although study quality was generally limited. Felez-Nobrega et al. (2018) examined light-intensity physical activity in relation to academic performance among university students, illustrating that activity intensity and the specific academic outcome measured are important when comparing findings across studies.

Group activities may encourage cooperation, communication, teamwork, and peer interaction, potentially supporting social integration. Their association with perceived social well-being may depend on relationship quality, inclusion, and individual experience.

For emotional well-being, Huang et al. (2024) found potential mental-health benefits from undergraduate physical activity interventions. Hutchesson et al. (2025) reported evidence linking physical inactivity with increased risk of poor psychological well-being among tertiary students.

Associations are not necessarily consistent across populations or well-being domains. Activity intensity, frequency, and duration, as well as workload, sleep, personal circumstances, social support, and access, may also matter.

Accordingly, this study tests associations between engagement (autonomy, competence, relatedness) and academic, social, and emotional well-being among KLL freshmen rather than presuming that activity improves well-being.

Structured Physical Activity Programs in Higher Education

Structured physical activity programs organize purposeful movement through PE classes, campus sports, fitness sessions, and recreation. In higher education, they can create accessible opportunities for participation.

Lynch et al. (2022) identified movement breaks and active learning as feasible ways to address sedentary behavior in university settings without necessarily disrupting instruction.

Huang et al. (2024) identified potential mental-health benefits of undergraduate activity interventions but called for stronger designs, consistent implementation, and clearer reporting. Program effectiveness must therefore be evaluated.

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SDT informs student-centered program design: meaningful choices can support autonomy, appropriately challenging tasks competence, and cooperative experiences relatedness. These principles accommodate varied interests and abilities.

The proposed KLL Holistic Well-Being Movement Initiative applies these principles through three modules: Foundations of Fitness, Sports and Social Connection, and Wellness Integration and Resilience. It offers structured activity opportunities attentive to students' motivational and well-being needs.

The initiative is a proposed research output, not an intervention tested in this study. Its implementation and effectiveness require a subsequent evaluation using baseline and follow-up measures, implementation monitoring, and an appropriate design.

Synthesis of the Literature and Research Gap

The literature identifies physical activity as relevant to health promotion, student development, sedentary behavior, motivation, and psychological health. Reviews report promising but variable evidence, particularly for educational outcomes and intervention effects.

Well-being is multidimensional: academic well-being concerns educational experiences and demands; social well-being concerns relationships and integration; and emotional well-being concerns positive functioning and coping. Philippine research (Cristobal & Bance, 2021) likewise emphasizes interconnected dimensions.

SDT frames engagement through autonomy, competence, and relatedness, while the Biopsychosocial Model considers interacting biological, psychological, and social influences on health and well-being.

However, evidence remains limited on whether these three engagement dimensions are associated with academic, social, and emotional well-being among freshmen in local public institutions such as KLL. Differences in populations, measures, settings, and methods limit generalization from other studies.

This study addresses that gap by describing engagement and the three well-being domains among KLL freshmen and testing their statistical relationships. It contributes institution-specific evidence to physical education and campus health promotion.

The findings also inform the proposed KLL Holistic Well-Being Movement Initiative. The program's implementation and effectiveness require future evaluation; the present study provides a planning basis, not evidence of causal program effects.

Theoretical Framework

The study draws on Self-Determination Theory (SDT; Deci & Ryan, 1985) and Engel's (1977) Biopsychosocial Model. Together, they frame physical activity engagement and multidimensional student well-being.

Self-Determination Theory

SDT explains motivation through autonomy, competence, and relatedness. These needs help explain participation experiences and the conditions that may support motivation.

Autonomy is perceived choice and control; in physical activity, it may be supported when students select activities and regulate their involvement.

Competence is perceived effectiveness and capability, reflected in students' sense that they can perform movements, develop skills, and complete activity tasks.

Relatedness is connection and belonging, which may arise through group exercise, team sports, cooperative games, and supportive peer interactions.

SDT is the primary basis for examining engagement through these three needs. Bureau et al. (2022) also demonstrated their relevance to educational motivation. The theory does not imply that greater engagement necessarily corresponds to higher well-being; the association must be tested empirically.

Biopsychosocial Model of Health

Engel's (1977) Biopsychosocial Model explains health and well-being through interacting biological, psychological, and social factors, extending beyond purely biological explanations.

The biological dimension concerns physical functioning; the psychological dimension includes emotions, motivation, and stress management; and the social dimension includes relationships, support, participation, and environmental influences.

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The model provides a broad lens for the study's outcomes: academic well-being involves motivation, satisfaction, and academic demands; social well-being concerns relationships and integration; and emotional well-being concerns emotional experience and coping.

The study does not directly measure clinical or physiological indicators of biological health. The model is therefore applied interpretively, particularly to the measured psychological and social dimensions.

Integration of the Theoretical Foundations

SDT explains motivational aspects of engagement through autonomy, competence, and relatedness; the Biopsychosocial Model situates well-being within interacting psychological and social experiences.

Together, the theories inform the investigation of possible associations between physical activity engagement and academic, social, and emotional well-being among KLL freshmen.

The theories justify examining these variables but do not predetermine the findings. Statistical evidence, not theoretical expectation, determines whether significant associations exist.

Conceptual Framework

The IPO conceptual framework examines associations between physical activity engagement and the academic, social, and emotional well-being of KLL freshmen.

Inputs comprise the respondents' profile, engagement (autonomy, competence, relatedness), and well-being (academic, social, emotional).

The process includes questionnaire administration, data collection and organization, descriptive analysis of variable levels, inferential testing of associations, and interpretation.

The output is the proposed KLL Holistic Well-Being Movement Initiative, a structured program informed by the findings and students' motivational and well-being needs.

The framework treats the initiative as a proposed output whose implementation and effectiveness require further evaluation. The present study describes variables, tests associations, and informs program planning.

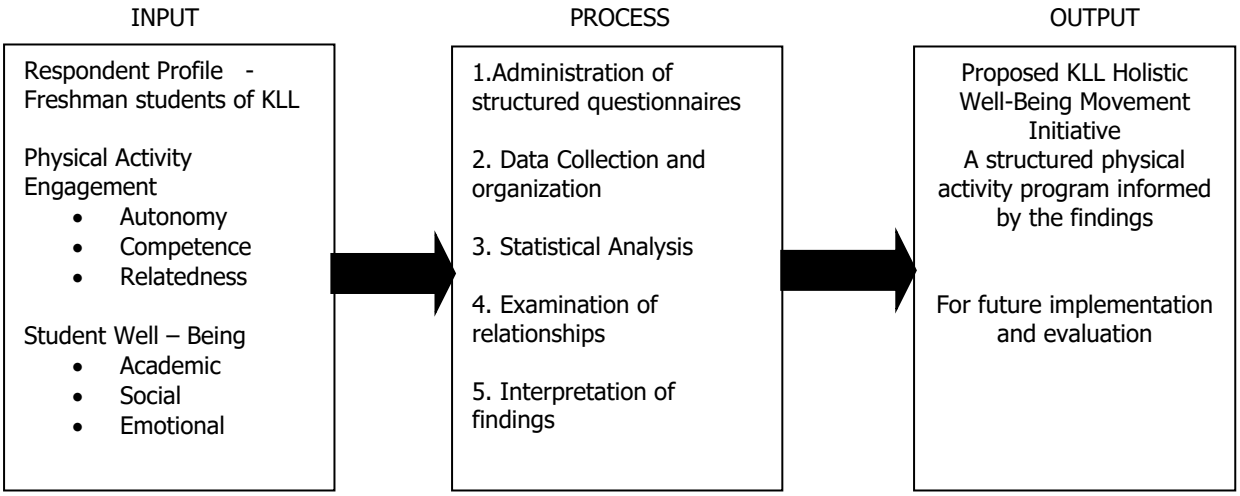


Figure 1
Research Paradigm of the Study

Acronyms

PE - Physical Education
RMSEA - Root Mean Square Error of Approximation
SDT - Self-Determination Theory
WEMWBS - Warwick-Edinburgh Mental Well-being Scale
WHO - World Health Organization

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Statement of the Problem

The transition to higher education brings new academic demands, social relationships, and emotional challenges. Physical activity is relevant to health promotion, but its association with freshmen's academic, social, and emotional well-being requires context-specific examination.

At KLL, assessing autonomy, competence, and relatedness can describe freshmen's physical activity engagement, while examining academic, social, and emotional well-being can clarify their college experiences.

Whether engagement is significantly associated with these well-being domains among KLL freshmen remains an empirical question. This study determines their levels, tests the relationships, and uses the findings to propose a structured physical activity program.

Research Objectives

General Objective

This study aimed to determine freshmen's physical activity engagement and academic, social, and emotional well-being at KLL; examine the relationships between engagement and each well-being domain; and develop a structured program based on the findings.

Specific Objectives

Specifically, the study aimed to:

1. Determine the level of physical activity engagement among freshman students in terms of:
    1.1. autonomy;
    1.2. competence; and
    1.3. relatedness.
2. Assess the level of well-being among freshman students in terms of:
    2.1. academic well-being;
    2.2. social well-being; and
    2.3. emotional well-being.
3. Determine whether statistically significant relationships exist between physical activity engagement and:
    3.1. academic well-being;
    3.2. social well-being; and
    3.3. emotional well-being.
4. Develop a proposed structured physical activity program based on the findings of the study.

Research Questions

This study sought to answer the following questions:

1. What is the level of physical activity engagement among freshman students at Kolehiyo ng Lungsod ng Lipa in terms of:
    1.1. autonomy;
    1.2. competence; and
    1.3. relatedness?
2. What are the levels of well-being among freshman students in terms of:
    2.1. academic well-being;
    2.2. social well-being; and
    2.3. emotional well-being?
3. Is there a statistically significant relationship between physical activity engagement and:
    3.1. academic well-being;
    3.2. social well-being; and
    3.3. emotional well-being?
4. Based on the findings of the study, what structured physical activity program may be proposed for freshman students at Kolehiyo ng Lungsod ng Lipa?

Null Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

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H_0: There is no statistically significant relationship between physical activity engagement and (a) academic well-being, (b) social well-being, and (c) emotional well-being among freshman students at Kolehiyo ng Lungsod ng Lipa.

METHODOLOGY

Research Design

A quantitative descriptive-correlational design was used to describe physical activity engagement (autonomy, competence, relatedness) and academic, social, and emotional well-being, then test the associations between engagement and each well-being domain.

The variables were observed without manipulation or intervention. Findings are interpreted as associations, not cause-and-effect relationships.

Population and Sampling

The respondents were 110 freshman BSED students enrolled at KLL in AY 2024–2025. Total population enumeration invited all eligible students; all 110 completed the questionnaire and were included in the analysis.

Instruments

A structured questionnaire assessed physical activity engagement (autonomy, competence, relatedness) and well-being (academic, social, emotional).

Academic well-being was measured using the 31-item Academic Well-Being Questionnaire (AWBQ), attributed in the instrument documentation to Tuominen-Soini et al. (2012). It covers school value, academic burnout, academic satisfaction, and homework engagement.

Social well-being was assessed using a 15-item Social Well-Being Scale based on Keyes (1998), covering integration, acceptance, contribution, actualization, and coherence.

Emotional well-being was assessed using the 14-item Warwick-Edinburgh Mental Well-Being Scale (WEMWBS; Tennant et al., 2007), which measures positive mental well-being.

The physical activity section assessed autonomy, competence, and relatedness. Documentation indicates that its items drew on the research questions, literature, and existing instruments; the exact source instrument, if any, requires confirmation from the original questionnaire records.

Previously established instruments or instrument-based items were used as documented. No additional expert validation or new reliability testing was conducted; therefore, no new validity or reliability coefficients are claimed.

Data Collection Procedure

Permission was obtained from KLL authorities. The researcher explained the study's purpose, voluntary participation, confidentiality, and research use of responses before administering the questionnaires.

Questionnaires were administered and retrieved on July 22, 2025. All 110 respondents completed them, and all responses were analyzed.

Treatment of Data

Data were organized and analyzed using descriptive and inferential statistics. Frequencies and percentages summarized profile information; weighted means described engagement and well-being levels.

Weighted means summarized autonomy, competence, relatedness, and the three well-being domains, using the questionnaire's response-scale interpretation.

Chi-square tests of independence examined associations between physical activity engagement and academic, social, and emotional well-being at $\alpha = .05$. A p-value below .05 indicated significance; a value above .05 indicated no statistically significant association.

The analyses informed interpretation and development of the proposed KLL Holistic Well-Being Movement Initiative.

Ethical Considerations

Permission was secured from school authorities. Respondents were informed about the study and gave informed consent; participation was voluntary, with the right to decline or withdraw. Responses were kept confidential and used only for research. No formal research ethics committee approval is claimed.

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RESULTS AND DISCUSSION

Level of Physical Activity Engagement

Table 1
Levels of Physical Activity Engagement of Freshman Students (N = 110)

Dimension	Composite Mean	Interpretation
Autonomy	3.40	High
Competence	3.34	High
Relatedness	3.55	Very High

As presented in Table 1, relatedness obtained the highest composite mean (3.55, Very High), whereas autonomy (3.40) and competence (3.34) were both interpreted as High. This pattern indicates that respondents most strongly endorsed the social-connection dimension of physical activity engagement among the three dimensions assessed. In the context of Self-Determination Theory (SDT), relatedness concerns feeling connected to and accepted by others. Its relatively higher rating is consistent with the relevance of peer interaction, shared participation, and belonging in group-based physical education and recreational settings. The result suggests that opportunities to participate with classmates may be a meaningful feature of students' reported engagement; however, the questionnaire did not separately measure the quality of peer relationships or identify which activities generated this sense of connection.

SDT also clarifies why the three dimensions should be considered together rather than treated as interchangeable. Autonomy concerns perceived choice, competence concerns perceived effectiveness, and relatedness concerns social connection. Although all three dimensions received favorable interpretations, the comparatively lower competence mean suggests a useful area for instructional attention not evidence that students lack ability or confidence. Bureau et al. (2022) found that psychological-need-related factors are relevant to students' autonomous and controlled motivation. Applied cautiously to the present findings, this supports designing PE experiences that offer meaningful activity choices, progressive skill challenges, and cooperative tasks. The present study measured reported engagement dimensions, not actual activity frequency, fitness, performance, or the specific classroom practices that may have shaped these ratings.

For PE instruction, the pattern supports providing varied activities in which students can choose among suitable options, experience achievable skill progression, and work with peers in supportive groups. Instructors may use cooperative games, small-sided sports, dance, and individual fitness activities to create multiple entry points for participation. Such approaches are practical implications of the descriptive pattern; their effects on engagement or well-being would need to be evaluated rather than assumed.

The findings provide a descriptive account of the respondents' reported physical activity engagement. The relatively high rating for relatedness may be relevant to the organization of physical education and recreational activities that provide opportunities for participation and social interaction. However, the composite means alone do not establish the respondents' actual physical activity frequency, fitness levels, or performance in sports. Likewise, the lower relative rating for competence does not, by itself, establish that students lacked confidence or had difficulty performing high-intensity activities.

Level of Students' Well-Being

Table 2
Levels of Students' Well-Being (N = 110)

Domain	Composite Mean	Interpretation
Academic Well-Being	3.32	High
Social Well-Being	3.48	High
Emotional Well-Being	3.55	Very High

As shown in Table 2, emotional well-being had the highest mean (3.55, Very High), followed by social well-being (3.48, High) and academic well-being (3.32, High). The pattern indicates that respondents rated their emotional well-being more favorably than the other measured domains, while academic well-being received the comparatively

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lowest rating. These are group-level self-reports and should not be interpreted as clinical assessments or as evidence that individual students were free from emotional or academic difficulties. Likewise, the difference between domain means is descriptive; no inferential comparison among the three means was reported.

The domain pattern is compatible with a multidimensional understanding of student well-being. Cristobal and Bance's (2021) BLOOMS Model similarly treats student well-being as involving interconnected academic, psycho-emotional, physical, social, and spiritual dimensions. The present study assessed academic, social, and emotional domains only, so its results should not be generalized to the unmeasured dimensions of that model. Campoamor-Olegario et al. (2025), in a large study of Filipino tertiary students, also reported that associations between health behaviors and well-being components were not uniform across all dimensions. This offers a relevant local comparison and cautions against assuming that one favorable domain necessarily predicts another.

The Biopsychosocial Model provides a complementary interpretation: academic, social, and emotional well-being reflect psychological and social experiences that may interact with broader physical and environmental conditions. In this study, however, the biological dimension was not assessed through clinical or physiological indicators. The model is therefore used as a conceptual lens for understanding the multidimensional nature of well-being, not as evidence that biological, psychological, or social pathways were measured or tested.

For student development and campus wellness planning, the results support maintaining a balanced approach rather than focusing exclusively on physical activity or a single well-being domain. PE instructors and student-support units may coordinate activities with academic support, peer-connection opportunities, and accessible wellness resources. The relatively lower academic well-being mean can inform further inquiry into students' academic experiences, but the current data do not identify the specific academic pressures responsible for that rating.

These results describe the respondents' reported well-being according to the study's measurement instrument. They may inform discussions about student wellness in higher education, including the importance of considering academic, social, and emotional dimensions when planning student-support activities. However, the composite means do not establish the presence of academic burnout, emotional difficulties, or problems with social trust. Such claims would require additional findings that directly measure and support those conditions.

Relationship Between Physical Activity Engagement and Students' Well-Being

Table 3
Test of the Relationship Between Physical Activity Engagement and Students' Well-Being

Variables	χ^2	*p*-value	Statistical Decision	Conclusion
Physical Activity Engagement and Academic Well-Being	682.500	.183	Fail to reject H_0	Not statistically significant
Physical Activity Engagement and Social Well-Being	183.750	.207	Fail to reject H_0	Not statistically significant
Physical Activity Engagement and Emotional Well-Being	129.500	.261	Fail to reject H_0	Not statistically significant

As presented in Table 3, the chi-square tests did not identify statistically significant associations between physical activity engagement and academic well-being ($\chi^2 = 682.500$, $p = .183$), social well-being ($\chi^2 = 183.750$, $p = .207$), or emotional well-being ($\chi^2 = 129.500$, $p = .261$). Because all reported p-values exceeded the .05 significance level, the null hypotheses were not rejected. Within this sample and the operational definitions and analyses used, the study therefore did not find sufficient statistical evidence of an association between the measured engagement and any of the three well-being domains.

These nonsignificant results require a measured interpretation. They do not prove that physical activity engagement and well-being are unrelated in all populations or circumstances, nor do they rule out associations that may emerge with different measures, samples, or study designs. A nonsignificant test may reflect a genuinely small or inconsistent association, variation within the sample, the way the constructs were categorized or measured, or limited sensitivity of the analysis. The manuscript does not report effect sizes, degrees of freedom, or the underlying cross-tabulations; consequently, the magnitude and pattern of any possible association cannot be evaluated from the p-values alone. The chi-square results should therefore be interpreted as a lack of statistically significant evidence in this dataset, not as proof of no relationship.

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National Book Development Board (NBDB) Registration as Book Publisher (Print & Digital): 6312
PRC-CPD Accredited Provider: PTR-2025-749
Print ISSN: 3116-3882
Electronic ISSN: 3116-3890

The findings can be placed alongside the broader literature without treating different studies as directly equivalent. Babaeer et al. (2022) described the evidence connecting university students' physical activity, sedentary behavior, and educational outcomes as complex and methodologically varied. Campoamor-Olegario et al. (2025), using a different sample, framework, and regression approach among Filipino tertiary students, found that associations varied across well-being components; notably, some associations involving physical exercise and relationship-related scores were not significant. These studies reinforce the point that associations may depend on the outcome domain, operationalization, and analytic approach. Huang et al. (2024) reported potential mental-health benefits in undergraduate physical-activity interventions, but intervention evidence does not directly contradict the present cross-sectional correlational result: an intervention study examining change over time addresses a different question from a test of association among self-reported variables at one point in time.

Several design features further define the scope of interpretation. The respondents were 110 freshman BSED students from one institution, and the measures were questionnaire-based self-reports. The design did not manipulate physical activity or follow students over time. In addition, the study's engagement measure captured autonomy, competence, and relatedness rather than objective activity volume, intensity, or duration. The analyses also did not test potential moderators or confounding variables such as sleep, academic workload, or access to facilities. These considerations are not demonstrated explanations for the nonsignificant results; they identify limits of the present design and directions for future research.

For practice, the nonsignificant findings mean that the proposed physical activity program should not be presented as a proven means of improving academic, social, or emotional well-being. The program may still be justified as an educational and health-promotion opportunity, but implementation should include clear objectives, participation monitoring, and pre- and post-program evaluation. Future studies could use larger and more diverse samples, retain continuous or appropriately categorized measures, report effect sizes and confidence intervals, and employ longitudinal or intervention designs to examine whether changes in activity engagement correspond with changes in well-being.

The present results should not be viewed as a direct contradiction of intervention-based or broader youth research. Lubans et al. (2016) reviewed evidence on potential cognitive and mental-health mechanisms but noted substantial heterogeneity and limitations in the available studies. Huang et al. (2024) likewise emphasized variation across undergraduate interventions. Differences in age group, design, measurement, activity exposure, and outcome definitions limit direct comparison with the current freshman sample.

Implications for Physical Education and Student Wellness

Although no statistically significant relationships were found, the descriptive results provide a basis for considering students' reported engagement and well-being in PE and campus wellness planning. Activities may encourage participation and interaction while accommodating students' needs and abilities.

The proposed KLL Holistic Well-Being Movement Initiative has three modules: Foundations of Fitness (Weeks 1–6), Sports and Social Connection (Weeks 7–12), and Wellness Integration and Resilience (Weeks 13–18). It is a planning framework, not a proven intervention. If implemented, its outcomes should be evaluated using defined indicators and appropriate pre- and post-program measures.

Limitations and Future Research

The sample was limited to 110 freshman BSED students at one institution, restricting generalizability. Self-report questionnaires may be affected by response or social-desirability bias, and the correlational design cannot establish causation.

Future studies may include multiple institutions and programs, use longitudinal or experimental designs, and examine clearly defined factors such as sleep, academic stress, and social support using appropriate measures.

Conclusions

Based on the findings, the following conclusions were drawn.

Respondents reported High engagement in autonomy (3.40) and competence (3.34), and Very High engagement in relatedness (3.55). Relatedness had the highest mean and competence the lowest; these ratings do not independently establish fitness or task-specific confidence.

Academic (3.32) and social (3.48) well-being were High, while emotional well-being (3.55) was Very High. Emotional well-being had the highest mean and academic well-being the lowest.

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No statistically significant relationships were identified between engagement and academic ($p = .183$), social ($p = .207$), or emotional well-being ($p = .261$) at $\alpha = .05$. This does not establish the absence of a relationship under all conditions; conclusions are bounded by the sample, measures, and analyses.

The KLL Holistic Well-Being Movement Initiative was proposed with modules on fitness foundations, sports and social connection, and wellness integration and resilience. Its implementation and effectiveness remain to be evaluated.

Recommendations

The following recommendations are based on the findings and conclusions:

1. For Kolehiyo ng Lungsod ng Lipa administrators: The institution may pilot the KLL Holistic Well-Being Movement Initiative with defined objectives, participation records, and appropriate engagement and well-being measures. Wider implementation should depend on evaluation.
2. For physical education instructors and sports practitioners: A variety of accessible activities may accommodate different interests and abilities. Instructors may obtain student feedback on their suitability.
3. For student affairs and wellness personnel: Activities combining physical participation and social interaction may be explored. Claims of improved well-being should follow outcome assessment.
4. For researchers: Studies may examine students across academic programs and institutions; larger, more diverse samples can test whether the present patterns recur.
5. For future investigators: Academic stress, sleep quality, social support, and lifestyle factors may be examined when supported by theory and appropriate measures.
6. For researchers evaluating the proposed initiative: A pilot may assess feasibility, participation, and outcomes using baseline and follow-up measures and a suitable comparison design where feasible.

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