



BRIDGING FITNESS BEHAVIOR GAPS: AN EDUCATIONAL VIDEO FOR NON-PE MAJORS

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ABSTRACT

Physical literacy requires not only fitness knowledge but also consistent health-related behaviors that support active lifestyles among university students. Despite the inclusion of PATHFit 1 in the curriculum, non-Physical Education (non-PE) majors often demonstrate inconsistent engagement in structured physical activity. This study examined the level of advanced fitness knowledge and identified factors contributing to low health-related behaviors among non-PE majors as the basis for developing an instructional fitness educational video intervention. A sequential explanatory mixed-methods design was employed, involving 163 first-year non-PE students from three higher education institutions in Bohol who completed a validated questionnaire covering nutrition, exercise, health and wellness, and hygiene. Results showed generally adequate fitness knowledge; however, exercise emerged as the weakest health behavior domain, indicating a gap between awareness and consistent practice. Follow-up interviews with eight participants revealed four key factors influencing low exercise engagement: physical and physiological limitations, low motivation and digital distractions, environmental and social constraints, and structural or resource-related barriers. These interconnected determinants contribute to a health behavior gap among non-PE majors. In response, an instructional fitness educational video was developed to provide practical, accessible, and context-responsive exercise guidance aimed at supporting improved physical activity participation.

KEYWORDS: *fitness educational video intervention, health behavior gap, advanced fitness knowledge, exercise participation, non-PE majors*

INTRODUCTION

Fitness knowledge is an essential component of physical literacy because it enables individuals to make informed decisions regarding physical activity and overall health. University students' physical activity habits and fitness levels are influenced by their understanding of fitness concepts, exercise principles, and health-related benefits. Research indicates that physical activity and fitness levels among university students vary widely due to differences in educational contexts and cultural practices related to physical activity. This variation suggests that many students may have limited fitness knowledge or inconsistent engagement in regular exercise. A systematic review on physical activity and physical fitness among university students reported that while overall levels may be satisfactory, there are notable variations and a continued need to strengthen awareness and participation in regular physical activity (Kljajević, 2021).

Health behavior also plays a significant role in determining individuals' well-being, as it is shaped by everyday decisions such as eating habits, physical activity, and lifestyle practices. The World Health Organization (2024) emphasizes that health behaviors contribute substantially to overall health outcomes, underscoring the importance of health literacy and informed decision-making. However, many higher education institutions provide limited structured opportunities for non-Physical Education (non-PE) students to deepen their understanding of fitness beyond required physical education courses. Rino et al. (2025) reported that university students

continue to exhibit gaps in fitness knowledge, and their physical activity levels often remain low even after completing physical education classes. Similarly, Villaganas (2025) identified gaps in cardiovascular and muscular endurance among PATHFit 1 students, suggesting areas where further support and educational resources may be beneficial. In response to these observed gaps, there is a growing interest in the use of educational materials that can support students' understanding of fitness concepts in an engaging and accessible manner. Previous studies have shown that video-based instructional materials can enhance learning experiences and support the acquisition of skills in physical education contexts (Culajara, 2023; Xiao et al., 2024). Tolentin et al. (2025) found that video modeling in tertiary physical education can facilitate observational learning and increase students' engagement with course content. Likewise, Nugroho (2025) reported that instructional videos have been used to supplement fitness-related learning tasks and support students' understanding of physical fitness concepts.

Despite these findings, limited research has focused on the development of fitness educational videos that are specifically informed by the fitness knowledge levels and health behavior patterns of non-PE students enrolled in general fitness courses such as PATHFit 1. Most existing studies concentrate on Physical Education majors or emphasize the technical implementation of physical education activities, rather than examining the specific learning needs of non-PE college students. Moreover, few studies integrate assessments of students' fitness knowledge and



health behavior as a basis for designing instructional fitness materials.

Given this gap, the present study focuses on assessing the level of advanced fitness knowledge and identifying factors influencing health behavior among non-PE majors enrolled in PATHFit 1. The findings of the study serve as the basis for the development of an instructional fitness educational video that reflects students' identified needs, limitations, and everyday contexts. Rather than measuring behavioral change, the study aims to provide a structured and evidence-informed educational resource that may support fitness learning and awareness among non-PE students within the university setting.

Fitness Education Curriculum Model by Jayne D. Greenberg (2021) is a model that is concerned with how and why to attain and sustain good health-related physical fitness. It aims at assisting students to learn the knowledge, skills, and values and behaviors required to take on a physically active lifestyle and learn physical activity habits and other healthy lifestyle behaviors that result in health and wellness. The model also underlines its relevance to college students because it teaches them how to be able to cope and handle the stress that comes with college life. Integrating this model in the study, this provides a systematic frame in developing a fitness instructional video tailored by the researchers that ensures that the content does not only encourage physical activity but also a more profound understanding of holistic wellness among non-PE majors.

Moreover, instructional video is particularly important in the higher education setting as it offers structured demonstrations, guided practice, and easy understanding to learners. The seven-principle model proposed by Ou, C., Joyner, D.A., & Goel, A.K. (2019) contains seven principles, which prove to be useful in designing such materials, as it focuses on four instructional methods: learning by example, learning by doing, adaptive feedback, and reflection to allow learners to comprehend something better and receive the necessary skills. There is also a sequencing principle in the model where activation of prior experience, demonstration of skills, application of skills, and integration of these skills into real-world activities, in which coherent and meaningful learning experiences are guaranteed. In the context of fitness education, the model will facilitate the creation of a pedagogically sound and interesting instructional video that will fill the missing knowledge of non-PE majors concerning advanced fitness knowledge and health-related behaviors, and will be in line with the aim of the study, the promotion of better knowledge and healthier practices among non-PE majors.

The alignment of these models ensures that the assessment and development of the video intervention are grounded in proven pedagogical strategies, increasing the likelihood of improving targeted health behaviors. Ultimately, these theoretical foundations provide a strong basis in developing educational video that promotes holistic wellness among non-PE major students. The present study shows alignment with the United Nations Sustainable Development Goals (SDGs), particularly SDG 3: Good Health and Well-Being and SDG 4: Quality Education. These global objectives provide a

broader context for creating health-promoting instructional materials in higher education (The Global Goals, 2025).

The SDG 3 encourages healthy lives, illness prevention, and the comprehensive well-being of people (United Nations, 2023). The aim of the current study is in line with this objective because it will create a video about fitness education that will promote physical activity, nutrition literacy, and hygiene among non-PE majors. According to the World Health Organization (2024), physical inactivity and lifestyle diseases continue to be the health threats of the world. Thus, it is possible to enhance the existing problem of non-communicable disease rates among young adults by introducing the idea of fitness education into the university curriculum, which would assist in behavioral change at a younger age.

The Fitness education emphasizes helping students acquire the knowledge and higher-order understanding in health-related physical fitness, physical activity habits, and other healthy lifestyles that lead to health-related physical fitness and wellness. It is intended to guide the customization of content to meet students' needs (NASPE, 2025). Fitness education is an important aspect of tertiary education, as it can help students develop lifelong habits that lead to a healthy lifestyle by acquiring knowledge, skills, and attitudes to make informed choices about health and live active lifestyles even after university life.

Hygiene is a fundamental component of promoting health and well-being. As in the study of Al-Rifaa, Al Haddad, and Qasem (2018), hygiene comes from a Greek word, "Hygeia," referring to the goddess symbolizing health and cleanliness. Practicing personal hygiene not only prevents illness but also fosters a sense of self-confidence and self-esteem. The Centers for Disease Control and Prevention (2025) also emphasizes that hygiene-related behaviors, such as handwashing and maintaining cleanliness, are key practices that contribute to better health outcomes.

According to the World Health Organization (2024), these behaviors are shaped by several determinants including knowledge, motivation, and environmental factors. Knowledge allows individuals to make informed health choices, while motivation sustains the desire to act consistently on those choices. Environmental conditions, such as social support, institutional programs, and access to health resources, also play a vital role in shaping consistent health practices.

Furthermore, instructional videos encourage self-paced and flexible learning, allowing students to revisit complex lessons as needed. A recent study published in BMC Medical Education found that the use of video instruction enhanced knowledge, retention, motivation, and practical skills among university students during flexible learning periods (Ott, T. et. al., (2024). Similarly, Ou, Joyner, and Goel (2019) highlighted that video-based instruction increases engagement and promotes deeper understanding among learners in both online and blended learning environments. These findings show how the accessibility of instructional videos supports inclusive education by accommodating diverse learning needs and preferences. When used in health and fitness education, videos serve as effective tools for demonstrating proper techniques, visualizing movement,



and reinforcing theoretical concepts. Consequently, they provide a dynamic learning experience that enhances comprehension, encourages active participation, and bridges the gap between knowledge and practice among students in higher education.

Video-based learning may enhance engagement, knowledge, understanding, motivation, and the ability to store information over a longer period of time. Also, video features make the videos of high quality. Long et al. (2023) The utilization of instructional videos will improve both the teacher and student positions in the achievement of effective teaching and learning outcomes in various areas of learning. In the study of Ilesanmi (2023), the results indicate that the implementation of video-based instruction in the teaching scenarios not only contributes to the cognitive and affective learning outcomes, but also to the innovative and student-oriented teaching methods, which are congruent with 21st-century teaching methods.

The development of the video intervention is based on the concept of instructional design and consistent with the Cognitive Theory of Multimedia Learning by Richard Mayer (1997), which the theory describes how an individual acquires information through effective multimedia learning. First, there are two channels, the audio and the visual, through which information is processed. Second, all channels have a restricted amount of information that they can handle at a time. Finally, learning is considered to be an activity that includes the filtering, selection, organizing, and integrating of new information with previously known information of the learners. This theory asserts that the effectiveness of video-based learning is higher when the visual demonstrations are supported with the help of a clear auditory explanation because it increases the level of understanding, involvement, and memorization (McGraw Hill Canada, 2019). Supported by Fiorella (2021), instructional videos align with the Cognitive Theory of Multimedia Learning helps students comprehend and retain knowledge more effectively when information is presented through both verbal and visual channels, supporting dual processing, enabling learners to organize and integrate information more efficiently. This multimedia strategy may be used to inspire the students to engage in healthier lifestyles by reducing sedentary lifestyles and by engaging in physical exercises that will enhance their well-being.

Moreover, research highlights the value of theoretical frameworks in designing video interventions. Meerits, Tilga, and Koka (2025) reported that web-based programs using short instructional videos grounded in Self-Determination Theory (SDT) improved students' perceived autonomy, motivation, and intention to participate in physical activity (BMC Public Health). This aligns with broader findings that autonomy-supportive and need-satisfying interventions enhance internalized motivation and sustained behavior change. For non-PE majors, who often experience gaps in fitness knowledge, nutrition, and wellness practices, these results suggest that an evidence-based educational video intervention can effectively bridge knowledge and behavior gaps, provided it is theoretically grounded, engaging, and carefully structured for their context.

In the Philippine context, Acampado and Valenzuela (2018) examined the physical activity and dietary habits of Filipino college students and found that one-third of the population engaged in regular physical activity. Believe that the knowledge in terms of health benefits, enjoyment, and confidence in performing exercises was used as motivating factors for those who were physically active. But still, there is a significant proportion among college students who remain inactive due to a lack of time. Furthermore, the study also identified that one in every three students exhibited below-average to poor dietary habits. It has been demonstrated that students commonly face constraints such as a lack of time, low motivation, and insufficient supportive environments, which are key barriers influencing students' ability to sustain healthy behaviors (Ochs, et al.,2024). Taken together, these studies emphasize that promoting healthy lifestyles among college students requires not only knowledge and motivation but also supportive environments that enable sustained behavior change. Recognizing these barriers through qualitative interviews helps ensure that the educational video is informative and responsive to students lived realities

Anchored on the Seven Principle Model of instructional design and the Fitness Education Curriculum Model, the literature emphasizes that effective fitness education must integrate sound pedagogy with health-related content to promote sustainable lifestyle behaviors among non-PE majors. These theoretical foundations support the assessment of advanced fitness knowledge in nutrition, exercise, health behavior and wellness principles, and hygiene, which are critical components of holistic wellness but are often insufficiently developed among college students outside Physical Education programs. Empirical studies reveal that despite basic awareness, students commonly exhibit low performance in specific health behaviors, suggesting gaps between knowledge and actual practice. Such gaps are influenced by identified factors including low motivation, limited self-efficacy, time constraints, and environmental barriers that hinder consistent engagement in healthy behaviors. Health behavior theories explain that without targeted, engaging interventions, knowledge alone is unlikely to translate into sustained behavioral change. Consequently, the development of an instructional fitness education video emerges as a theoretically grounded response to these identified knowledge and behavior gaps, serving as an accessible and structured intervention to enhance fitness literacy and promote healthier practices among non-PE majors.

Statement of the Problem

This study aims to develop an instructional fitness education video. It will also determine the level of advanced fitness knowledge and the factors influencing health behavior among non-PE majors during the first semester of the SY 2025-2026.

1. What is the level of advanced fitness knowledge among non-PE majors based on adapted standardized questionnaires from Charles Corbin et al. (covering nutrition, exercise, and wellness) and Al-Rifaai, et al. (personal hygiene)?
2. Which specific health behavior received the lowest score among the respondents?



3. What factors contribute to the low scores in health behavior as identified through interviews with respondents who scored low?
4. What instructional fitness education video can be developed to address the identified gaps in health behavior in knowledge and practices?

METHODOLOGY

This study used a sequential explanatory mixed-methods design to determine the fitness knowledge and health-related behaviors of non-PE majors in four areas: Nutrition, Exercise, Health and Wellness, and Hygiene.

This study was conducted in three higher education institutions located in Tagbilaran City, Bohol. These institutions include one private sectarian university, one state university (main campus), and one local government-supported college. The selected institutions were chosen because all of them offer the Physical Activity Towards Health and Fitness (PATHFit) course, which is a required subject for non-Physical Education majors.

The participants of the study were first-year undergraduate non-Physical Education majors officially enrolled in the PATHFit 1 course during the first semester of Academic Year 2025–2026 across three higher education institutions.

The research instrument was designed to measure fitness knowledge and health-related behaviors across four domains: Nutrition, Exercise, Health and Wellness, and Hygiene. A pilot test was conducted among 25 undergraduate students enrolled in a higher education institution offering PATHFit 1 to determine the reliability of the modified instrument.

After receiving the Ethics Review Board (ERB) clearance, the researchers initially issued formal request letters, signed by the Dean of the College of Education, to the participating higher education institutions to determine the number of student participants to be included in the study. Upon confirmation of the number of eligible participants from each

institution, the researchers submitted a formal letter of permission to conduct data gathering to the Dean of the College of Education of Holy Name University, together with the approved ERB clearance. After approval, the Dean granted the researchers the authority to distribute the permission letters to the participating institutions.

The overall data gathering process was carried out through proper coordination with the administrators and PATHFit instructors of each participating institution. Both online and printed questionnaires were utilized to ensure accessibility and accuracy in the collection of the required data.

The qualitative data obtained from the semi-structured interviews were analyzed using the Foundational Model of Qualitative Data Analysis (FMQDA), Kalpokaite, N., & Radivojevic, I. (2019). Through this process, the researchers were able to identify patterns and explanations that helped clarify the quantitative findings and served as the basis for developing the instructional fitness educational video.

The analysis was conducted through the following steps: inspection, coding, categorization, and modeling.

This research employs artificial intelligence tools in selected stages of the research process, including transcription support, language refinement, and manuscript organization. The AI tools used, such as Grammarly, Quillbot, Turnitin, and ChatGPT, were utilized to assist in improving clarity, coherence, grammar checking, and structural organization of the manuscript. The researchers affirm full responsibility for the ethical and responsible use of AI throughout the study. The integration of AI followed principles of transparency, accountability, and academic integrity. AI tools were not used to generate research findings, fabricate data, or replace critical analysis. All outputs were carefully reviewed, validated, and refined by the researchers.

RESULTS AND DISCUSSIONS

The results are presented in tables with their corresponding descriptions and interpretations.

Table 1. Level of Advanced Fitness Knowledge of Non-PE Majors

Domains	Composite Mean	Description
Nutrition Domain	4.07	Knowledgable
Health and Wellness Domain	4.28	Very Knowledgable
Exercise Domain	3.43	Often
Hygiene Domain	4.38	Always

The findings indicate that non-PE majors possess strong cognitive awareness of health-related concepts, particularly in hygiene, nutrition, and overall wellness. This suggests that health education exposure and general health

information dissemination may have been effective in developing students' theoretical understanding of healthy lifestyle practices.



Table 4. Health Behavior Lowest Mean Score

Items with lowest mean score according to their scores	Mean score	DESCRIPTION
10. I still engage in physical activity even when the weather or my schedule makes it difficult.	3.00	Sometimes
9. I prepare and use available equipment when doing my physical activities (e.g., dumbbells, mats).	3.25	Sometimes
4. I do muscle-strengthening or resistance exercises at least 4 days a week.	3.28	Sometimes
2. I perform vigorous exercises that raise my heart rate for about 20 minutes at least 3 times a week.	3.33	Sometimes

The results reveal that while non-PE majors may possess awareness of the importance of exercise, this awareness does not consistently translate into regular and sustained participation in physical activity.

The factors contributing to students' low health behavior scores were identified through their responses to four key statements on the questionnaire: (1) performing vigorous exercise, (2) doing muscle-strengthening exercises, (3) preparing and using equipment, and (4) engaging in physical activity despite weather or schedule challenges.

Theme 1. Physical and Physiological Limitations, describes how bodily discomfort, low endurance, and concerns about physical strain prevent students from engaging in vigorous or strengthening exercises.

Theme 2. Low Motivation, Competing Interests, and Digital Distractions, captures how students' low motivation, weak interest in exercise, and attraction to digital entertainment contribute to their low scores in health behavior.

Theme 3. Environmental and Social Constraints, captures how external conditions and social influences, specifically parental control, household responsibilities, and weather-related constraints, prevent students from sustaining physical activity when circumstances become challenging.

Theme 4. Structural and Resource Barriers, refers to practical limitations that prevent students from engaging regularly in physical activity. These include lack of exercise equipment, limited exposure to structured routines, insufficient time, and academic workload.

In line with the objective of developing an instructional fitness video informed by the study findings, the video was designed using the Seven-Principle Model proposed by Ou, Joyner, and Goel (2019). This model guided the design, structure, and sequencing of the content to promote meaningful learning through demonstration, guided practice, adaptive feedback, reflection, and real-life application.

Table 5. Framework of the Instructional Fitness Video Based on the Seven-Principle Model

Component of the Model	Principle / Method	Application in the Instructional Video
Instructional Methods	Learning by Example	The exercises, such as jumping jacks and wall push-ups, are visually demonstrated to allow learners to observe correct form and execution.
	Learning by Doing	Viewers are encouraged to follow along with the exercises while watching the video.
	Adaptive Feedback	Verbal cues are provided, including reminders on pacing, breathing, resting when tired, and starting with fewer repetitions.
	Reflection	Learners are prompted at the end of the video to reflect on small physical activities they can commit to regularly.
Instructional Sequence	Activation	The video begins by connecting the topic to common challenges experienced by college students, such as stress, limited time, and low energy.
	Demonstration	Each exercise is clearly shown before encouraging learners to participate.
	Application	Learners are guided to perform the exercises through follow-along segments with verbal instructions.
	Integration	The video emphasizes incorporating exercises into daily routines, such as during study breaks or indoor activities.
Instructional Presentation	Personalization	The narration uses a supportive and student-friendly tone that acknowledges real-life barriers faced by non-PE majors.
	Multimedia	The video combines voice-over narration, visual demonstrations, text overlays, and on-screen cues to enhance understanding.



The instructional fitness video was created as a supplementary learning material to address gaps in exercise participation and fitness behavior among non-PE major college students. Findings from the study revealed that exercise was the lowest-scoring domain, particularly in vigorous physical activity and muscle-strengthening exercises.

Guided by these findings, the researchers developed a beginner-friendly instructional exercise video intended for non-PE majors. The exercises do not

require heavy equipment or gym spaces and can be done indoors, making them suitable for students with busy schedules or limited facilities.

To ensure accessibility and ease of use, the instructional fitness video was uploaded on YouTube, allowing students, instructors, and future researchers to easily view and access the material. The QR code provides direct access to the instructional fitness video uploaded on YouTube. This allows easy viewing and reference for instructors, students, and future researchers. The instructional fitness video is divided into segments using timestamps to guide viewers through the content.

Table 6. Timestamped Description of the Instructional Fitness Video

Timestamp	Video Segment	Description
00:00	Introduction and Purpose of the Video	Introduces the importance of physical activity and explains the purpose of the video based on the study findings.
00:35	Vigorous Activity: Jumping Jacks	Demonstrates jumping jacks as a beginner-friendly vigorous activity to help increase heart rate.
00:51	Follow-Along Tips and Pacing	Encourages learner participation while providing pacing, breathing guidance, and rest options as adaptive feedback.
01:14	Muscle Strengthening: Wall Push-Up	Demonstrates wall push-ups as a basic muscle-strengthening exercise suitable for beginners without equipment.
01:41	Real-Life Application and Indoor Exercise	Shows how exercises can be performed indoors despite barriers such as limited time, unfavorable weather, or lack of equipment.

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