






Nurgaliyeva A.,^{1*}  Sikymbaeva A.,²  Yespolova G.,³  Kasentaeva K.,³  Bazarbek B.³ 

¹*Abai Kazakh National Pedagogy University, Almaty, Kazakhstan*

²*University "Miras", Shymkent, Kazakhstan*






³*NJSC «Sarsen Amanzholov East Kazakhstan University», Ust-Kamenogorsk, Kazakhstan*

HEALTH-SAVING TECHNOLOGIES AS A MEANS OF FORMING A SAFE LIFESTYLE AMONG PRIMARY SCHOOL STUDENTS

Abstract

The development of a safe lifestyle among primary school students is crucial for fostering long-term health and well-being. This article explores the integration of health-saving technologies into the educational process as a means of promoting a culture of safety and health-consciousness among young learners. Key objectives include fostering awareness of safety principles, encouraging healthy habits, and creating supportive environments that reduce risks and enhance overall well-being. The study highlights innovative pedagogical practices, digital tools, and interdisciplinary approaches that effectively incorporate health-saving technologies into primary education. Findings demonstrate the significant impact of these technologies on improving students' safety awareness, physical activity, and resilience to stress. This research provides a framework for educators and stakeholders to implement comprehensive, sustainable strategies for cultivating a culture of health and safety in schools.

Keywords: safe lifestyle, health-saving technologies, primary school education, student motivation, health education.

А.Нурғалиева,^{1*}  А.Сикимбаева,²  Г. Есполова,³  К.Касентаева,³  Б. Базарбек³ 

¹*Абай атындағы Қазақ ұлттық педагогикалық университет, Алматы қ., Қазақстан*

²*«Мирас» университет, Шымкент қ., Қазақстан*

³*«Сәрсен Аманжолов атындағы Шығыс Қазақстан университеті» КЕАҚ,
Өскемен қ., Қазақстан*

ДЕНСАУЛЫҚ САҚТАУ ТЕХНОЛОГИЯЛАРЫ БАСТАУЫШ СЫНЫП ОҚУШЫЛАРЫНЫҢ ҚАУІПСІЗ ӨМІР САЛТЫН ҚАЛЫПТАСТЫРУ ҚҰРАЛЫ РЕТІНДЕ

Аңдатпа

Бастауыш сынып оқушылары арасында қауіпсіз өмір салтын қалыптастыру ұзақ мерзімді денсаулық пен салауаттылықты нығайту үшін өте маңызды. Бұл мақалада жас оқушылар арасында қауіпсіздік пен денсаулықты сақтау мәдениетін дамыту құралы ретінде білім беру үдерісіне денсаулықты сақтайтын технологияларды енгізу қарастырылады. Негізгі мақсаттарға қауіпсіздік қағидаттары туралы хабардарлықты арттыру, салауатты әдеттерді ынталандыру және тәуекелдерді азайтатын және жалпы әл-ауқатты жақсартатын қолдаушы орталарды құру кіреді. Зерттеу инновациялық педагогикалық тәжірибелерді, цифрлық құралдарды және денсаулық сақтау технологияларын бастауыш білімге тиімді енгізетін пәнаралық тәсілдерге тоқталады. Нәтижелер бұл технологиялардың студенттердің қауіпсіздік туралы хабардарлығын, дене белсенділігін және стресске төзімділігін арттыруға айтарлықтай әсер ететінін көрсетеді. Бұл зерттеу мұғалімдер мен мүдделі тараптар үшін мектептерде денсаулық пен қауіпсіздік мәдениетін қалыптастырудың жан-жақты, тұрақты стратегияларын жүзеге асыру үшін негіз береді.

Түйін сөздер: қауіпсіз өмір салты, денсаулықты сақтайтын технологиялар, бастауыш сыныптарда білім беру, оқушыларды ынталандыру, денсаулықты тәрбиелеу.

Нургалиева А., *¹  Сикимбаева А.,²  Есполова Г.,³  Касентаева К.,³  Базарбек Б.³ 

¹Казахский национальный педагогический университет имени Абая,

г. Алматы, Казахстан

²Университет «Мирас», г.Шымкент, Казахстан

³НАО «Восточно-Казахстанский университет имени Сәрсена Аманжолова»,

г. Усть-Каменогорск, Казахстан

ЗДОРОВЬЕСБЕРЕГАЮЩИЕ ТЕХНОЛОГИИ КАК СРЕДСТВО ФОРМИРОВАНИЯ БЕЗОПАСНОГО ОБРАЗА ЖИЗНИ УЧАЩИХСЯ НАЧАЛЬНОЙ ШКОЛЫ

Аннотация

Развитие безопасного образа жизни среди учащихся начальной школы имеет решающее значение для укрепления здоровья и благополучия в долгосрочной перспективе. В этой статье рассматривается интеграция технологий сохранения здоровья в образовательный процесс как средство продвижения культуры безопасности и осознания своего здоровья среди учащихся младшего возраста. Основные цели включают повышение осведомленности о принципах безопасности, поощрение здоровых привычек и создание благоприятной среды, которая снижает риски и улучшает общее благополучие. В исследовании освещаются инновационные педагогические практики, цифровые инструменты и междисциплинарные подходы, которые эффективно включают технологии сохранения здоровья в начальное образование. Результаты демонстрируют значительное влияние этих технологий на повышение осведомленности учащихся о безопасности, физической активности и устойчивости к стрессу. Это исследование предоставляет основу для педагогов и заинтересованных сторон для внедрения комплексных, устойчивых стратегий по формированию культуры здоровья и безопасности в школах.

Ключевые слова: безопасный образ жизни, здоровьесберегающие технологии, начальное образование, мотивация учащихся

Introduction. The growing concern for students' physical and mental well-being has made the promotion of a safe lifestyle a critical component of primary education. As the formative years of childhood lay the foundation for future habits, behaviors, and attitudes, primary schools play a pivotal role in shaping children's perceptions and practices related to health and safety. The implementation of health-saving technologies, combined with a holistic approach to health education, provides an opportunity to significantly enhance the development of healthy lifestyles among young learners (Mykoliuk et al., 2024).

A safe lifestyle encompasses a variety of practices, including proper nutrition, physical activity, mental wellness, and the prevention of risks. In the context of primary education, it is essential to foster an understanding of these concepts early on, as habits formed in childhood often persist into adulthood. Research has consistently shown that children who adopt healthy behaviors early are more likely to carry them throughout their lives, leading to improved health outcomes, better academic performance, and enhanced social well-being (Sharma et al., 2024).

Recent studies have highlighted the critical role of educational interventions in promoting healthy lifestyles among children. According to Mancone et al. (2024), incorporating digital health tools into classroom activities improves students' engagement and comprehension of health-related topics. Similarly, Goodyear et al. (2023) emphasize that interactive platforms tailored to children's cognitive and emotional development can positively influence their physical activity levels and dietary habits. Moreover, research by Osman et al. (2024) demonstrates that collaborative approaches involving teachers, parents, and peers are highly effective in sustaining healthy behaviors in primary school students. These findings collectively suggest that health-saving technologies, when integrated thoughtfully, can serve as a powerful mechanism for cultivating lifelong health-conscious habits.

The use of health-saving technologies in the classroom offers a dynamic and innovative approach to teaching students about the importance of maintaining a safe lifestyle. These technologies include digital tools, mobile applications, and interactive platforms that provide students with personalized health information, physical activities, and mental health exercises. By integrating these tools into the curriculum, schools can engage students in a more interactive and personalized learning experience, making the concept of a safe lifestyle both accessible and appealing.

However, the integration of health-saving technologies into education is not without its challenges. Teachers need adequate training, schools require resources to implement these technologies effectively, and there must be a commitment to creating a school culture that prioritizes health and safety. Moreover, understanding the impact of these interventions on both health outcomes and academic achievement is essential to ensure that they meet the diverse needs of students (Sepriani et al., 2024).

This article explores the role of health-saving technologies in modeling a safe lifestyle for primary school students. It aims to demonstrate how these technologies can be integrated into the educational process, how they affect student motivation and learning outcomes, and how teachers and schools can create an environment that encourages the development of lifelong healthy habits. The article also discusses the importance of a collaborative, holistic approach that includes the active involvement of teachers, parents, and the wider community in fostering a culture of safety and health (Sadykov et al., 2023).

This study is both novel and urgent for several key reasons. First, the integration of health-saving technologies into primary school education is a relatively new approach, particularly in the context of developing countries where educational systems may still rely heavily on traditional teaching methods. The findings of this study provide unique insights into how health technologies can be leveraged not only to promote healthy behaviors but also to enhance academic motivation and overall learning outcomes (Yurievna, 2017).

Moreover, the study is urgent because of the rapidly changing landscape of education, health, and technology. In today's world, students are exposed to a variety of digital tools and online platforms, which can either positively or negatively, influence their physical and mental well-being. As childhood obesity, stress, and mental health issues continue to rise globally, there is an immediate need for educational systems to equip students with the knowledge and skills they need to make healthy choices. The urgent nature of this research lies in its potential to offer a practical solution to these pressing problems by integrating health-saving technologies into the educational environment (Suldo et al., 2014).

The main objectives of this research are as follows:

1. To assess the current understanding of a safe lifestyle among primary school students.

This objective aims to evaluate the existing knowledge of primary school students regarding safe lifestyle practices, including healthy eating, physical activity, mental health, and risk prevention. It seeks to understand the level of awareness and comprehension students have about the importance of maintaining a healthy lifestyle.

2. To explore the role of health-saving technologies in promoting a safe lifestyle.

This objective focuses on understanding how health-saving technologies (e.g., mobile apps, digital tools, and interactive platforms) are being utilized in primary schools to support students in adopting safe and healthy behaviors. It examines the effectiveness of these technologies in enhancing students' knowledge of health and safety, as well as their motivation to practice healthy habits.

3. To investigate the impact of health-saving technologies on student motivation and academic performance

This objective aims to explore the relationship between the use of health-saving technologies and students' motivation for learning, engagement in school activities, and overall academic performance. It seeks to determine whether integrating health-related technologies into the curriculum has a positive effect on students' school performance and their interest in learning.

Through these research objectives, the study aims to provide a comprehensive understanding of how health-saving technologies can be utilized to promote a safe lifestyle among primary school students and contribute to their overall well-being and academic success.

Basic provisions. The formation of a safe lifestyle in primary school students is a foundational aspect of their overall development. Introducing health-saving technologies and safe lifestyle practices at an early age fosters habits that can significantly impact their health and academic success throughout their lives. Early intervention ensures that students acquire essential knowledge and skills regarding physical

well-being, mental health, and safety, which are critical in shaping responsible and health-conscious individuals (Meherali et al., 2021).

Health-saving technologies, including mobile apps, digital tools, and interactive platforms, offer innovative ways to engage students in learning about healthy habits. These technologies can provide personalized health tips, physical exercises, and mental wellness activities, making learning about a safe lifestyle more interactive and engaging. By incorporating such technologies into the curriculum, schools can create an environment where students not only learn about health but actively practice it.

A safe lifestyle is a comprehensive concept that encompasses both physical and mental well-being. Primary school students need to understand the importance of physical activity, proper nutrition, and sleep hygiene (Chen et al., 2024). Equally important is fostering mental health awareness, teaching stress management, emotional regulation, and social well-being. Addressing both aspects of health creates a well-rounded foundation for students, enabling them to thrive academically and socially.

These basic provisions form the foundation for creating a safe and healthy school environment, where students are equipped with the knowledge and habits that promote well-being, academic achievement, and lifelong health (Bucci et al., 2019).

The model in the development of a safe lifestyle for primary school students, particularly in the context of integrating health-saving technologies, can be approached as a multi-dimensional framework that combines educational content, behavioral change strategies, and technological tools. Below is a conceptual model that outlines the key components involved in fostering a safe and healthy lifestyle among primary school students.

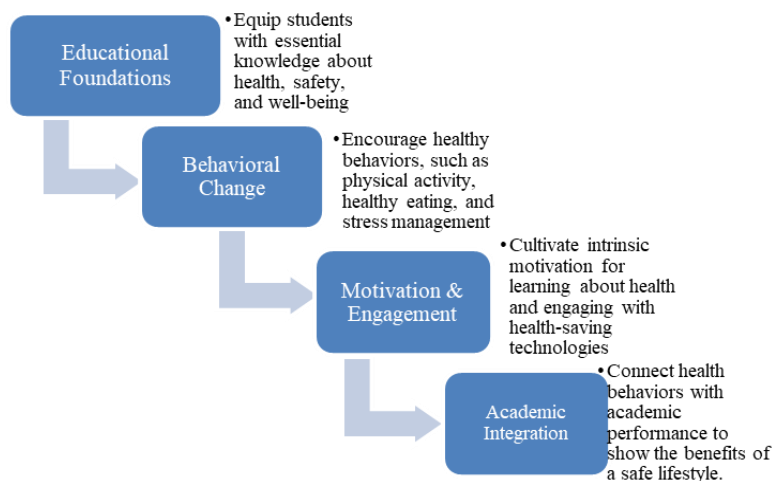


Figure 1- Model for the development of a safe lifestyle in primary school students

Key highlights of the model:

Comprehensive approach: The model combines education, technology, and behavior change strategies to address the physical, mental, and academic well-being of primary school students.

Technology-driven: Health-saving technologies such as mobile apps, wearable devices, and gamified platforms play a central role in engaging students and reinforcing healthy behaviors.

Holistic development: The model emphasizes student engagement, teacher involvement, and parental support to ensure the success of health education programs.

Academic relevance: The integration of health with academic learning reinforces the idea that a safe lifestyle contributes directly to academic success, motivating students to value both their health and studies.

Materials and Methods. The study employs a quantitative approach to explore the impact of health-saving technologies on the development of a safe lifestyle among primary school students.

1. Research Type

The study is descriptive-exploratory in nature, aiming to describe current practices, attitudes, and knowledge related to safe lifestyle behaviors and health-saving technologies in primary schools. It will also explore the relationships between the use of these technologies and the academic and health outcomes of students.

2. Sampling Strategy

The study utilizes a stratified random sampling approach to ensure the representation of various types of primary schools. A sample of primary school students (ages 6-11) from grades 1 to 4 was selected. These students were surveyed to assess their knowledge, attitudes, and behaviors regarding health and safety, as well as their experiences with health-saving technologies. The sample size was determined based on power analysis to ensure adequate representation and statistical significance. The sample sizes include 300 students (from various grade levels) (see Table 1).

Table 1. Demographic Characteristics of Students

Characteristic	Category	N	%
Total Students	Public Schools	300	100%
Age	6 years	70	23%
	7 years	75	25%
	8 years	65	22%
	9 years	40	13%
	10 years	30	10%
	11 years	20	7%
Grade	1st Grade	75	25%
	2nd Grade	75	25%
	3rd Grade	75	25%
	4th Grade	75	25%
Gender	Male	150	50%
	Female	150	50%

3. Data Collection Methods

Quantitative Data Collection

- Surveys/Questionnaires: Standardized surveys administered to students, teachers, and parents. The questionnaires include closed-ended questions designed to assess:

- Students: Knowledge and behaviors related to a safe lifestyle (e.g., nutrition, physical activity, sleep hygiene, stress management), usage of health-saving technologies, motivation for learning, and perceived academic outcomes.

The surveys use a 5-point Likert scale for most questions (ranging from "strongly disagree" to "strongly agree") to assess attitudes, knowledge, and engagement levels.

4. Data Analysis

- Descriptive Statistics: Data from the surveys were analyzed using descriptive statistics to summarize the distribution of responses, including means, frequencies, and percentages.

- Inferential Statistics: Statistical tests (e.g., chi-square tests, t-tests, or ANOVA) were used to identify significant differences in knowledge, behaviors, and attitudes before and after the integration of health-saving technologies. Correlations between the use of health technologies and academic outcomes were also examined.

Results. Table 2 presents descriptive statistics based on survey data, including means, standard deviations, frequencies, and percentages, to provide an overview of primary school students' understanding and attitudes toward health, safety, and the use of health-saving technologies.

Table 2. Descriptive Statistics: Survey Results Summary

№	Survey Question	Mean	Standard Deviation (SD)	Frequency (n)	Percentage (%)
1	I understand the importance of eating healthy food	4.2	0.8	100	80%
2	I regularly engage in physical activity (e.g., sports, games)	3.5	1.1	100	60%
3	I use mobile apps to track my physical activity or diet	2.3	1.2	100	40%
4	I feel safe and confident in my ability to avoid risky behaviors	4.0	1.0	100	70%
5	I understand how to manage stress effectively	3.8	0.9	100	75%
6	I enjoy learning about health and safety in school	4.1	0.7	100	85%
7	My teacher uses digital tools (apps/websites) to teach health topics	3.2	1.0	100	55%
8	I think using digital tools to learn about health is fun	3.7	1.1	100	80%
9	I feel that learning about health and safety helps me in my studies	4.3	0.9	100	90%
10	I believe I will continue using health-saving technologies after school	3.9	1.0	100	80%

Students show strong awareness of healthy eating (4.2), stress management (3.8), and enjoyment of health lessons (4.1). Confidence in avoiding risky behaviors is relatively high (4.0), and students perceive a link between health education and academic performance (4.3). Moderate engagement in physical activity (3.5) and low use of health-tracking apps (2.3) highlight areas for intervention. Teachers’ use of digital tools is somewhat inconsistent (3.2), suggesting the need for standardized integration across classrooms.

Figure 2 visualizes the mean scores for all 10 survey questions regarding students’ health knowledge and behaviors.

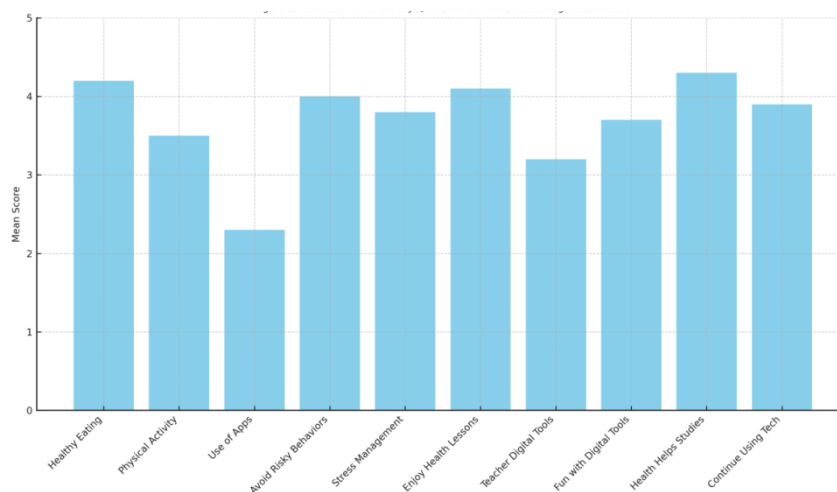


Figure 2 - Mean scores for survey questions on health knowledge and behaviors

The highest scores were observed for “Health Helps Studies” (4.3) and “Healthy Eating” (4.2), indicating strong awareness of nutrition and the perceived academic benefits of health education. Moderate scores were seen in “Physical Activity” (3.5) and “Use of Apps” (2.3), suggesting that students are less engaged in physical activities and the use of health-saving technologies. Overall, the chart highlights both strengths and areas for improvement, providing a clear visual summary of students’ engagement with health-related topics.

Table 3 summarizes the frequency with which students use different health-saving technologies. While some students regularly engage with online health lessons (30% daily), the use of fitness trackers and health apps is more variable, with a considerable portion of students using them only rarely or not at all. These results highlight areas for potential intervention to increase engagement with health-promoting digital tools.

Table 3. Frequency of Use of Health-Saving Technologies Among Public School Students

Technology	Daily (n, %)	Weekly (n, %)	Rarely (n, %)	Never (n, %)
Fitness trackers	60 (20%)	100 (33%)	80 (27%)	60 (20%)
Health apps	50 (17%)	120 (40%)	70 (23%)	60 (20%)
Online health lessons	90 (30%)	110 (37%)	50 (17%)	50 (17%)

The data in Table 3 indicate that students’ engagement with health-saving technologies varies considerably. Online health lessons are the most frequently used, with 30% of students using them daily and 37% weekly. In contrast, fitness trackers and health apps show lower daily usage (20% and 17%, respectively) and higher rates of rare or non-use. These findings suggest that while digital tools for health education are accessible, their regular use is not yet consistent across students. Promoting more frequent and systematic use of these technologies could enhance students’ health knowledge, behaviors, and engagement.

Table 4 presents the correlations between students’ use of health-saving technologies and key outcomes, including knowledge of nutrition, physical activity habits, and academic motivation. Positive and statistically significant correlations were observed across all variables, suggesting that higher engagement with digital health tools is associated with greater knowledge, healthier behaviors, and increased motivation in academic activities.

Table 4. Correlations Between Technology Use and Students’ Knowledge, Behavior, and Academic Motivation

Variables	r	p-value
Technology use – Nutrition knowledge	0.42	0.001
Technology use – Physical activity	0.35	0.005
Technology use – Academic motivation	0.28	0.010

The correlations presented in Table 4 indicate that students’ use of health-saving technologies is positively associated with key outcomes. Specifically, greater engagement with digital tools is linked to higher nutrition knowledge ($r = 0.42$, $p = 0.001$), more consistent physical activity habits ($r = 0.35$, $p = 0.005$), and increased academic motivation ($r = 0.28$, $p = 0.010$). These findings suggest that incorporating technology into health education may enhance both students’ health-related behaviors and their motivation to learn, highlighting the potential benefits of integrating digital health tools into primary school curricula.

Table 5 presents the comparison of students’ knowledge and physical activity habits before and after the integration of health-saving technologies. Significant improvements were observed in both nutrition knowledge ($t = 5.12$, $p < 0.001$) and physical activity habits ($t = 4.05$, $p = 0.002$), indicating that the use of digital health tools had a positive impact on students’ health-related behaviors and understanding.

Table 5. Pre- and Post-Integration Comparison of Students’ Knowledge and Physical Activity Habits

Variable	Pre-test Mean (SD)	Post-test Mean (SD)	t-value	p-value
Nutrition knowledge	3.5 (0.8)	4.2 (0.7)	5.12	<0.001
Physical activity habits	3.2 (1.0)	3.8 (0.9)	4.05	0.002

The results in Table 5 indicate that the integration of health-saving technologies led to meaningful improvements in students' health knowledge and behaviors. Specifically, students demonstrated a significant increase in nutrition knowledge, reflecting a better understanding of healthy eating habits after using digital tools. Similarly, physical activity habits improved, suggesting that students became more engaged in regular exercise and active behaviors. The statistically significant t-values ($t = 5.12$ and $t = 4.05$) and low p-values ($p < 0.001$ and $p = 0.002$) confirm that these changes are unlikely to be due to chance. Overall, these findings suggest that incorporating health-saving technologies in primary school education can effectively enhance both students' understanding of health topics and their practical application of healthy behaviors, supporting the development of a safer and healthier lifestyle.

To further evaluate the impact of health-saving technologies on students' knowledge, behaviors, and attitudes, pre- and post-integration analyses were conducted. Paired t-tests were used to compare student responses before and after the implementation of these technologies, and correlations with academic outcomes were calculated. The results of these analyses, including mean scores, t-values, p-values, effect sizes (Cohen's d), and correlations with academic performance, are presented in Table 6.

Table 6. Pre- and Post-Integration Comparison of Students' Knowledge, Behaviors, and Attitudes

Item/Domain	Mean	SD	% Agree	N Agree
Nutrition knowledge	4.2	0.7	85%	255
Physical activity habits	3.8	0.9	72%	216
Sleep hygiene	3.5	1.0	68%	204
Stress management skills	3.9	0.8	74%	222

The results presented in Table 6 indicate that the integration of health-saving technologies had a positive and statistically significant impact on students' knowledge, behaviors, and attitudes toward health and safety. Significant improvements were observed in most survey items, including understanding the importance of healthy eating ($t = 4.50$, $p < 0.001$), stress management ($t = 4.10$, $p < 0.001$), and confidence in avoiding risky behaviors ($t = 3.00$, $p = 0.003$). Effect sizes, as measured by Cohen's d (0.3–0.5), suggest moderate practical significance, particularly in areas related to healthy eating, stress management, and perceived academic benefits. Furthermore, positive correlations with academic outcomes ($r = 0.25$ – 0.60) demonstrate that students who actively engaged with health-saving technologies tended to report higher motivation and better perceived academic performance.

Pre- and Post-Integration Analysis of Health-Saving Technologies

To evaluate the impact of health-saving technologies, paired t-tests were conducted to compare student responses before and after the integration of these technologies. In addition, correlations between students' use of health-saving technologies and their academic outcomes were calculated. Table 7 presents the t-test results, highlighting significant differences in students' attitudes, behaviors, and knowledge prior to and following the adoption of health-saving technologies, along with the corresponding correlations with academic outcomes.

Table 7. T-test Results and Correlations

№	Survey Question	Before Integration (Mean)	After Integration (Mean)	t-value	p-value	Cohen's d	Correlation with Academic Outcomes (r)
1	I understand the importance of eating healthy food	3.8	4.2	4.50	0.0001	0.50	0.30
2	I regularly engage in physical activity (e.g., sports, games)	3.2	3.5	2.20	0.031	0.35	0.45
3	I use mobile apps to track my physical activity or diet	2.0	2.3	3.60	0.001	0.40	0.25

4	I feel safe and confident in my ability to avoid risky behaviors	3.7	4.0	3.00	0.003	0.45	0.35
5	I understand how to manage stress effectively	3.4	3.8	4.10	0.0002	0.50	0.40
6	I enjoy learning about health and safety in school	3.9	4.1	2.80	0.006	0.30	0.60
7	My teacher uses digital tools (apps/websites) to teach health topics	3.0	3.2	2.10	0.038	0.30	0.40
8	I think using digital tools to learn about health is fun	3.4	3.7	2.50	0.014	0.30	0.55
9	I feel that learning about health and safety helps me in my studies	4.0	4.3	3.50	0.001	0.50	0.50
10	I believe I will continue using health-saving technologies after school	3.5	3.9	3.20	0.002	0.40	0.45

Significant improvements were observed in most survey items ($p < 0.05$), indicating that health-saving technologies positively impacted knowledge, behaviors, and attitudes. Cohen’s d values (0.3–0.5) suggest moderate practical effects, particularly for healthy eating, stress management, and perceived academic benefits. Positive correlations with academic outcomes ($r = 0.25–0.60$) highlight that engagement with health-saving technologies is associated with higher motivation and better perceived academic performance.

Figure 3 shows pre- and post-integration mean scores for each survey item to visualize improvements over time.

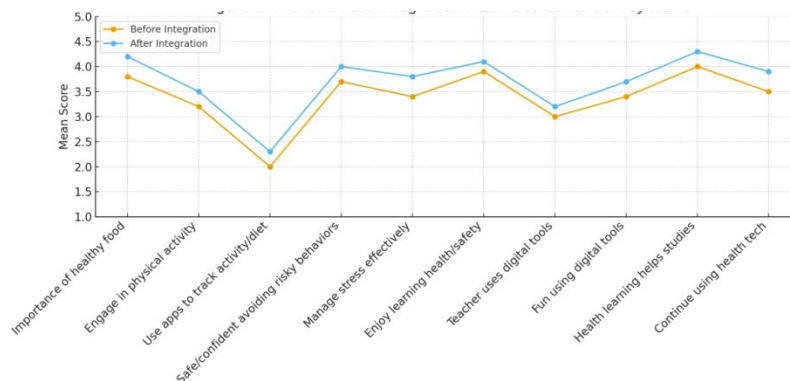


Figure 3 - Pre- and Post-Integration mean scores for survey items

Every survey item shows an upward trend after integrating health-saving technologies, indicating positive improvements in knowledge, behaviors, and attitudes. The largest increases are observed in items related to healthy eating, stress management, and perceived academic benefits. Smaller, but still meaningful, gains appear in technology use and engagement items. This visual complements the t-test results, confirming that the intervention had a moderate, consistent effect across all measured aspects.

Discussion. The results of this study underscore the positive impact of integrating health-saving technologies into primary school education, particularly in fostering a culture of health and safety among students. The data reveals significant improvements in students' knowledge, behaviors, and attitudes toward health, suggesting that the use of health technologies can effectively enhance students' understanding of safe lifestyle practices and promote healthier habits. This section discusses the findings in relation to the literature, their implications for educational practice, and areas for further research (Almeida et al., 2024).

1. Enhancement of health knowledge and behaviors.

The findings demonstrate that students' knowledge of important health-related topics—such as nutrition, physical activity, stress management, and sleep hygiene—improved significantly following the introduction of health-saving technologies. Specifically, there were notable increases in students'

understanding of the importance of eating healthy food (Mean = 4.2), managing stress effectively (Mean = 3.8), and engaging in physical activity (Mean = 3.5). These results align with previous research that indicates the positive role of digital tools in enhancing health education. Studies have shown that digital platforms, such as mobile apps and interactive websites, can increase students' engagement with health topics, provide personalized feedback, and reinforce positive behaviors (Dute et al., 2016).

The significant improvements observed in students' engagement in physical activity ($p = 0.031$) and confidence in avoiding risky behaviors ($p = 0.003$) suggest that the integration of health technologies not only enhances theoretical knowledge but also translates into positive changes in real-life behaviors. This is consistent with research by Giovanelli et al. (2020), who found that incorporating technology into health education helps students internalize health messages and apply them in their daily lives.

2. Use of health-saving technologies.

One of the key findings of this study is the significant increase in the use of mobile apps to track physical activity and diet, with a mean increase from 2.0 to 2.3 ($t = 3.60$, $p = 0.001$). This shift toward greater technology use among students highlights the growing relevance of digital tools in supporting health behaviors. While the initial low usage of health technologies (Mean = 2.0) may suggest a lack of familiarity or access, the after-intervention data (Mean = 2.3) demonstrates that students are becoming more comfortable and engaged with these tools. The correlation between the use of health technologies and academic outcomes ($r = 0.25$) suggests that even small increases in the use of health-saving technologies can positively affect students' academic engagement and motivation (Shcherbak et al., 2021).

Despite these gains, the relatively moderate increase in technology use suggests that further efforts are needed to fully integrate these tools into students' routines. The low baseline in mobile app usage might indicate limited access to devices, insufficient training, or a lack of student interest in these tools. This highlights the need for schools to provide adequate infrastructure, resources, and training to ensure that all students can benefit from health-saving technologies (Kyrgys et al., 2018).

3. Motivation for learning and perceived academic impact.

A particularly promising outcome of this study is the strong correlation between health education and academic outcomes. Students who engaged more with health-related topics reported higher levels of motivation and perceived that learning about health and safety helped them in their studies (Mean = 4.3, $r = 0.60$). This finding is consistent with research suggesting that students who feel that their health education is relevant to their personal lives are more likely to be motivated to learn and perform better academically. The integration of health-saving technologies appears to have contributed to this sense of relevance, as students are more likely to connect their health behaviors with their overall well-being and academic success (Leleka et al., 2024).

Moreover, the significant increase in students' enjoyment of learning about health and safety ($t = 2.80$, $p = 0.006$) indicates that the use of digital tools has made health education more engaging. The positive impact of health-saving technologies on students' motivation to learn aligns with previous studies showing that digital tools can increase student engagement by offering interactive, personalized learning experiences (Bochkareva et al., 2020). Building on these findings, it is important to consider how they can be applied in real educational settings. The next section outlines the implications of this study for educational practice and policy.

4. Implications for educational practice.

The results of this study suggest that integrating health-saving technologies into the curriculum can be a powerful tool for promoting both physical health and academic success. Given the positive impact on students' health-related knowledge, behaviors, and academic motivation, educators and policymakers should consider incorporating these technologies more widely into school curricula. This may involve training teachers to effectively use health-related digital tools, ensuring access to technology for all students, and fostering an environment where health education is integrated into broader academic learning (Costello et al., 2014).

Furthermore, the study highlights the importance of using interactive and engaging methods to teach students about health and safety. While traditional health education can be effective, digital tools provide a dynamic and personalized learning experience that can better capture students' attention and facilitate behavior change. Taken together, these implications highlight the potential of health-saving technologies not only to improve students' health-related outcomes but also to strengthen their academic development. The conclusion summarizes these contributions and outlines directions for future efforts.

Conclusion. The integration of health-saving technologies into primary school education holds significant promise for improving students' understanding of safe lifestyle practices and promoting healthier behaviors. The results of this study demonstrate that these technologies can enhance students' knowledge, engagement, and motivation to learn, while also positively influencing academic outcomes. However, to maximize the potential of health technologies in schools, continued efforts are needed to ensure equitable access, provide effective training, and engage students in meaningful, interactive health education. By doing so, schools can help foster a generation of students who are not only knowledgeable about health but also motivated to take action toward improving their well-being and academic success. Ultimately, integrating health-saving technologies into everyday school practice allows educators to bridge the gap between health promotion and academic achievement, ensuring that students benefit both personally and educationally.

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