

Patterns of Student Lifestyle Habits: Evaluations by Students and Their Parents

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ABSTRACT

This study aimed to identify the challenges related to lifestyle habits faced by elementary and junior high school students, intending to propose improvements to educational programs. The survey targeted 1,570 students, from first-grade elementary and third-year junior high school students and their 1,539 parents. A self-administered questionnaire assessed the participant's awareness of their lifestyle habits. The analysis revealed high levels of awareness regarding breakfast consumption, hygiene maintenance, and physical activity and suggested room for improvement in posture, bedtime, and the use of digital devices. Furthermore, a gap was observed between the perceptions of the students and their parents, particularly regarding gaming, mobile phone use, and bedtime. Based on these findings, it is essential to strengthen the collaborative efforts among schools, families, and communities to provide concrete support for improving lifestyle habits. Enhancing health education and improving home environments are critical for supporting students voluntarily adopting health-promoting behaviors.

Keywords: Students; Parents; Lifestyle Habits; Evaluation; Elementary School; Junior High School; Health Education

Introduction

In contemporary society, although health-related information is widely accessible, many students and their guardians struggle to apply this knowledge in daily life effectively. Fundamental lifestyle habits, such as sleep, diet, and exercise, remain core topics in health education, yet health issues linked to these habits persist. Moreover, new concerns about digital media, including smartphones and video games, have emerged, further complicating health challenges. Many households face difficulties fostering a nurturing environment to establish healthy lifestyle habits during early childhood [1]. These challenges highlight the need for family health education. In response, the Japanese Ministry of Health, Labor, and Welfare and the Ministry of Education, Culture, Sports, Science, and Technology have emphasized the critical link between children's lifestyle habits and their healthy

development and the long-term impact on adult health. They advocated early intervention. However, research indicates that health education alone does not guarantee healthy behavior. Positive health outcomes are achieved only when individuals practice these behaviors daily [2-3]. Thus, there is a growing focus on educational approaches that encourage students to adopt and sustain health-promoting behaviors [4] independently. Despite efforts in many schools to address diet and sleep through structured health education programs at an early stage, the effectiveness of these initiatives remains uncertain [5-6]. Additionally, recent challenges such as Internet use and digital devices complicate traditional concerns such as diet and exercise. Addressing these multifaceted issues requires comprehensive support that includes students and their families. Thus, designing and implementing effective health education is crucial for laying the groundwork that enables students to sustain healthy lifestyles.

Research Objective

This study aimed to promote health education for elementary and junior high school students by evaluating their health-related lifestyle habits from the students' and their parents' perspectives and identifying the associated challenges. Specifically, this study seeks to assess students' health behaviors and highlight existing problems and areas for improvement.

Definition of Terms

Lifestyle habits: Patterns of behavior voluntarily adopted to maintain and promote health. Nine criteria were defined based on prior research and health education programs. These criteria include wake-up time, breakfast consumption, hand washing, food preferences, physical activity, posture, hygiene maintenance, bedtime, television use, video games, and mobile phones.

Research Methods

Participants and Valid Response Rates

Participants:

Students: 1,600 students (1,067 elementary school students from 5 schools, 533 junior high school students from 1 school).

Parents: 1,600 parents (1,067 parents of elementary school students, 533 parents of junior high school students)

Valid Responses (Response Rate):

Students: 1,570 responses (98.1%) (1,064 elementary school students [99.7%], 506 junior high school students [94.9%]) (Table 1)

Parents: 1,539 responses (96.2%) (1,062 parents of elementary school students [99.5%], 477 parents of junior high school students [89.5%]) (Table 2).

Table 1: Summary of Students by Grade and Gender.

n = 1570			
Grade	Students (Boys) (n, %)	Students (Girls) (n, %)	Total (n, %)
Elementary School			
1st	76 (46.1%)	89 (53.9%)	165 (100.0%)
2nd	89 (53.0%)	79 (47.0%)	168 (100.0%)
3rd	110 (53.4%)	96 (46.6%)	206 (100.0%)
4th	101 (56.4%)	78 (43.6%)	179 (100.0%)
5th	84 (51.9%)	78 (48.1%)	162 (100.0%)
6th	97 (52.7%)	87 (47.3%)	184 (100.0%)
Junior high School			
1st	72 (52.6%)	65 (47.4%)	137 (100.0%)
2nd	96 (56.5%)	74 (43.5%)	170 (100.0%)
3rd	103 (51.8%)	96 (48.2%)	199 (100.0%)
Total	828 (52.7%)	742 (47.3%)	1570 (100.0%)

Table 2: Summary of Parents of Students by Grade and Gender.

n = 1539			
Grade	Parents of Boys (n, %)	Parents of Girls (n, %)	Total (n, %)
Elementary School			
1st	76 (46.1%)	89 (53.9%)	165 (100.0%)
2nd	89 (53.0%)	79 (47.0%)	168 (100.0%)
3rd	110 (53.4%)	96 (46.6%)	206 (100.0%)
4th	100 (56.2%)	78 (43.8%)	178 (100.0%)
5th	84 (51.9%)	78 (48.1%)	162 (100.0%)
6th	96 (52.5%)	87 (47.5%)	183 (100.0%)

Junior high School			
1st	66 (52.0%)	61 (48.0%)	127 (100.0%)
2nd	86 (55.5%)	69 (44.5%)	155 (100.0%)
3rd	98 (50.3%)	97 (49.3%)	195 (100.0%)
Total	805 (52.3%)	734 (47.7%)	1539 (100.0%)

Survey Period

July 1–31, 2020

Survey Method and Content

A self-administered questionnaire using a four-point Likert scale was employed to assess the health-related lifestyle habits of students and their parents. The survey covered nine lifestyle habits (wake-up time, breakfast consumption, hand washing, food preferences, physical activity, posture, hygiene, bedtime, and use of television, video games, and mobile phones) from the students’ and parents’ perspectives.

Analysis Methods

Students’ self-reported lifestyle habits were analyzed by calculating the percentage of each item by grade and comparing the mean values. Similarly, parents’ evaluations of the students’ lifestyle habits were analyzed. T-tests were conducted for each item to examine significant differences and compare the assessment of the students and parents.

Ethical Considerations

The study strictly adhered to ethical guidelines to protect participants’ privacy. Approval was obtained from the principal of each school before conducting the survey. After explaining the purpose and content of the survey, informed consent was obtained from both the students and parents. Survey results were anonymized to ensure privacy, and measures were taken to prevent the identification of individuals in reports or health-related activities.

Results

Student and Parent Assessments of Students’ Lifestyle Habits

Student Self-Assessment of Lifestyle Habits: The analysis of the average scores for each lifestyle habit item revealed that the highest achievement rate was observed for “Personal hygiene” (92.8%), followed by “Breakfast consumption” (92.1%) and “Physical activity” (88.6%). When analyzed by grade, the highest achievement rates for these items were observed among first-grade elementary students, exceeding 94% in all three categories. In contrast, the lowest achievement rates were found for “food preferences” (65.1%), followed by “bedtime” (70.0%) and “posture” (70.4%). Grade-based analysis indicated that “food preferences” and “bedtime” had the lowest rates among first-year junior high school students. In contrast, “posture” had the lowest rates among third-year junior high school students. Notably, the achievement rate for “food preferences” among first-year junior high school students was 57.8%, 7.3% lower than the overall average, indicating that approximately 40% of students could not adopt this habit. The grades with the lowest average scores for lifestyle habits were first- and third-year junior high school students, with these grades showing below-average scores for seven out of the nine items (Table 3). Additionally, strong positive correlations were observed among various lifestyle habits. Specifically, the following correlations were observed: physical activity and posture ($r = 0.765$), physical activity and screen time ($r = 0.820$), physical activity and bedtime ($r = 0.732$), posture and screen time ($r = 0.844$), posture and bedtime ($r = 0.797$), and screen time and bedtime ($r = 0.813$).

Table 3: Student Self-Assessment of Lifestyle Habits.

n = 1570										
Item	Elementary School						Junior high School			Average (%)
	1st	2nd	3rd	4th	5th	6th	1st	2nd	3rd	
Wake-up	81.8%	81.1%	82.1%	79.3%	83.4%	85.9%	83.0%	84.5%	83.9%	82.8%
Breakfast	97.6%	92.9%	96.1%	92.2%	97.5%	97.3%	89.1%	82.2%	84.3%	92.1%
Hand washing	90.9%	84.0%	79.7%	79.3%	86.5%	86.4%	85.0%	87.4%	84.3%	84.8%
Food preferences	77.0%	70.4%	58.5%	61.5%	61.6%	67.4%	57.8%	64.9%	66.8%	65.1%
Physical activity	94.5%	92.3%	90.3%	89.9%	90.2%	83.2%	86.4%	88.5%	82.0%	88.6%
Posture	90.9%	81.7%	64.3%	69.8%	66.9%	65.2%	69.4%	64.9%	60.4%	70.4%
Hygiene maintenance	96.4%	93.5%	90.3%	91.1%	95.7%	94.6%	89.1%	95.4%	89.4%	92.8%
Television, Video Games, and Mobile Phones	93.9%	82.2%	83.1%	78.8%	81.6%	77.2%	79.6%	74.7%	71.4%	80.3%
Bedtime	83.6%	74.0%	74.4%	73.2%	64.4%	67.4%	63.9%	64.4%	64.5%	70.0%

Parent Assessment of Students' Lifestyle Habits: The analysis of the average scores from the parents' assessments revealed that the highest-rated items were "Breakfast consumption" (91.1%), followed by "wake-up time" (90.4%) and "personal hygiene" (86.6%). When analyzed by grade, the highest achievement rates for "Wake-up time" and "Personal hygiene" were observed among first-grade elementary students, exceeding 93%. "Breakfast consumption" was highest among fifth-grade elementary students, with a rate exceeding 96%. Moreover, "wake-up time" and "breakfast consumption" showed scores of over 90% for all elementary school students, with these items having higher averages in elementary students than in junior

high school students. In contrast, the lowest-rated item was "posture" (49.9%), followed by "Food preferences" (61.5%) and "Screen time" (62.7%). Notably, the "posture" score was below 50%, indicating a need for improvement. Grade-based analysis showed that "Posture" and "Screen time" were rated the lowest among second-year junior high school students. In contrast, "food preferences" was rated the lowest among first-year elementary students. The grades with the lowest average scores for lifestyle habits were the first- and second-year junior high school students, where nearly all or most items scored below the average (Table 4).

Table 4: Parent Assessment of Students' Lifestyle Habits.

n = 1539										
Item	Evaluation by Parents of Elementary School Students						Evaluation by Parents of Junior high School Students			Average (%)
	1st	2nd	3rd	4th	5th	6th	1st	2nd	3rd	
	Wake-up	96.4%	94.70%	93.20%	95.00%	94.50%	92.90%	80.30%	82.80%	
Breakfast	96.4%	95.30%	96.10%	96.60%	96.90%	95.70%	78.20%	81.60%	83.40%	91.10%
Hand washing	86.1%	84.60%	79.20%	81.00%	77.30%	75.00%	66.70%	71.30%	76.00%	77.50%
Food preferences	55.8%	62.70%	60.90%	66.50%	60.70%	66.30%	60.50%	57.50%	62.70%	61.50%
Physical activity	95.8%	89.30%	89.40%	92.20%	87.10%	88.00%	78.20%	76.40%	77.90%	86.00%
Posture	63.6%	58.00%	49.30%	50.80%	49.70%	45.10%	44.90%	40.80%	46.50%	49.90%
Hygiene maintenance	93.9%	90.50%	86.50%	86.60%	87.70%	90.80%	76.20%	82.20%	84.80%	86.60%
Television, Video Games, and Mobile Phones	75.2%	69.20%	61.80%	69.30%	64.40%	56.50%	57.80%	52.30%	58.10%	62.70%
Bedtime	90.3%	90.50%	84.50%	82.70%	81.00%	78.80%	60.50%	64.90%	66.40%	77.70%

A positive correlation was also observed between various lifestyle habits and parental assessments. Strong correlations were observed between physical activity and posture ($r = 0.793$), physical activity and screen time ($r = 0.849$), physical activity and bedtime ($r = 0.933$), posture and screen time ($r = 0.946$), posture and bedtime ($r = 0.849$), and screen time and bedtime ($r = 0.813$). Furthermore, the correlation in the parents' assessments was consistent with the items that the students rated as achievable.

Comparison of Student and Parent Assessments of Lifestyle Habits

A t-test was conducted to compare the lifestyle habits of students and parents. For the items rated as "achieved," two items—"posture" ($t(16) = 5.18, p < .001$) and "Screen time" ($t(16) = 4.10, p < .001$)—

were rated significantly higher by students compared to parents. For the items rated as "not achieved," significant differences were found in six items: "Wake-up time," "Handwashing," "posture," "personal hygiene," "screen time," and "bedtime." Among these, "wake-up time" ($t(16) = 6.24, p < .001$) and "bedtime" ($t(16) = 3.27, p = .004$) were rated significantly higher by students than by parents. Conversely, for "handwashing" ($t(16) = -2.24, p = .003$), "posture" ($t(16) = -3.85, p = .001$), "personal hygiene" ($t(16) = -2.85, p = .011$), and "screen time" ($t(16) = -4.67, p < .001$), parents rated these items significantly higher than students. Additionally, significant differences were observed for both "achieved" and "not achieved" items in "Posture" and "Screen time." In these two categories, students reported achieving the behaviors, while parents considered them not to have been completed, indicating a significant difference between their assessments (Table 5).

Table 5: Comparison of Student and Parent Evaluations of Lifestyle Habits.

Item	Achieved					Not achieved				
	Students	SD	Parents	SD	t-value	Students	SD	Parents	SD	t-value
Wake-up	147.66	18.99	161.11	21.78	-1.39	26.77	7.64	9.88	2.71	6.24**
Breakfast	164.11	20.69	163.12	25.8	0.13	10.33	7.71	8.33	3.67	0.70
Hand washing	151	16.67	138.33	20.71	1.42	23.44	9.96	32.66	7.29	-2.24*
Food preferences	116	17.03	109.88	16.42	0.77	58.33	13.28	61.11	11.63	-0.47
Physical activity	157.66	17.24	153.33	20.91	0.47	16.77	6.7	17.66	5.95	-0.29
Posture	124.55	15.19	88.66	14.16	5.18**	49.88	19.27	82.11	16.01	-3.85**
Hygiene maintenance	165.33	18.47	154.55	21.5	1.14	9.11	5.23	16.44	5.65	-2.85*
Television, Video Games, and Mobile Phones	142.66	16.17	111.55	15.99	4.10**	31.55	11.02	59.44	14.09	-4.67**
Bedtime	124.77	18.71	138.66	24.89	1.33	49.66	10.77	32.22	11.82	3.27**

Note: *p < .05, **p < .01, degrees of freedom = 16 for all tests.

Discussion

Actual Situation of Students' Lifestyle Habits

This study analyzed the actual lifestyle habits of students, focusing on specific items to clarify the current state of their behavior. The discussion is divided into three key areas: wake-up time, bedtime, breakfast consumption, food preferences, posture, gaming, and mobile phone use. These factors are directly linked to students' physical and mental health, significantly affecting their academic performance and school life.

Wake-up Time and Bedtimes: Regarding wake-up and bedtime, more parents reported that their children walked up and went to bed regularly compared to the students' evaluations. This trend is particularly evident among elementary school students. These findings suggest that irregular wake-up times and bedtimes may lead to sleep deprivation, which can cause health problems such as poor concentration and physical discomfort, potentially disrupting school life. However, it is essential to consider parents' practical difficulties in fully understanding the details of their children's school life [7]. Differences in parental involvement and awareness of lifestyle habits were observed between elementary and junior high school parents. Junior high school students are more likely to become less dependent on their parents as they mature, resulting in decreased parental involvement in their children's lifestyle habits [8-10]. This shift is closely associated with adolescents' physical and psychological development during puberty. Therefore, the development of self-management skills among adolescents is crucial.

Breakfast Consumption and Food Preferences: Regarding breakfast consumption: Many elementary school students reported eating breakfast regularly, whereas the rate was significantly lower among junior high school students. A comparison with the 2019 national survey [11] revealed that the breakfast consumption rate in

elementary schools was 0.3% higher, whereas in junior high schools, it decreased by 5.2%. Balanced nutrition, exercise, and sleep are essential for junior high school students at a critical stage of physical growth. Therefore, it is necessary to establish a healthy lifestyle that incorporates all these factors. Both schools and families should reinforce the importance of breakfast and promote effective morning management. There was a noticeable gap between students' and parents' evaluations regarding food preferences. Elementary school students rated their food preferences more positively than their parents rated them lower. This disparity suggests that school meals positively influence students' eating habits, contrasting the selective eating habits observed in the home environment. Previous research has shown that school meal programs and eating with peers significantly affect children, with students often trying foods they dislike after observing their peers eating them [12]. Adopting an approach aligned with the child's growth stage at home is vital, encouraging gradual exposure to disliked foods in a supportive environment rather than forcing them to eat [13-14].

Posture and Gaming/Mobile Phone Use: A strong positive correlation was observed between posture and gaming/mobile phone use. While students reported achieving good posture, parents tended to rate their children's posture less favorably, indicating a discrepancy in the perception of lifestyle habits between students and their parents. This difference highlights a significant challenge in evaluating lifestyle habits. The frequent use of gaming devices and mobile phones has raised concerns among educators, who have pointed out excessive use, improper usage habits, and adverse effects on students' physical and mental health. Insufficient guidance and rule-setting within the family environment are often cited as contributing to these problems [15-17]. Regarding posture, evaluation differences may stem from the students' focus on their posture during the study period. In contrast, parents may consider posture in a broader context, including during recreational activities such as gaming or phone use. This discrepancy

in perception likely influenced the evaluations of both parties. The strong association between posture and gaming/mobile phone use suggests that the widespread use of smartphones and tablets reduces opportunities for outdoor activities, leading to muscle weakness and postural problems. During the critical period of physical development in elementary and junior high school, students are at a stage where muscle strength is rapidly developing, and physical activity is essential. However, increased time spent using Visual Display Terminal (VDT) devices contributes to physical inactivity, hindering muscle development [18-20]. As a result, maintaining proper posture becomes more challenging. Upper elementary and junior high school students shifted from outdoor play to gaming or smartphone use, which correlated with increased VDT screen time. These findings suggest that it is essential to implement interventions to improve postural and physical activity habits during this period, with effective collaboration between family guidance and school education.

Support for Improving Lifestyle Habits for Students and Parents

Regarding eating habits, it is necessary to continue group-based education through school meal programs while providing individualized instruction to address specific challenges related to "food preferences." By combining general guidance with personalized support tailored to individual needs, more effective progress in improving students' eating habits can be achieved. For posture, given that students often find it difficult to assess their postures objectively, it is crucial to provide opportunities for self-checking regularly. Furthermore, utilizing digital technologies, such as photos or videos, to visually demonstrate proper posture can enhance student awareness. In the home environment, active parental involvement is essential to reinforce good postural habits, and daily reminders from parents can be particularly effective. Posture improvement contributes to physical health and significantly impacts psychological well-being. Maintaining good posture is associated with enhanced self-esteem and emotional stability [21]. Thus, improving posture is critical for overall health and positively influences physical and mental well-being. Regarding sleep, although some level of guidance has already been provided, it is necessary to go beyond knowledge dissemination and introduce specific methods to promote behavioral changes. According to a 2020 survey by the Ministry of Education, Culture, Sports, Science and Technology, there is a clear tendency for later bedtime among students who spend more time using mobile phones or playing games, indicating that screen time contributes to reduced sleep duration [22].

Therefore, it is essential to raise students' awareness of the interconnections between sleep, appetite, mental health, and physical condition and encourage them to regulate their behavior. Additionally, early discussions with parents about establishing rules, particularly regarding the balance between gaming, mobile phone use, studying, and other daily activities, can foster proactive health behaviors and promote long-term improvements.

Limitations of the Study and Future Directions

This study was conducted in a specific region, which limits the generalizability of the findings to other regions or populations. Future studies should investigate a broader geographical area and include a more diverse sample to improve the external validity of the results. Additionally, data collected from the perspectives of both students and their parents may introduce bias, suggesting the need for more objective data collection methods. Furthermore, this study employed a cross-sectional design, which does not allow examining how students' lifestyle habits change over time. Future studies should consider the impact of other factors, such as students' home environments and social conditions, to provide a more comprehensive understanding of the factors influencing lifestyle habits.

Conclusion

This study found some improvement in students' lifestyle habits, but challenges remain, particularly regarding posture, sleep patterns, and digital devices such as video games and mobile phones. A gap was also observed between the students' and parents' perceptions, especially concerning gaming, mobile phone use, and bedtime. Based on these findings, future health education programs should encourage collaboration among families, schools, and communities to support students in adopting healthy behaviors. Improving educational programs and focusing on daily routines, particularly healthy lifestyle habits, are essential. Cooperation between families and schools is crucial for developing and sharing improvement strategies. Parents should actively engage with their children at home, establish rules, and promote healthy habits. Additionally, the involvement of extended family members such as siblings and grandparents is essential to ensure a collective family effort in promoting lifestyle changes.

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Conflicts of Interest

The authors declare no conflict of interest associated with this study.

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