

Healthy Lifestyle among Adolescents Students Through Electronic Platform

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Abstract

Background: Adolescence is a critical period in which are establishing habits that impact health throughout lives. Electronic platforms engage adolescents in promoting healthy lifestyles. This study **aimed** to assess healthy lifestyle among adolescent students through electronic platform. **Research design:** A descriptive research design was used to achieve the aim of this study. **Setting:** This study was conducted at all Gove mental secondary schools in Benha City, Qalubya Governorate, it included eight secondary schools. **Sample:** Simple random sample of adolescent students; It included 376 adolescent student. **Tools: Two tools were used I):** A structured online questionnaire which consists of three parts. **Part I:** Socio-demographic characteristics of adolescents students. **Part II):** knowledge of adolescent students regarding healthy lifestyle and using electronic platform, **Part III):** Reported practice of adolescent students regarding healthy lifestyle, **II):** Likert scale to measure adolescent attitude regarding healthy lifestyle and electronic platform. **Results:** 52.4% of adolescents' students age 16 years old with Mean±SD 16.51±0.57, 49.2% of adolescents students had poor total knowledge regarding healthy life style, 67.6% of them had unhealthy total practices regarding healthy life style and 65.7% of them had negative total attitude regarding healthy life style and electronic platform. **Conclusion:** There were less than half of adolescents' students had poor total knowledge regarding healthy lifestyle, two thirds of them had unhealthy total practices regarding healthy lifestyle and almost thirds of them had negative total attitude regarding healthy lifestyle and electronic platform. There were positive highly statistically significant correlations between total knowledge, total lifestyle and total attitude regarding healthy lifestyle and using electronic platform. **Recommendations:** Health education programs should be developed and implemented about healthy lifestyle among adolescents and its effect on health promotion.

Key words: Adolescents, Electronic platform, Healthy lifestyle

Introduction

Adolescence is the period of development begins at puberty and ends in early adulthood. Adolescence is characterized by a rapid pace of growth. Nutrition and the adolescent transition are closely intertwined, since eating patterns and behaviors are influenced by many factors, including peer influences, parental modeling, food availability, food preferences, cost, convenience, personal and cultural beliefs, mass media, and body image. Eating habits in

adolescence are based on increased energy intake, especially from refined starch food, sweet and sweetened drinks and insufficient intake of vegetables and fruits. Improper eating habits cause various eating disorders and are prevalent to adulthood. During adolescence, not only obesity is the most important nutritional problem today, but from a physiological point of view, it is mainly the insufficient intake of micronutrients (Abd El Sattar et al., 2022).

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Adolescence is critical for later health and disease, because there is some evidence stating that habits acquired in this period may track into adulthood. To improve adolescents' health, it is important to promote healthy behaviors at an early age, especially during adolescence. Healthy behaviors are a determinant of health; positive changes can have an impact on the overall health outcomes. The main behaviors associated with adolescents' health are physical activity, less time engaging with multimedia, healthy diet, and absence of alcohol and tobacco consumption, as well as caffeine/stimulant use, sleep deprivation, drug use, condom less sex, and unhealthy relationships (**Kansra et al., 2021**).

Life style is one of the most important influential factors on individual's health and illness. On the basis of statistical data, 53% of deaths are related to the life style. Healthy life style causes a balance in life if which a person chooses intentional standards options for himself. In fact, healthy life style has been considered as a valuable source for decreasing health problems, promoting health, managing stressful events and improving the quality of life. The components of life style could be modified by applying related strategies; hence, public health shifted its attention more to inform changing strategies of life style (**Obidovna & Sulaymonovich, 2022**).

A healthy lifestyle for adolescents is a way of living, behaviors and habits that promote physical, mental, and social well-being. Behaviors include regular physical activity, healthy eating, adequate sleep, and avoidance of risky behaviors such as smoking, drug use, and unsafe sex. According to the World Health Organization (WHO) the following guidelines can help adolescents maintain a healthy lifestyle: Balanced diet adolescents should consume a variety of fruits, vegetables, whole grains, lean proteins, and healthy fats while

limiting their intake of saturated and trans fats, added sugars, and sodium. Regular physical activity adolescents should engage in at least 60 minutes of moderate-to-vigorous physical activity each day, include activities such as brisk walking, cycling, dancing, swimming, or team sports. Adequate sleep adolescents need 8-10 hours of sleep per night to support growth and development. Stress management adolescents should develop coping strategies to manage stress, such as relaxation techniques, exercise, and talking with a trusted friend or adult(**World Health Organization, 2022**).

The World Health Organization(WHO) puts out that the four major risk factors for chronic disease during adulthood are alcohol consumption, poor nutrition and diet, physical inactivity, and tobacco consumption. This could mean that a healthy lifestyle in adolescence can minimize chronic diseases in adulthood (**WHO, 2022**).

Adolescents' leisure has alternatives with new technologies, which have been considered as one of the main factors that effected with the healthy habits of this population. Among these predisposing factors to a sedentary lifestyle, it is worth highlighting the drastic increase in the use of smartphones and tablets, which are used by 80% of the young population (**Jiang et al., 2022**).

Learning platform is an information system that provides a safe learning environment where students can take online courses. These online learning platforms are often called 'online course marketplaces' because they give learners the opportunity to search for and pay for online courses directly. E-learning is a fast and efficient way of providing and sharing knowledge with learners in different parts of the world (**Kyriaki, 2022**).

An electronic learning platform is an integrated set of interactive online services that provide trainers, learners, and others involved in education with information, tools, and resources to support and enhance education delivery and management (Alam, 2022). The lives of Adolescents and Young Adults (AYAs) have become increasingly intertwined with technology. Many seek and share health advice through Internet social sites and receive daily step counts from wristwatches. As technology is increasingly available to manage AYA health and well-being, both AYAs and clinicians see the potential for using these platforms to extend health care delivery and advance engagement and education (Wong et al., 2020).

Community Health Nurse should be knowledgeable regarding the importance of health-promoting activities such as healthy eating, physical activity, stress management, sleep hygiene, and maintaining healthy relationships. However, this knowledge may not translate into nurses' own self-care. On the other hand, nursing schools could provide appropriate atmosphere for teaching healthy lifestyles to adolescents and as a result will influence the community health (Uchendu et al., 2020).

Community Health Nurse plays a critical role in promoting healthy lifestyles among adolescents. Electronic platforms are becoming increasingly important in reaching adolescents. CHN can use electronic platforms to provide health education to adolescents, through online learning, CHN can provide information on healthy eating, physical activity, and the importance of sleep. Additionally, CHN can use platforms to provide information on how to manage stress, anxiety, and mental health concerns. CHN can also use electronic platforms to provide social support to adolescents. Online support groups or forums

can provide a safe space for adolescents to connect with others are going through similar experiences. CHN can provide support through online messaging or email, providing guidance and advice on healthy behaviors (Covolo et al., 2022).

Significance of the study

Internet users in Egypt have significantly increased over the past six years from 2014 to 2020 to reach approximately 61 million users. 73.81% of them are students, and 44.3% of their Internet activities are for educational purposes. As a lot of students in Egypt rely mainly on online learning since the outbreak of the pandemic, Internet access has reached 57.3%. Moreover, at the end of July–September 2021, the usage of Mobile devices has reached 94.09% and increased to 95.37% by November 2021. This dependency on Internet networks and digital systems impact on adolescent health. As Unhealthy lifestyle behaviors may be long-term risk factors for chronic conditions in adulthood. For a healthy lifestyle that provides, maintains, and promotes the individual's health and wellbeing, and quality of life (El Sayad et al., 2021). Thus, the understanding and evaluation of healthy lifestyles among secondary students are essential for the promotion of their healthy growth.

Aim of the study

This study aimed to assess the healthy lifestyle among adolescent students through electronic platforms.

Research question

- What is the adolescents' knowledge regarding healthy lifestyle through platform?
- What is adolescents' healthy lifestyle practices?
- What are the adolescents' attitude regarding healthy lifestyle and using platform?
- Is there a correlation between adolescents' knowledge, their healthy lifestyle practice,

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and attitude regarding healthy lifestyle and using platform?

Subjects and Method

Research design:

A descriptive study design was utilized to conduct this study. This design is one in which information is collected without changing the environment and used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables or conditions in a situation.

Setting:

This study was conducted at all secondary schools in Benha City, Qalubia Governorate, it includes eight secondary schools namely; Benha secondary school for boys, Qalyubia National Bank Secondary School for Boys in Benha, Hassan Bin Thabet Secondary School for Boys, Benha Sports School for Boys, Um Al-Momineen Secondary School for Girls, Al Shaimaa Secondary School for Girls, Sadat secondary school for girls, Al-Shaheed Muhammad Najeeb Al-Harthy Secondary School for Girls.

Sampling:

Simple random sample of adolescent students were used according equation

$$n = \frac{N}{1+N(e)^2}$$

N = Total population

n = Sample

e = 0.05

It includes 376 adolescent student from 6155 students.

Tools of data collection:

Two tools were used to collect the data

Tool (I): A structured interviewing questionnaire: It was developed by the researchers based on reviewing related literatures and it was written in simple clear Arabic language: It comprised of two parts:

Part 1: It was concerned with demographic characteristics of the studied sample included;

age, gender, academic year, ranking in the family and training courses on the use of educational platform.

Part II:- It was concerned with knowledge of adolescent students regarding healthy lifestyle and electronic platform; it comprised of twenty nine questions (meaning of healthy lifestyle, benefits of applying healthy lifestyle, components of healthy life style, meaning of healthy diet, nutrients that must be increased, nutrients that must be reduced, importance of omega-3 and the best source of omega-3, the importance of calcium & zinc intake for adolescents, side effect of iron deficiency and anemia in adolescent girls and meaning of educational electronic platform).

Scoring system:

The scoring system for adolescents' knowledge was calculated as follows (2) score for correct and complete answer, while (1) score for correct and incomplete answer and (0) score for did not know answer or incorrect answer. These scores of the items were summed- up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into present score. Adolescents students total knowledge score was classified as the following: total scores of knowledge= 58 points.

- Good when the total score was > 75% (>44 points).
- Average when the total score was 50% to less than 75% (equal 29 to less than 44 points).
- Poor when the total score was less than <50% (<29 points).

Part III): Reported practice through asking questions of adolescent students regarding healthy lifestyle which included 60 items classified in to 6 categories (sun exposure 9 equations, healthy nutrition 14 equations, rest and sleep 7 equations, exercise 7 equations, self-control 15 equations and personal hygiene

8 equations).

Scoring system:

Each step of (0) score for never, while, (1) score for sometimes, and (2) score for always. These scores of items were summed up and the total divided by the number of the items, given a mean score for the part. These score converted into a present score. Adolescents healthy life style reported practices classified as follow: Total scores of healthy lifestyle reported practices =120 points

- Healthy lifestyle $\geq 80\%$ (≥ 96 points).
- Unhealthy lifestyle $< 80\%$ (< 96 points).

Tool (II):- Part I: Scale to measure the adolescent healthy lifestyle attitude regarding It comprised of twenty six (26) statements; adopted from researches **Tajik et al., (2020)**, the questionnaire was measured on a likert scale type of (agree, sometimes, and don't agree). it was translated into arabic by researchers which included (believing that a healthy life style can change life as well as heath, feeling happy to change life style to be healthier, thinking a healthy diet was beneficial to our ancestors, should refrain from eating foods and drinks that are high in sugar, feeling guilty after eating high sugar and fried foods).

Part II: scale to measure the adolescent attitude regarding electronic platform It comprised of thirty six (36) statements; adopted from researches **Kisanga & Ireson, (2016)** the questionnaire was measured on a likert scale type of (agree, sometimes, and don't agree). it was translated into Arabic by researchers which included(thinking E-learning is too economical for education, believing that the use of E-learning will improve the quality of my work, thinking computers make work more interesting, preferring reading articles in E-learning, enjoy teaching using the computer, thinking using E-learning techniques will improve job

performance)

Scoring system:

The scoring system for adolescents students attitude was calculated as the following: (0) score for don't agree, while, (1) score for sometimes, and (2) score for agree. These scores of items were summed up and the total divided by the number of the items, given a mean score for the part. These score converted into a present score. Adolescents healthy life style attitude classified as follow: The total level of adolescents students attitude was categorized as the following: Total scores of attitude= 124 points.

- Negative when total score was less than 60% (< 75 points).
- Positive when total score was more than 60% (> 75 points).

Content validity:

The tools validity was done by five staff nursing experts from Community Health Nursing in Benha Faculty of Nursing who reviewed the tools for clarity, relevance, comprehensiveness, and applicability.

Reliability of tools:

Reliability of the tool was applied by the researchers for testing the internal consistency of the tool by administration of the same tools to the same subjects under similar condition on one or more occasion. answers from repeated testing were compared (test-re-test reliability). the reliability was done cronbach's alpha coefficient test which revealed that each of the two tools consisted of relatively homogenous items as indicated by moderate to high reliability of each tool. the internal consistency of the knowledge was 0.94, while practices were 0.90 and patient's satisfaction was 0.97.

Ethical considerations:

All subjects were informed that participation in the study is voluntary; no name will be included in the questionnaire

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sheet. Anonymity confidentiality of each participant was respected and protected, confidentiality was assured and subjects was informed that the content of the tool was used for research purpose only and they have the right of refuse to participate in the study or withdrawal at any time without any consequences.

Pilot study:

A pilot study was carried out on 10% (38 students) from the total sample, no modification were done so the pilot study were included in the total number of the study sample. The aim of pilot study was to test the applicability and clarity of the tools and estimate the time for tool data collection. According to the results of the data analysis, no items corrections or modification so the pilole study included in the studied sample.

Fieldwork:

Data collection took about 3 months from the October to December 2022; the researchers prepared the questionnaire electronically via Google form design and took the permission from head of school and explained the aim and the nature of the study and the method of filling the electronic questionnaire to the adolescents students in the school and then the link was sent to adolescents students through the WhatsApp group. Adolescents students questionnaire link: (https://docs.google.com/forms/d/e/1FAIpQLScwsmWtAyGR4y_Ua2Ujn5yg7yAJd7_TVvvg6smL88VMdR9isA/viewfor).

The researchers was contacted with the studied students through WhatsApp group to determine and detect the appropriate time to fill out the questionnaire. On this basis, the researchers opened the questionnaire link daily from 6-8.PM., and responded to the studied students' inquiries in the event of a problem while filling out the questionnaire through the WhatsApp group. Data was collected daily and the average number of responses per day was

ranged between 3-6 response from adolescents students. Not just like that, the researchers also collected data about studied students' assessment of the educational environment of the school and availability of facilities through observational checklist format the researchers visit the schools during three days\ weak (Mondays\ Tuesdays\ Wednesdays). The time needed for filling the observational checklist ranged from 10-20 minutes.

Statistical analysis:

Computerized data entry and statistical analysis were fulfilling scored using Statistical Package for Social Science (SPSS), version (22). Descriptive statistic was first applied (frequency, percentage) then other statistical test such as, Chi-square and using mean and stander deviation. The correlation- coefficient was used (r).

Statistical significance was considered at:

- Significant result when P- value < 0.05.
- Highly significant result when P- value <0.001.
- Non- significant result when P-value >0.05.

Results:

Table (1): Shows that; 52.4% of the studied students aged 16-years with Mean±SD 16.51±0.57. Also, 52.7% of them were male and 44.1% of them were at the third grade and 82.4% of them lived in urban. Also; 39.4% of them ranked as the first child in the family. While, 59.6% of them obtained a training course on the practical application of the use of the educational platform.

Figure (1): Shows that; 49.2% of studied students had poor total knowledge regarding healthy life style. While, 32.2% of them had average total knowledge and 18.6% of them had good total knowledge regarding healthy life style.

Figure (2): Shows that; 67.6% of the studied students had unhealthy total life style practices

level, while, 32.4% of them had healthy total life style practices level.

Figure (3): Shows that; 65.7% of the studied students had negative total attitude level and 34.3% of them had positive total attitude level regarding healthy life style and electronic

platform.

Table (3): Shows that; there were highly statistically significant correlation between studied students total knowledge, total life style and total attitude.

Table (1): Frequency distribution of studied students regarding their Socio-demographic characteristics (n=376).

Socio – demographic characteristics	No	%
Age		
16	197	52.4
17	163	43.3
18	16	4.3
Mean ±SD	16.51±0.57	
Gender		
Male	198	52.7
Female	178	47.3
Academic Year		
First grade secondary	91	24.2
Second grade secondary	119	31.6
Third grade secondary	166	44.2
Residence		
Urban	310	82.4
Rural	66	17.6
Ranking in the family		
The first	148	39.4
The second	86	22.9
The third or more	133	35.4
The only	9	2.3
Training courses on the use of educational platforms		
A training course on what is the educational platform	152	40.4
A training course on the practical application of the use of the educational platform	224	59.6

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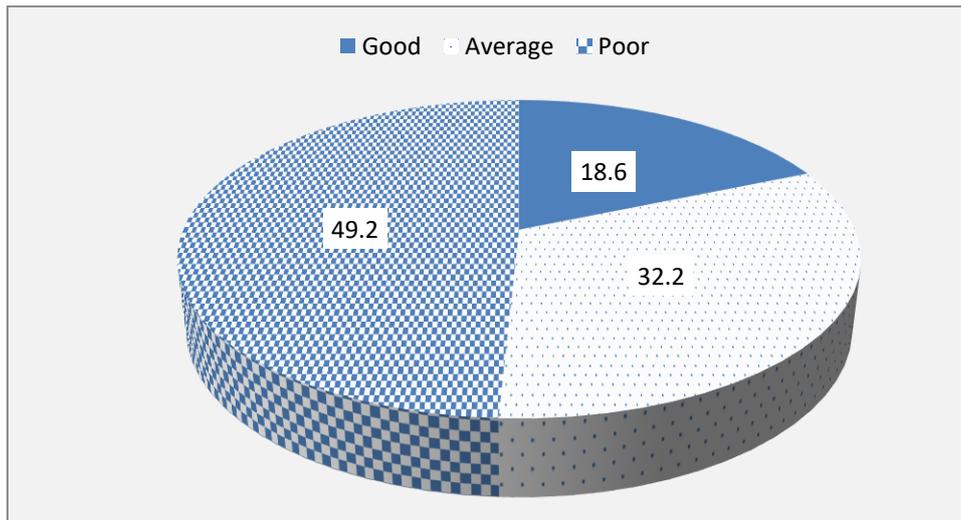


Figure (1): Percentage distribution of studied students regarding their total knowledge level regarding healthy lifestyle and electronic platform (n=376).

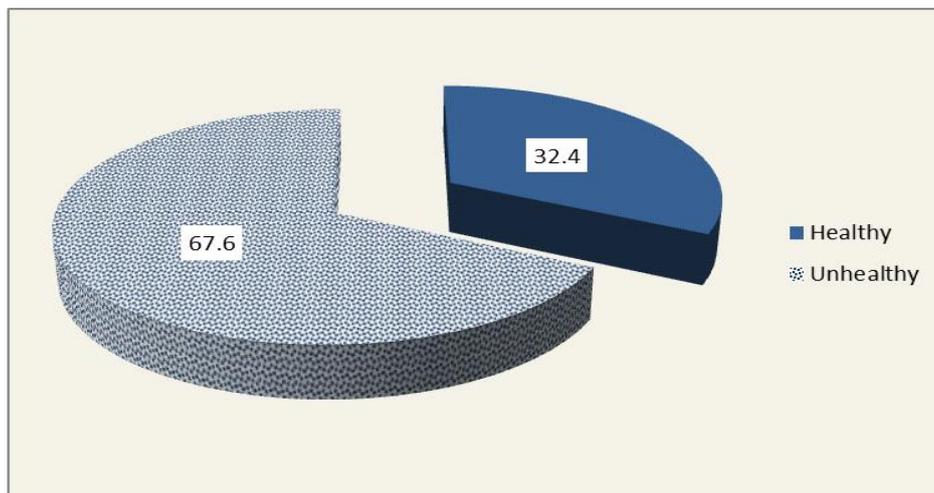


Figure (2): Percentage distribution of studied students regarding their total lifestyle practices level (n=376).

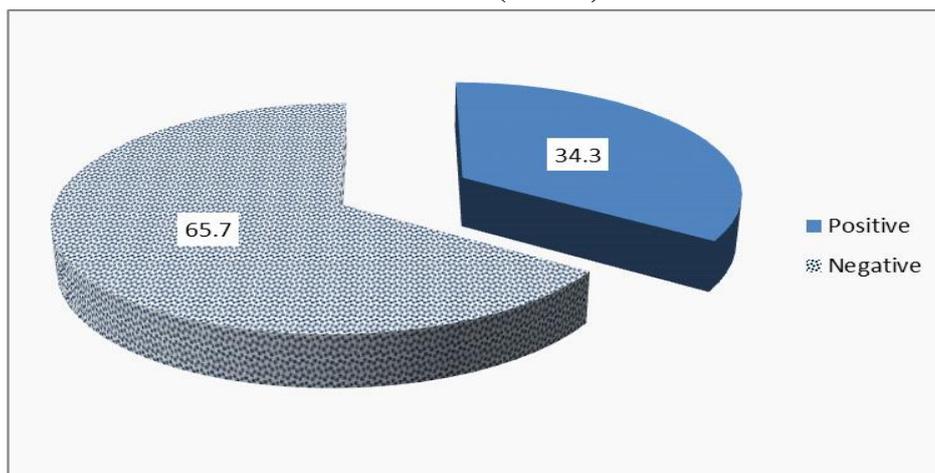


Figure (3): Percentage distribution of studied students regarding their total attitude level regarding healthy lifestyle and electronic platform (n=376).

Table (3): Correlation between total knowledge, total lifestyle practices and total attitude among studied students (n= 376).

		Total knowledge	Total lifestyle	Total attitude
Total knowledge	r	1	.370	.037
	p-value		.000**	.469
	n	376	376	376
Total lifestyle	r	.370	1	.303
	p-value	.000**		.000**
	n	376	376	376
Total attitude	r	.037	.303	1
	p-value	.469	.000**	
	n	376	376	376

Discussion

Adolescence is a critical time to establish the foundations of a person's health,. Healthy lifestyle behaviors are important characteristics in health promotion and may suppress markers of illness. Adolescence is often characterized by changes in lifestyle patterns, with reports that the average adolescent does not get the recommended health lifestyle. Recent qualitative research has identified the use of electronics and engagement with social media platforms affect to gaining sufficient quality health lifestyle during adolescence. (MacKenzie et al., 2022).

The media and electronic platform are focusing more and more on health-related issues and the government are spending more and more on health campaigns. Improve public health has undoubtedly contributed to increased public awareness of the importance of a healthy lifestyle. Lifestyles or simply ways of life are one of the most important factors influencing individual health and well-being (Alam, 2022).

Regarding socio-demographic characteristics the present study showed that; more than half of the studied students aged 16-years with Mean ±SD 16.51±0.57. Also, more than half

of them were male, more than two fifths of them were at the third grade, majority of them lived in urban. Also; more than third of them ranked as the first child in the family. While, less than three fifths of them obtained a training course on the practical application of the use of the educational platform.

These finding disagreed with **Franklin & Mohammad, (2021)** who studied "Knowledge, attitude and practice of adolescence and early adulthood on healthy lifestyle" in Al-namas (n=80) and reported that of the 42 more than half were aged 18-19 years and these more than two third were rural residents. The previous result was unsupported by **Huang et al. (2021)** who studied "The Association between home environment and quality of Life in children and adolescents in hangzhou city, China" (n=3200) and found that more than half of them were female and more than two fifths of them were at grade three. From the researchers point of view, this might be the same age, sex and grade.

Regarding total knowledge level about healthy life style the present study showed that; less than half of studied students had poor total knowledge regarding healthy life

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style. While, less than third of them had average total knowledge and less than one fifths of them had good total knowledge regarding healthy life style and electronic platform.

These findings who agreed with **Franklin & Mohammad, (2021)** they reported that of the more than half of studied students had poor knowledge about healthy lifestyle. In another hand; these findings contraindicated with **Al- Tawil et al., (2016)**, who studied "Knowledge and practices of a group of adolescents girls toward some aspects of their health and development" in Erbil-Iraq (n=441) and found that more than two thirds of the studied respondents had good total knowledge and rest of them had poor total knowledge regarding the healthy lifestyle. From the researchers' point of view, this result might be because the studied students didn't receive training courses concerning health and the healthy lifestyle before.

Regarding total lifestyle practices level the result of the present study denoted; more than two thirds of the studied students had unhealthy total life style practices level, while, less than one third of them had healthy total life style practices level. This finding was agreed with **Franklin & Mohammad, (2021)** they reported that of less than quarter studied students had excellent practice of the healthy lifestyle. Also, this findings agreed with **Almutairi et al., (2018)**, they studied "Health promoting lifestyle of university students in Saudi Arabia: a cross-sectional assessment" and stated that the majority of the studied students had total unhealthy lifestyle, while the minority of them had total healthy lifestyle. This might be because adolescents did not receive adequate education and training to practice various healthy lifestyle activities.

Regarding total attitude level the result showed that; more than two thirds of studied

students had negative attitude regarding healthy life style, while, more than third of them had positive attitude regarding electronic platform. Approximately two third of the studied students had negative total attitude level and more than third of them had positive total attitude level regarding healthy life style and electronic platform. This finding was agreed with **Franklin & Mohammad, (2021)**, they reported that of 21.2% studied students had excellent attitude regarding the healthy lifestyle. From the researchers's point of view, this might be due to the students did not receive sufficient education and training to practice learning about a healthy lifestyle through electronic platforms.

Regarding the correlation between total knowledge, total lifestyle practices and total attitude among studied students the results shows that; there were highly statistically significant relation between studied students total knowledge, total life style and total attitude (Table3). This finding was agreed with **Franklin & Mohammad, (2021)** they reported that there were statistically significant relation between studied students practices and total attitude regarding healthy life style. The previous result was supported by **Ghosh et al., (2020)** they studied "Knowledge, Attitude, and Practice (KAP) regarding personal hygiene among primary school going children in Sadar Upazilla, Noakhali District" (n=320) Bangladesh and reported that there were significant correlation among knowledge, attitude, and practice. In another hand, this finding was disagreed with **Ponce et al., (2019)** they studied "Behaviors, attitudes, and knowledge related to sun exposure among medical students" at the Universidad de Las palmas de Gran canaria. Actas Dermo-Sifiliográficas (n=286) and reported that student knowledge is not reflected in their behavior and attitudes. From the researchers' point of view, this might be due to high level

total knowledge, practice and attitude about healthy life style through electronic platform.

Conclusion

More than half of the studied students there age were 16-years with mean \pm SD 16.51 \pm 0.57. More than half of them were male and more than two fifth of them were at the third grade of secondary school and majority of them lived in urban. More than third of them ranked as the first child in the family. More than half of the studied students had extended type of family, majority of them had 4-6 individuals in the family and more than three quarters had sufficient family monthly income. Less than half of studied adolescent students had poor total knowledge regarding healthy life style and platform. More than two third of the studied students had unhealthy total life style practices level. Almost two third of the studied students had negative total attitude level regarding healthy life style and electronic platform. There were highly statistically significant relation between studied students total knowledge, total life style and total attitude.

Recommendations

- Health education programs should be developed about healthy life style among adolescent and its effect on health promotion.
- Develop and disseminate boosters and booklet about risks of unhealthy lifestyle practices.
- Establish electronic web page for adolescent to enhance and promote lifestyle.

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