

The Assessment of Lifestyle Status among High School and College Students in Luzon, Philippines

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Background: Lifestyle has been one of the central subjects of increasing research interest worldwide and acknowledged as part of the relevant factors of an individual's health status. The World Health Organization defines health as a state of complete physical, mental, and social well-being, and not merely the absence of disease. The purpose of this study is to assess lifestyle status among high school and college students and to explore which sociodemographic variables have influenced such existing healthy lifestyle behaviors.

Methods: This is a descriptive cross-sectional study that was conducted among 230 students from the high school and college. The questionnaire included descriptive information and the Healthy Lifestyle Screening Tool (HLST) to assess lifestyle scores among students from the high school and college. Socio-demographic characteristics of students included were perceived family income, domestic status or people living with, school life satisfaction, happiness rate, and self-rated health status.

Results: The results of this study showed the significance of lifestyle status among high school and college students having total scores of 106.56 (SD = 28.11) and 100.9 (32.91) respectively. Sociodemographic and health-related characteristics had significance in perceived economic status, life satisfaction, health status, and happiness rate. Furthermore, healthy lifestyle subcomponents had significant differences in water, air, rest, exercise, nutrition, and trust.

Conclusion: Healthy lifestyle status among students both in high school and college is low specifically in components such as sunlight, water, air, rest, exercise, nutrition, temperance as well as the general physical condition. Adherence to healthy lifestyle behaviors among students are needing emphasis and guidance through promotion and education. Health education programs and promotions in institutions need to be carried out and be well-implemented for students to achieve and maintain healthy lifestyle behaviors.

Key Words: Lifestyle status, High school students, College students

INTRODUCTION

Myriad research and studies spent numerous hours to prove their argument with regards to health endorsements and its relevance for humanity: perform exercise and physical activity [1,2]; consume variety and wholesome diet [3]; maintain a healthy weight [4]; have enough sleep [5]; get a medical screenings for blood pressure, cholesterol, and blood sugar [6]; be smoke-free; reduce alcohol intake to a prescribe amount [7,8] and the proper use of sunlight, wa-

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ter, rest, air etc. that would be significantly and positively correlated to human health [9]. The aforementioned evidence is just a few of an abundant exploration of knowledge about how to enhance life through healthy living, which is a measure to subsequently curtail the development of diseases.

Lifestyle has been one of the central subjects of increasing research interest worldwide and acknowledged as part of the relevant factors of an individual's health status since persons vary in their lifestyle behavior. The World Health Organization (WHO) defines health as a "state of complete physical, mental, and social well-being, and not merely the absence of disease". It adds further that 60% of the quality of an individual's life correlates on an individual's behavior and lifestyle [10] and even suggested recommendations that Healthy Lifestyle can reduce the risk of avoidable health problems and improve a person's quality of life. Research publications supported the notion of the WHO have shown that healthy lifestyle practices reduce disease incidence and mortality rates [11-13]. People who practiced healthy lifestyle behaviors can resist health risks associated to disability and disease in later life.

A person may have adopted either a positive health behavior that demands conscious efforts on one's part to effectively improve one's health and also protect the health of others. In contrast, an individual who has embraced the health-risk behavior adversely affects one's health due to incorrect habits and practices from wrong information and an unhealthy environment [14]. Individuals who accept the positive health behavior should make their decisions in accommodating correct behaviors and refrain from the health-risk behaviors.

The world of high school and college students may have two very different phases of life yet the two of them could not be further apart; both belong to the period of adolescence and young people as defined by the WHO [15]. The high school is a stage in life that an individual begins to develop a self-awareness that exists around them. They are exposed to a variety of circumstances and experience diverse needs to cope [16]. The college period is crucial as it is constantly changing as well as demands in school are more rigid than their high school counterpart. The latter enters a dynamic period of new independence from their parents and the al-

tered patterns of life, which increases workloads and stress that are relevant factors that adversely affect health. The dramatic transition from childhood to adulthood in the aspect of physical, sexual, psychological and social changes not only poses opportunities for the development of their well-being but the probability to put a person's health and well-being at risk [17,18]. This critical time in which individuals adopt healthy and unhealthy lifestyle habits offers an opportunity to be seized.

Generally, adolescence and young adulthood is often thought of as a period of relatively good health, however studies show that 10-24-year-olds remain at substantial risk of morbidity and mortality. Chronic illnesses that commonly found among adults are starting to affect the younger generation. Unhealthy behaviors such as poor choices of rest and relaxation habits, lack and irregular sleeping patterns, poor nutritional intake, unprotected sex, smoking addiction and relaxation, physical inactivity and sedentary lifestyles are just pieces of evidence that have consistently shown among adolescent and young people that have been correlated to disability and disease in later life. Such unhealthy behaviors have unfavorable impacts on the health and wellbeing of these students which leads to a higher risk of coronary heart disease, diabetes and obesity [19].

The early adoption of healthy living habits has a better end of having a healthy lifestyle. In contrast, unhealthy habits in adulthood have a strong link of unhealthy habits during their youth. The health risk behavior patterns and their consequences generally continue into adulthood, which is detrimental to the health status in later life [20]. Although it is challenging to change unhealthy habits that adults have adopted in their youth, many effects of health risk factors among adults are preventable if these behaviors are recognized and modified at an early stage. The emphasis to increase healthy lifestyle behavior among young people through examining the health behavior at this stage, giving them the correct health behaviors in improving their health and supplying their lack of knowledge about positive lifestyle is of great importance.

Recent studies showed that college experience is more critical time than in high school. The former is presented with more challenges in many aspects than the latter: adapting to new social environments, behavioral autonomy and ad-

adjustments to loaded schedules. The transition from high school to college provides more freedom and less social control than the high school years. It presents changes in social environment and role responsibilities that is so evident that college students are more susceptible to employ in risky health behaviors that adversely affect well-being such as physical inactivity, stress and poor dietary habits [21-23]. While high school starts one's life of complete awareness about himself and things that surrounds them, however, college students, which from a large part of the young population, are progressively make independent decisions about their lifestyle and health implementation. Therefore, investigating student's lifestyle is fundamental aimed at improving their quality of life.

Health education in both high schools and college environment is an ideal and cost-effective means of developing healthy lifestyle because these individuals are in a unique stage of knowledge absorption and personality shaping. A positive response has shown towards healthy lifestyle behaviors among students after receiving the health promoting lifestyle [21]. High school and college student both constitute a major part of the young population and should be the chief target population for education about the significance of healthy lifestyles. It is fundamental for the promotion of their healthy progress to investigate their healthy lifestyle behavior and influential elements.

The interest of higher development of knowledge in the global arena made other countries boost their field of education as the demand for global education increases. The Department of Education (DepEd) in the Philippines reported 28 million students as of 2017, which a large portion of it is in high schools and colleges and is expected to double the population in the in coming years [22]. Studies showed that high school and college students in the Philippines engage in health-risk behavior such as smoking, drinking, lack of exercise, deprivation of sleep and poor eating habits. Moreover, the possibility that this adolescents and young adults in high school and colleges have a higher chance to fall into illegal use of drugs as data showed through the Dangerous Drugs Board the prevalence of Filipinos used of prohibited substances [23].

There had been abundance of results on the healthy lifestyles and influential factors of high school and college stu-

dents chiefly from developed countries in the West and other developed Asian neighbors however the evaluation that assess students from high school and college with regards to their lifestyle is wanting. In the Philippines, few studies addressed the health status and there is less information supplied primarily focus to high school and college students about promoting healthy lifestyle behavior nor a research was found an assessment between high school and college populations in Healthy Lifestyle. Thus, this current study was conducted to assess lifestyle status among high school and college students.

MATERIALS AND METHODS

1. Sample and selection

This descriptive cross-sectional study was conducted from July 2017 to January 2018 at Santa Lucia High School and University of the Philippines, in the Philippines. A sample of 230 students selected randomly participated in this study. Subjects of this study was selected based on purposive sampling of which focused group is being identified by the ASEAN Training Center for Preventive Drug Education (ATCPDE). Prior to conducting this study, ethical approval was obtained from the Schools Division Superintendent's approval to administer the study. All the students to be included in the research were informed about the objective of the research before the application of forms, written informed consent was received from the students, confidentially principle was observed, and each respondent was free to discontinue participation at any time.

2. Questionnaire

The questionnaire included descriptive information and the Healthy Lifestyle Screen (HLS) [9] to assess the lifestyle scores among high school and college students. Descriptive information was collected on the socio-demographic characteristics of students (age, gender, year level, family monthly income level, life satisfaction, happiness rate, and health status).

The HLST was developed based on the De Vellis' 8 steps guideline for tool development and a detailed description on the validity and reliability of the scale can be found in the previous publication. It consisted of 36 items which were

divided into three categories: physical/mental, lifestyle behavior and environment including the eight dimensions of lifestyle such as sunshine exposure, water intake, quality of air, quality of rest or sleep, exercise of physical activity, dietary behavior, temperance or self-control, trust and general physical condition. The frequency of reported behaviors was obtained using a self-reporting Likert rating scale with a four-point response format (4; strongly agree, 3; agree, 2; disagree, 1; strongly disagree). HLST is a self-administered instrument that takes approximately 10 minutes to complete. The total score obtained from the scale indicates the level of healthy lifestyle behaviors. A higher score on the HLST indicates of a healthy lifestyle.

3. Fieldwork

The survey was conducted in the midsemester to avoid the confounding effects of seasonal holidays and the stressful examination periods. The Study was intended to identify the usual pattern of high school and college students on their health practices. To maximize the response rate and avoid researchers' influence on the respondents, all questionnaires were delivered and collected face to face by the students whom the researchers had trained as interviewers. The respondents completed the questionnaires individually, and the interviewers were on site to explain any unclear items without inducement.

4. Data management

All valid questionnaires were entered in duplicate into the database by the assigned PhD students using the Statistical Package for Social Sciences (SPSS 23) for Windows statistical software. Any discrepancy between the researchers was resolved by cross checking the duplicate data manually and by computer. All the Data from 230 valid questionnaires were analyzed in this study.

5. Statistical analysis

Statistical Analysis was carried out by using the Statistical Package for Social Sciences (SPSS 23) for windows statistical software. Using frequencies, percentages, means and standard deviations performed the statistical description of the sociodemographic variables. To determine significance between the two groups, Independent T-test was used. Sta-

tistical significance will be set at $p \leq 0.05$.

RESULTS

Characteristics of the participants are summarized in Table 1. The participants in this study were high school and

Table 1. Socio-demographic characteristics of the sample (N = 230)

Socio-demographic characteristics	Frequencies (n)	%
Education		
High school	180	78.3
College	50	21.7
Gender		
Male	68	29.6
Female	162	70.4
Age		
12-14	81	35
15-18	103	45
19-22	29	13
23-25	17	7
Perceived family economic status		
Very rich	2	0.9
Rich	11	4.8
Average	41	17.8
Poor	112	48.7
Very poor	64	27.8
Perceived school life satisfaction		
Very satisfied	138	60
Satisfied	42	18.3
Neither satisfied nor dissatisfied	24	10.4
Dissatisfied	25	10.9
Very dissatisfied	1	0.4
Domestic status		
Both parents	115	50
Only with mother	98	42.6
Only with father	6	2.6
Other relatives	4	1.7
Friends	5	2.2
Others	2	0.9
Happiness rate		
Excellent	39	17
Good	139	60.4
Fair	41	17.8
Poor	11	4.8
Very poor	0	0.0
Health status		
Excellent	23	10
Good	143	62.3
Fair	53	23
Poor	7	3
Very poor	4	1.7

college students. Of the 230 students who completed the questionnaire, 180 (78.3%) high school and 50 (21.7%) college students of which composed of 68 (29.6%) male and 162 (70.4%) female subjects with the mean age of 15-18 years old. Other characteristics of subjects in this study include perceived economic status is poor (48.7%), domestic status is living with both parents (50%), school life satisfaction is very satisfied (60%), happiness rate is good (60.4%), and perceived health status is good (62.3%).

The results in Table 2 showed the comparison of healthy lifestyle scores and components of which high school students obtained higher total mean score (106.56) than college students (100.9) indicating unhealthy lifestyle status. For the healthy lifestyle components, high school students are low in rest with the mean of 2.47 (SD = 0.86), water with the mean of 2.68 (SD = 0.67), exercise with the mean of 2.79 (SD = 0.81), sunlight with the mean of 2.96 (SD =

0.83), temperance with the mean of 2.99 (SD = 0.81), and general physical condition with the mean of 2.99 (SD = 0.8). For the college students, most of the components are low such as air with the mean of 2.55 (SD = 0.89), exercise with the mean of 2.63 (SD = 0.86), nutrition with the mean of 2.69 (SD = 0.86), rest with the mean of 2.73 (SD = 0.94), water with the mean of 2.81 (SD = 1.05), sunlight with the mean of 2.85 (SD = 0.88), temperance with the mean of 2.89 (SD = 0.99), and general physical condition with the mean of 2.92 (SD = 0.85).

Table 3 showed the socio-demographics and health related characteristics of participants of subjects from both the high school and college. Perceived economic status was higher among college school students (1.16) than to the high school students with a significance of $p < 0.000$. Life satisfaction of college students (1.36) is also higher than the high school students with a significance of $p < 0.021$. For happiness rate and health status both participants the high school and college students have the same mean score 1.72 and 1.10, respectively with a significance of $p < 0.000$ and $p < 0.001$.

Table 2. Healthy lifestyle scores of high school and college students (N = 230)

	High School Mean ± SD	College Mean ± SD
Sunlight	2.96 ± 0.83	2.85 ± 0.88
Water	2.68 ± 0.67	2.81 ± 1.05
Air	3.14 ± 0.82	2.55 ± 0.89
Rest	2.47 ± 0.86	2.73 ± 0.94
Exercise	2.79 ± 0.81	2.63 ± 0.86
Nutrition	3.21 ± 0.72	2.69 ± 0.86
Temperance	2.99 ± 0.81	2.89 ± 0.99
Trust	3.38 ± 0.66	3.14 ± 0.8
General physical condition	2.99 ± 0.8	2.92 ± 0.86
Total	106.56 ± 28.11	100.9 ± 32.91

DISCUSSION

Findings of this study provide insight into two main directions. First, it was identified that students in both high school and college obtained low scores in their lifestyle status assessment. All components are in low except for the trust component indicating having purpose in life, being hopeful in the future, feeling loved by family and friends, and pray or meditate in a regular basis. Second, healthy life-

Table 3. Correlation of socio-demographics and health-related characteristics to healthy lifestyle of high school and college students

Descriptive	High school			College			p-value
	Frequency (n)	%	Mean	Frequency (n)	%	Mean	
Gender							
Male	54	30		14	28		
Female	126	70		36	72		
Age (yr)			16.25			22.18	
Perceived economic status			1.04			1.16	0.000
Domestic status			1.53			1.38	0.157
Life satisfaction			1.19			1.36	0.021
Happiness rate			1.72			1.72	0.000
Health status			1.10			1.10	0.001

style behaviors were modulated by gender, perceived family economic status, domestic status, school life satisfaction, and happiness rate and health status when being controlled as social and demographical variables [21,22]. College students represent a major segment of the young population, the pressure of work is so severe that much of their time and energy is likely to be occupied with their studies as well as in the stage of their lives of which lifestyle modification is a necessity as this group lead an unhealthy lifestyle [23-25]. This situation seems more conspicuous among Filipinos of which students engaged into drug consumption especially tobacco and alcohol, unsuitable diet indicating the prevalence of obesity that continuously increasing, as well as insufficient physical activities [26-28]. Moreover, results of this study showed that rest component of healthy lifestyle pertaining to sleeping for 7 to 8 hours, using of electronic devices such as phones, TV, and computers, not exercising right before bedtime, and going to bed early and waking up early obtained the lowest mean score for both high school and college students.

In this era, more and more students practiced unrestricted sleeping behavior. Lack of sleep among students has been identified as one of healthy lifestyle related impediments to their academic performance of which is associated with lower grades, incompleteness of courses, as well as negative moods and developing negative behaviors. The excessive use of electronic devices as link to smartphone addiction such as fear of missing out (FoMO), excessive use of social networking sites (SNSs) on smartphones had taken toll on the sleep duration among high school students as well as college students [29-31]. Sleeping late at night had adverse effects of a bad diet. Lack of sleep was identified as one of the factors increasing the frequency of intake of snacks [32,33], inactivity due to sleep deprivation [34,35], and engagement into substance abuse such as binge drinking, disturbance of sleep due to cigarette smoking, and as a chronic symptom of drug-taking and withdrawal. Lack of sleep affects the mental health of an individual. Sleep disorders can be recognized that are associated with such diverse diseases as well as depression and that deprivation from sleep could lead to suicidal attempts [36,37].

Lee and Loke [38] had indicated in their study that college students displayed unhealthy behaviors of which imme-

diately effects of these unhealthy behaviors are unnoticed. In the study conducted among Chinese students, it was found that healthy lifestyle scores were better in freshmen than other groups as research assumed that there is not much workload and stress in this stage. However, college students in higher level such as senior revealed that obtained low healthy lifestyle scores as they were engaged in coping with increasing workload and employment stress and had less enthusiasm for college life owing to a longer time of sensitization [39,40]. In addition, the third finding of this study was pertaining to the lifestyle component scores on water, air, rest, exercise, nutrition, and trust have significant differences between high school and college students. Healthy lifestyle education induced among individuals indicated that they practiced better lifestyle such as exercising regularly. Determination of healthy lifestyle behaviors among high school students believed to improve and sustain their well-being and the development of healthy lifestyle behaviors in this stage of life is the basis of disease prevention and maintaining health. Adherence to healthy lifestyle is demonstrated based on the cognitive beliefs about leading a healthy lifestyle along with attitudes and intended choices are significantly related to lifestyle components such as physical activity as well as the intake of fruits and vegetables. High school students' healthy lifestyle behavior change is important aspect in implementing strategies to strengthen their cognitive beliefs about their ability to make healthy choices and engage in healthy lifestyle behaviors. It is necessary to note that strengthening these beliefs should lessen their perception that these healthy and positive behaviors are difficult to perform. Another lifestyle component that is significant between high school and university students is trust of which includes having a purpose in life, hopeful about the future, feel loved by family and friends, as well as praying and meditating on a regular basis. Trusting and caring relationships between students and teachers appear to be essential in opening possibilities for regular participation in healthy lifestyle programs and education such as physical activities. The positive inputs of family, teachers, and even peers specifically in promoting health and wellbeing which is often overlooked, had a positive effect among students to achieve and maintain healthy behaviors. Giving emphasis on coping with stress as well as

the physical and psychological health among college students beyond academic and economic constraints through intervention programs decrease the risk of potential health issues among them [41,42].

This study also found out that demographic factors such as perceived family income, family domestic status or people living with, life satisfaction, health status, and happiness rate were also significantly different. Parental education has a significant impact on children's health and in usage of health services. Health is affected among children with lower educated parents compared to those of higher education [43-46]. Case and colleagues [47] reported the children's health positively affected by the household income as well as influenced the health-related quality of life [48-52]. Morgan and colleagues [53] had identified a program on lifestyle interventions for children of which the relationship between health and behavior of the parents specifically the mothers and their children's well-being, but the in-turn act as role models to promote positive physical activity and healthy lifestyle. Steptoe [54] had given emphasis regarding the possibility that impaired happiness is not only a consequence of ill health but also a potential contributor to disease risk.

There were some limitations of this study including the aspects such as that there was no detailed information from the respondents and although the researchers received the same training, their explanations of questionnaire items may have influenced the results. Third, the sample size was drawn in one of the main islands of the country of which vary from other locations such as in rural areas. Thus, further studies should be conducted in multiple national and global settings to determine the difference of healthy lifestyle behaviors between high school students from the college students as well as associated factors more fully for the findings to be applied widely among health-promoting institutions such as schools, academies, and universities.

CONCLUSION

This study concluded that the high school and college students are needing guidance and education to adhere healthy lifestyle behaviors. Healthy lifestyle components including water, air, rest, exercise, nutrition, and general physical con-

dition is low among students both in high school and college of which signifies unhealthy lifestyle status. Moreover, these can be predicted to some extent by sociodemographic characteristics including perceived economic status, family domestic status or people living with, life satisfaction, health status, and happiness rate. These results are relevant information for future studies specifically among students at both high school and college levels as they are in the stage of developing new behaviors as well as in establishing resilience. Health education programs and promotions in institutions such as schools, academies, and universities should be carried out and be well-implemented for students to achieve and maintain healthy lifestyle behaviors.

CONFLICTS OF INTERESTS

None to declare.

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