

# The Realities of Lifestyle, Health Behavior, and Quality of Life of University Students

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*Key words* : university students, lifestyle, health behavior, quality of life

**Abstract** Lifestyle and health behavior are known risk factors for non-communicable diseases (NCD), and they can affect quality of life (QOL). University students are future decision makers in institutions, societies, and countries. Thus, the objectives of this study were to examine the reality of the lifestyles, health behaviors, and QOL of university students and to clarify the relationship between their health behaviors and QOL. The sample was 199 students at “A” University, in grades of first-year to fourth-year during the academic year 2014–15. A self-administered questionnaire assessed the demographic variables, health statuses, lifestyles, health behaviors, and QOL of the students. The amount of time spent watching television was higher among students living alone. Female students had higher amounts of study time and a greater prevalence for adequate sleep (7–8 hours) than their counterparts. Regular exercise was higher among male students. Alcohol consumption and smoking were higher among male students, and students living with families ate breakfast regularly. There was weak positive correlation between WHO Quality of Life-BREF and Breslow’s health habits. This study showed that effective health education that considered differences of gender and family condition is especially relevant for the promotion of their health because the QOL at this phase of development creates a foundation for health and QOL in late adulthood.

## Introduction

A non-communicable disease (NCD) involves a non-infectious medical condition or disease. NCDs have long durations, and in general, progress slowly. Risk factors such as a person's background, lifestyle, and environment are known to increase the likelihood of certain NCDs. For this reason, the term “lifestyle diseases” is sometimes used instead of NCD. The World Health Organization (WHO) reports that NCDs are by far the leading cause of mortality (deaths) in the world. Therefore, the prevention and control of NCDs are becoming increasingly important for the global health agenda.<sup>1)</sup>

In Japan, the increase of lifestyle diseases among its population is an important health problem. To prevent lifestyle diseases, it is necessary to consider the current state

of one’s lifestyle and behavior factors such as diet, physical activities, smoking, alcohol consumption, and other issues related to these factors.<sup>2)</sup>

Health behaviors have been defined in various ways. For example, health behaviors can include any activity undertaken for the purpose of preventing or detecting disease or for improving health and well-being.<sup>3)</sup> Health behaviors can also be defined as behavior patterns, actions, and habits related to maintaining, restoring and improving health.<sup>4)</sup>

Lifestyles are expressed in work and leisure behavior patterns as well as in activities, attitudes, interests, opinions, values, and income allocations. Lifestyles are also reflected in people's self-images or self-concepts, i.e., the way they see themselves and the way they believe they are seen by others. Lifestyles are a composite of motivations, needs, and wants and are influenced by factors such as culture, family,

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and social class.

The WHO defines quality of life (QOL) as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns. It is a broad-ranging concept affected in a complex way by a person's physical health, psychological state, level of independence, social relationships, personal beliefs, and relationship to salient features of their environment.<sup>5)</sup>

Young adults are very important in promoting health in the community because they are the foundation of future generations. According to Erikson's stages of development, young adults are 18–35 years old. Most university students belong to this age group, and they are in a dynamic transition period that functions as a bridge from adolescence to adulthood. During this period, many rapid interrelated changes occur in young people's bodies, minds, and social relationships.<sup>6)</sup>

A young adult's behavior is affected by the social environment in which they live.<sup>6)</sup> University environments include stressful situations and diverse lifestyles. The years students spent at a university are a life phase in which they rapidly make independent decisions about their lifestyles and health practices.<sup>7)</sup> However, student life at a university includes stressors, such as the need to pass exams, complete assignments, complete degrees in a set amount of time with reasonable grades, and find a good job after completing a degree. In combination with the experiences of freedom from parental control and monitoring, such stressors may support the development of risky lifestyles such as the high consumption of alcohol and drugs, smoking, and a low concern for healthy nutrition and restful sleep.

A study<sup>8)</sup> on Japanese university students mentions that most students in their second, third, and fourth years are not very physically active and have irregular eating habits. Consequently, insufficient nutrition leads to becoming underweight. It follows that it is important to develop interventions to help students improve their healthy lifestyles in the university environment and establish health-aware lifestyles among young adults.

University students represent future decision makers in institutions, societies, and countries. Thus, it is important to pay attention to their lifestyles, health behaviors, and QOL. This study was intended to examine the health behaviors, lifestyles, and QOL of university students and to draw a

clear relationship between health behaviors and QOL.

## Methods

### Study population

Data were collected from 199 students from grades of first-year to fourth-year in two classes at "A" University during the academic year 2014–15.

### Study instruments and materials

A questionnaire with four individual sections was designed for this study. The first section was related to demographic variables. The second section of the questionnaire focused on the students' lifestyles. The third section of the questionnaire covered health behaviors as reflected in Breslow's seven health habits<sup>9)</sup> and the fourth section focused on the QOL as reflected in the WHO Quality of Life-BREF (WHO QOL BREF) instrument<sup>10)</sup>.

Breslow's health habits encompass seven health behaviors: adequate sleep time (7–8 hours), do not smoke, maintain proper body weight, do not drink alcohol excessively, do regular exercises, eat breakfast every day, do not eat snacks. A 2-point response scale (1 = "yes", 2 = "no") was used to determine the frequency of each behavior.

The WHO QOL BREF instrument has 26 questions related to QOL, health, and other areas of life categorized into overall QOL and four other domains: physical health, psychological health, social relationships, and environment. Four types of 5-point response scales were used (one type for one question) for each question. The total scores were calculated for every domain and divided by the number of items to compare.

### Data collection

Data were collected using a self-administered questionnaire. Questionnaires were distributed after class by a researcher. The students were informed about the purpose of the study. The submission of the completed questionnaire was considered to indicate willingness to participate and was taken as informed consent. Students were instructed that participation was voluntary and that information provided would be confidential. Survey procedures were designed to protect the students' privacy and to allow anonymous participation. To ensure anonymity, no names were required on the questionnaire. After the students completed the

questionnaire, the students returned them to a designated box.

### Ethical consideration

This study was conducted after obtaining approval from the Research Ethics Review Committee of the Department of Nursing, School of Health Sciences, Faculty of medicine, Niigata University. The study was performed in accordance with the Ethical Guidelines for Nursing Researchers by the International Nurses Association. Participants were instructed that data was kept in a locked box during the study period and destroyed after the end of the study.

### Data analysis

Students under 20 years old were excluded from the analysis because of the inclusion of questions on smoking and drinking. Data were analyzed using the Statistical Package SPSS version 22. Percentage calculations, descriptive statistics, the chi-squared test, and the independent t-test were used to evaluate the data. The independent t-test was utilized to compare WHO QOL BREF scores according to the properties. The chi-squared test was used to compare the percentages of properties in the analysis of the students' health behaviors and lifestyles. A p value of <0.05 was considered statistically significant.

### Results

The participants consisted of 108 students. The response rate was 54.3%.

### Demographic characteristics of participants

Table 1 depicts the demographic characteristics of participants. Of the participants, 24 (22.2%) were males and 84 (77.8%) were females. Seven (6.5%) were first-year students, 15 (13.9%) were second-year students, 11 (10.2%) were third-year students, and 75 (69.4%) were fourth-year students. Of

Table 1: Characteristics of participants

(N=108)			
		n	%
Gender	Male	24	22.2
	Female	84	77.8
Grade	1st-year	7	6.5
	2nd-year	15	13.9
	3rd-year	11	10.2
	4th-year	75	69.4
family condition	Alone	83	76.9
	Nuclear Family	14	13.0
	Three generation	7	6.5
	Other	4	3.7

Table 2: Students' Life-style

(N=108)													
		Total		Gender				p	Family Condition				p
				Male (n = 24)		Female (n = 84)			Alone (n = 83)		With Family (n = 25)		
		n	%	n	%	n	%	n	%	n	%		
Attain to circle/club	Not participating	51	47.2	8	33.3	43	51.2	n.s.	34	41.0	17	68.0	0.018
	Participating	57	52.8	16	66.7	41	48.8		49	59.0	8	32.0	
Part time job	Not participating	31	28.7	8	33.3	23	27.4	n.s.	23	27.7	8	32.0	n.s.
	Participating	77	71.3	16	66.7	61	72.6		60	72.3	17	68.0	
Time on TV	2 or more hours	37	34.3	7	29.2	30	35.7	n.s.	33	39.3	4	16.0	0.028
	Less than 2 hours	71	65.7	17	70.8	54	64.3		50	60.2	21	84.0	
Time with SP or PC	2 or more hours	55	50.9	12	50.0	43	51.2	n.s.	43	51.8	12	48.0	n.s.
	Less than 2 hours	53	49.1	12	50.0	41	48.8		40	48.2	13	52.0	
Learning hours	2 or more hours	37	34.3	2	8.3	35	41.7	0.002	27	32.5	10	40.0	n.s.
	Less than 2 hours	71	65.7	22	91.7	49	58.3		56	67.5	15	60.0	

No answer was excluded from analysis.

n.s. not significant

chi-squared tests were conducted.

the students, 83 (79.6%) lived alone, 14 (13.0%) lived with a nuclear family, 7 (6.5%) lived with a three-generation family, and 4 (3.7%) lived with other family structures.

### Students' Lifestyles

Table 2 shows data regarding the students' lifestyles according to gender and family condition. Participation in circles or clubs was significantly higher among students living alone ( $p = 0.018$ ). The amount of time spent watching television was significantly higher among students living alone than those living with family ( $p = 0.028$ ). The amount of time spent studying was higher among female students ( $p = 0.002$ ).

### Health behavior

Table 3 depicts health behavior data according to gender and family condition. Female students had higher rates of adequate sleep time than male students ( $p = 0.040$ ). The smoking prevalence was higher among male students than female students ( $p = 0.008$ ). Alcohol consumption was higher among male students than female students ( $p = 0.001$ ). More male students performed regular exercise than female students ( $p = 0.011$ ). Students living with their families ate breakfast more regularly than students living alone ( $p = 0.006$ ). Regarding the other domains, no

significant difference was observed between gender and family condition.

### Quality of life

Table 4 reports the distribution of the WHO QOL BREF scores according to gender and family condition. Male students had significantly better physical health ( $p = 0.025$ ) and psychological health ( $p = 0.005$ ) than female students. Regarding the other domains, no significant difference was observed between gender and family condition.

Table 5 shows that there was weak positive correlation between Breslow's health habits and the overall QOL scores ( $r = 0.213$ ,  $p = 0.028$ ), and between Breslow's health habits and the environments QOL scores ( $r = 0.214$ ,  $p = 0.030$ ). Regarding the other domains of QOL, no correlation was observed among Breslow's health habits.

### Discussion

#### Lifestyles of students

Lifestyles of students were considered based on gender and family condition. At first, from gender perspectives, the results of this study suggested that the amounts of female students' study time were higher than those of male students. With regard to gender differences in time

Table 3: Breslow's health habits

(N=108)														
		Total		Gender				<i>p</i>	Family Condition					
				Male ( <i>n</i> = 24)		Female ( <i>n</i> = 84)			Alone ( <i>n</i> = 83)		With Family ( <i>n</i> = 25)		<i>p</i>	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%		<i>n</i>	%	<i>n</i>	%		
Adequate sleep time	adequate	64	59.3	10	41.7	54	65.1	0.040	48	57.8	16	66.7	n.s.	
	not adequate	43	39.8	14	58.3	29	34.9		35	42.2	8	33.3		
Do not Smoke	smoking	4	3.7	3	13.0	1	1.2	0.008	2	2.4	2	8.3	n.s.	
	not smoking	102	94.4	20	87.0	82	98.8		80	97.6	22	91.7		
Maintain proper body weight	maintain	83	76.9	16	66.7	67	80.7	n.s.	64	77.1	19	79.2	n.s.	
	not maintain	24	22.2	8	33.3	16	19.3		19	22.9	5	20.8		
Do not drink alcohol excessively	excessive	19	17.6	10	41.7	9	10.8	0.001	15	18.1	4	16.7	n.s.	
	not excessive	88	81.5	14	58.3	74	89.2		68	81.9	20	83.3		
Do regular exercises	regular	47	43.5	16	66.7	31	37.3	0.011	33	39.8	14	58.3	n.s.	
	not regular	60	55.6	8	33.3	52	62.7		50	60.2	10	41.7		
Eat breakfast everyday	everyday	54	50.0	10	41.7	44	53.0	n.s.	36	43.4	18	75.0	0.006	
	not everyday	53	49.1	14	58.3	39	47.0		47	56.6	6	25.0		
Do not Eat snacks	eating	20	18.5	4	16.7	16	19.3	n.s.	17	20.5	3	12.5	n.s.	
	not eating	87	80.6	20	83.3	67	80.7		66	79.5	21	87.5		

No answer was excluded from analysis

n.s. not significant

chi-squared tests were conducted.

management, a previous study showed that female students' time management scores were higher than those of male students.<sup>11)</sup> This implies that female students, in terms of time management, were generally more accomplished than their male counterparts.

Second, from family condition perspectives, time spent watching television was significantly higher in students living alone. One common strategy for those who live alone is to compensate by having the television constantly on in the background.<sup>12)</sup> These findings may be related to loneliness experienced by students. Because of increasing use of modern technology, being home alone does not feel like social isolation or solitary confinement. On the other hand, participation in circles or clubs was significantly higher in students living alone. Extracurricular activities provide a setting to become involved and to interact with other students, leading to increased learning and enhanced development.<sup>13)</sup> Thus, these activities lead to increased learning and enhanced development, particularly in the case of students living alone.

### Students' health behaviors

Students' health behaviors were also considered based on gender and family condition. From gender perspectives, the findings of this study indicated that more female students had adequate amounts of sleep than male students, and males were generally more likely to perform regular exercise than female students, although smoking rates and excessive alcohol consumption rates were higher in male students than female students. Engaging in adequate amounts of sleep and regular exercise have several potential health benefits, but smoking and high alcohol consumption has been linked to a range of negative health outcomes, including high blood pressure and heart disease.<sup>14)</sup> Health problems are related to amounts and spans exposed to risks. Thus, male students have more health risks than do female students.

Viewing in family condition, the findings of this study revealed that students living with their families ate breakfast more regularly than students living alone. This finding is congruent with a previous study<sup>8)</sup> suggesting that students living with their families had better nutritional habits such as eating breakfast, reading nutrition labels to determine fat and sodium contents in packaged food and consuming 2–3

Table 4: WHO QOL BREF

(N=108)

Domain (number)	Total	Gender		<i>p</i>	Family Condition		<i>p</i>
		Male ( <i>n</i> = 24)	Female ( <i>n</i> = 84)		Alone ( <i>n</i> = 83)	With Family ( <i>n</i> = 25)	
	Mean±SD	Mean±SD			Mean±SD		
Overall QOL (2)	3.4 ± 0.8	3.4 ± 0.8	3.4 ± 0.8	n.s.	3.4 ± 0.8	3.4 ± 0.8	n.s.
Physical Health (7)	3.4 ± 0.5	3.6 ± 0.4	3.3 ± 0.5	0.025	3.4 ± 0.5	3.4 ± 0.5	n.s.
Psychological Health (6)	3.4 ± 0.6	3.6 ± 0.5	3.3 ± 0.6	0.005	3.4 ± 0.5	3.3 ± 0.6	n.s.
Social Relationship (3)	3.5 ± 0.6	3.5 ± 0.7	3.5 ± 0.6	n.s.	3.5 ± 0.6	3.4 ± 0.7	n.s.
Environment (8)	3.5 ± 0.6	3.4 ± 0.4	3.5 ± 0.6	n.s.	3.5 ± 0.5	3.4 ± 0.8	n.s.
WHO QOL BREF (26)	3.4 ± 0.4	3.5 ± 0.4	3.4 ± 0.4	n.s.	3.4 ± 0.4	3.4 ± 0.5	n.s.

n.s. not significant

t-tests were conducted.

Table 5: Correlations between Breslow's health habits and WHO QOL BREF

(N=108)

	Overall QOL	Physical Health	Psychological Health	Social Relationship	Environment	WHO QOL BREF (Total score)
Breslow's health habits						
<i>r</i>	0.213	-0.006	0.047	0.001	0.214	0.118
<i>p</i>	0.028	n.s.	n.s.	n.s.	0.030	n.s.
<i>n</i>	106	103	103	104	103	100

n.s. not significant

No answer was excluded from analysis

servings of milk, yogurt or cheese each day.

#### QOL and relationship between health behaviors

The findings from this study indicated that QOL including physical health and psychological health were better in male students than female students. Moreover, there was weak positive correlation between health habits and overall QOL and environments QOL. A previous study showed that young students' health-related QOL is affected by socio-demographic and behavioral characteristics.<sup>14)</sup> In addition, health behaviors also influence individuals' QOL by delaying the onset of chronic disease and extending active lifespans.<sup>15)</sup> But, sample size was small in this study, and to achieve these relations, more survey and review will be needed.

#### Recommendations for health promotion

Health behaviors and lifestyle practices varied among students. According to the findings of this study, socio-demographic variables such as gender and family condition affected the students' lifestyles, health behaviors, and QOL. Thus, it is essential to draw the attention of university leaders and decision makers to students' lifestyles, health behaviors, and QOL based on gender and family condition. For male students, creating awareness on the dangers associated with smoking and drinking is vital. Providing additional courses and seminars or campaigns regarding smoking cessation, alcohol dependence, moderate drinking, and alcohol withdrawal are important to improve their QOL and health, as is the creation of appropriate, health-enhancing alcohol, and smoking policies within the university. Furthermore, it is important to provide physical education including regular exercise and active sports for female students. Poor physical activity can cause students to become overweight or underweight. This also increases the risk for NCDs.

For students living alone, it is important to create awareness about the importance of taking breakfast and providing ideas about simple and efficient breakfast. Providing simple breakfast such as fruits and bread to students in university will be intervention.

The above recommendations should be followed in order to improve the health of university students and ensure a health-promoting lifestyle among all university students.

#### Limitations of this study

The findings of this study cannot be generalized due to the bias inherent in the sampling technique used: the small number of male students in the sample, the small sample sizes of the groups of first-to third-year students. Future studies need to be conducted using a stratified sampling technique with an adequate sample size to generalize the results. Another limitation is the reliance on self-reported data. Future research using both qualitative and quantitative methods would help overcome this limitation.

#### Conclusions

Overall, this study concludes that socio-demographic variables such as gender and family condition affected the lifestyles, health behaviors, and QOL of students and that health behaviors were positively correlated with QOL. The study showed that effective health education that considered differences of gender and family condition is especially relevant to the promotion of their health because the QOL at this phase of development creates a foundation for health and QOL in late adulthood.

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