A Study on the Difference in Eating Habits of Male University Students by Their Healthy Lifestyle: Focusing on the Male University Students of Military Major

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Abstract

Establishing healthy eating habits among university students is crucial, as the period of university life marks the transition from parental control for many students, allowing them to engage in independent eating habits and establish dietary and lifestyle patterns that will persist into adulthood and old age. This study aims to investigate the healthy lifestyles and eating habits of male university students and to understand the impact of healthy lifestyles on eating habits. It intends to identify the patterns of healthy lifestyles and eating habits among the students and to verify the differences in eating habits based on their healthy lifestyles. Based on this, the research questions were formulated, and an investigation was conducted. The results are as follows. It was observed that there were significant differences in eating habits based on the healthy lifestyles of male university students. Specifically, significant differences were observed in terms of daily meal frequency, overeating frequency, processed food consumption frequency, usual dietary issues, eating habits, preference for seasoning, preferred types of food, and water intake among male university students based on their sleep habits, alcohol consumption, alcohol consumption frequency, portion size, and physical exercise. From the results of this study, it can be inferred that there is a correlation between healthy lifestyles and eating habits of male university students. Furthermore, it was found that sleep habits are associated with several eating behaviors. Therefore, it can be deduced that improving exercise and sleep quality would likely be effective in enhancing eating behaviors.

Keyword: *male university students, healthy eating habits, healthy lifestyle, sleep habits*

1. INTRODUCTION

1.1. Need for Research

The transition from adolescence to adulthood, marked by the university years, involves a significant shift as individuals move away from parental control and embrace a more independent dietary lifestyle. The period of being a university student holds paramount importance in establishing dietary and lifestyle patterns that extend into adulthood and old age. Consequently, there is a need for a vested interest in fostering proper dietary habits among university students (Choi, Mi-Kyung et al., 2001). Unlike the structured routines of middle and high school years, university life, characterized by sudden freedom and ample time, can lead to the erosion of dietary harmony through irregular eating habits, excessive alcohol consumption, inadequate snacks, and meager breakfasts. Maintaining a balanced nutritional intake is a fundamental prerequisite for sustaining both physical and mental well-being and preventing diseases. To do this, it is important to acquire accurate nutritional knowledge and cultivate a proper attitude toward dietary habits.
However, during the university years, there tends to be limited interest in personal health, and the significance of nutritional intake is often severely underestimated. Consequently, the absence of proper dietary lifestyles often results in frequent instances of malnutrition due to irregular eating patterns, with a high proportion of snacking. Moreover, a multitude of health issues arises from excessive alcohol consumption, high smoking rates, excessive focus on thin body image, and other factors (Lee, Mi-Sook & Woo Mi-Kyung, 2003).

The misalignment of erroneous dietary attitudes in adulthood reflects previously misconstrued dietary attitudes. Such patterns not only influence health in old age but also impact nutritional habits. In other words, the eating habits during this period not only reflect past behaviors but also offer an opportunity for correction before solidifying into adult dietary patterns. Moreover, these habits serve as a gauge for the actual living environment,

encompassing nutritional practices and the overall lifestyle of the respective societal members. If erroneous eating and lifestyle habits are established during this period, it has been reported that they can lead to various conditions in middle and old age, such as osteoporosis, cancer, and cardiovascular diseases. The period between 16 and 20 years of age is the time when lifelong dietary lifestyles are formed in humans. However, the dietary patterns of university students are currently mirroring the dietary lifestyles of the older generation.

In addition, the lifestyles and eating habits of university students best reveal the attitudes towards dietary practices that tend to become habits in adulthood. Therefore, accurately recognizing the significance of food intake during this period and improving desirable lifestyles and eating habits can serve as a cornerstone for leading a healthy life throughout one's lifetime.
According to previous studies targeting university students (Kang Young-Eun & Lee Shim-yeol, 2016; Kim Mi-Hyun & Yeon Ji-Young, 2021; Lee Seung-Lim & Lee Sun-Hee 2022), common issues in eating habits of university students include irregular mealtimes, a prevalence of preference-based and calorie-dense snacks, imbalances in the quality of the three main meals, and disparities in nutrient intake. Especially in comparison to university students who live with others, those who live alone exhibited even lower calorie intake levels. Poor eating habits, including inadequate food consumption and a lack of nutritious side dishes, led to lower-quality meals. These discrepancies were influenced by factors such as long-distance commuting and individual habits. In addition, despite being adults and responsible for cultivating favorable dietary habits, their attitude toward the importance of nutritional intake through meals is not positive, and many are dissatisfied with their current dietary practices, indicating a failure to establish proper dietary habits.

Studies examining university students' dietary habits have generally indicated several aspects, including the loss of dietary balance due to excessive smoking and alcohol consumption, inappropriate dietary habits stemming from excessive weight control driven by a preference for thin body image, food choices driven by taste rather than nutritional value, and shifts in meal patterns and quantities prioritized based on physical and psychological stress as well as changes in the surrounding environment (Im Yang-soon, 2006). The lack of nutritional knowledge of these university students shows that the proportion of obesity or underweight, diseases in the digestive system, anemia, nutritional imbalance, etc. has reached a significant number. Furthermore, the nature of residence also influences dietary habits. In the case of living away from home in rented accommodations, dormitories, or boarding houses, the majority of outcomes regarding nutrient intake and meal content were unfavorable (Jin Yang-Ho et al., 2014; Hwang, Jeong-Hyun & Lee Hong-Mi, 2007). Especially considering that the dietary attitudes of university students reflect those of adults, ensuring proper eating habits during this period becomes a significant task. Therefore, investigating the dietary behavior patterns among university students and providing appropriate nutritional education are urgently needed.
The establishment of healthy lifestyle patterns and appropriate food intake habits among university students serves as the foundation for maintaining good physical function and health during adulthood. Therefore, the right dietary habits of university students can be said to be very important to maintain health functions as future healthy workers and to lead a vigorous life in academic, cultural, and social aspects. As age increases, dietary habits generally become more irregular, and with advancing age, it becomes less easy to change these habits, underscoring the importance of recognizing the necessity for balanced dietary habits at a young age and working towards their improvement. As university students' lives become irregular and they spend more time outside, they are in a position where they have to take responsibility for their own lifestyles. Therefore, university students should recognize the significance of nutritional intake through meals and adopt appropriate values based on proper dietary lifestyles.

Recently, South Korea has witnessed an increase in obesity and overweight issues across various age groups due to factors such as the Westernization of dietary habits resulting from social and economic progress, as well as a reduction in physical activity levels (Lee Yong-ho et al., 2023). Dietary patterns are gradually shifting from plant-based to animal-based food, and there has been a rise in the consumption of instant food, snacks, and sugary beverages. Consequently, this has led to excessive intake of sugar and fats (Jeon Bo-Kyung et al., 2022). In addition, industrial development has led to advancements in transportation and mechanization, resulting in a significant reduction in physical activity levels. The obesity prevalence rate is on an increasing trend over the years, leading to an unhealthy obsession with body weight in some cases. Consequently, this has given rise to unhealthy dietary habits and distorted body image. The pursuit of slimness and external beauty, especially in

the context of becoming more feminine or masculine, has become a prevalent symbolic behavior. The obsession with this pursuit and matters such as dieting have become topics of discussion among young men and women in advanced countries.

Beliefs and attitudes of dissatisfaction with one's own physique are identified as a central trigger of a binary and rigid approach towards food and dieting. In a study conducted among university students in the Seoul area, it was found that male students who were within the normal weight range had a misconception of themselves as underweight (Kim Bok-Ran, Han Yong-Bong, Jang Eun-Jae, 1997). Additionally, according to a study conducted among university students nationwide, results indicated that male students perceived themselves as being leaner than the actual proportion of underweight individuals among them (Jin Jung-Hee & Jang Kyung-ja, 2005). Furthermore, in a study conducted among university students in the Chungnam region, it was observed that male students exhibited a tendency to perceive themselves as having a normal weight even if they considered themselves obese. Moreover, even those with a normal physique tended to perceive themselves as having a smaller build (Park Young-Sook, Lee Yeon-Hwa, Choi Kyung-Sook, 1995). Based on these findings, it can be observed that male university students lack accurate perceptions of their body shapes and tend to underestimate their own physique. From the aforementioned results, it becomes evident that university students have distorted perceptions of their body shapes, which could potentially lead to health issues due to inappropriate weight control practices and undesirable eating habits. Therefore, there is a need for nutrition education focused on proper eating behaviors.

In this context, the government emphasizes that a balanced diet is essential for maintaining a healthy lifestyle. To achieve this, dietary guidelines have been established, advocating for diverse food consumption. Particularly, ideal body image and practices for body management, including dietary restriction and problematic eating behaviors, have a significant impact on individuals' mental and physical well-being, regardless of gender, generation, or occupation (Lee Min-kyu, 2013). The term "eating behaviors," which is also as "dietary behaviors," refers to the concept used to describe the actions humans have developed to sustain their survival, essentially meaning the act of "eating food" (McGill et al., 2015).

Van Strien et al. (1986) developed a dietary behavior questionnaire and categorized eating behaviors into three main types: "External Eating," "Emotional Eating," and "Restrained Eating." Firstly, "External Eating" refers to eating in response to external cues, such as seeing or smelling food. According to Nisbett (1972), it is more likely to occur when external stimuli are more potent than efforts at restraint. Therefore, individuals with lower levels of restraint are more prone to eating when exposed to suggestions or appealing food. Secondly, "Emotional Eating" involves eating as a response to emotional factors like anger, sadness, or anxiety. According to Bruch (1961), people often confuse internally generated emotional tensions caused by learned experiences from childhood with hunger. In other words, when emotional states are not clearly expressed, it becomes easier to trigger eating behaviors. Lastly, "Restrained Eating" can be understood as a cognitive effort to consume less than what an individual desires or to suppress the impulse to eat. This can be exemplified using individuals with obesity. Typically, they control their appetite well, but when factors such as medication, anxiety, or emotional triggers like alcohol consumption come into play, they might lose self-control, leading to the eruption of suppressed cravings and overeating.

Previous studies on eating behaviors have mainly focused on both male and female university students or specifically on female university students. Additionally, since many of these studies predominantly examined "eating disorders" or "disordered eating behaviors," there is a lack of research that delves into the distinctions among university students and specifically investigates the healthy lifestyles and patterns of eating behaviors among male university students. Therefore, there is a gap in the literature concerning the understanding of the relationships between these aspects. Particularly, university students majoring in military science, who are destined to become future professionals in the military sector, constitute a group characterized by active physical activities and a habit of maintaining a healthy lifestyle. In preparation for their future careers as military personnel, they have cultivated habits of abstaining from alcohol and smoking, ensuring adequate sleep duration, and consuming over 3000 calories of nutrition per day (Kim Dong-Soo, Jung Yeon-Soo, Kim Geun-Soo, 2011). Thus, this study aims to examine the healthy lifestyles and eating behaviors of male university students majoring in military science. Furthermore, it seeks to empirically demonstrate the impact of healthy lifestyles on eating behaviors.

1.2. Purpose of Research

The purpose of this study is to examine the healthy lifestyles and eating behaviors of male university students

majoring in military science and to investigate the influence of healthy lifestyles on eating behaviors. Through this research, foundational data on eating behaviors and healthy lifestyles among male university students majoring in military science will be established, which can serve as a basis for conducting further studies. Furthermore, ultimately, based on these studies, it is hoped that male university students majoring in military science will develop proper eating habits and healthy lifestyle practices as they transition into adulthood. Through this, they can fulfill their roles as members of this society and contribute to enhancing the quality of their individual lives. The specific objectives of this study are as follows:

First, to examine the healthy lifestyles of male university students majoring in military science.
Second, to investigate the eating behaviors of male university students majoring in military science.
Third, to identify the differences in eating behaviors of male university students majoring in military science based on the characteristics of their healthy lifestyles.

2. RESEARCH METHOD

2.1. Collection of Research Subjects and Data

This study aimed to investigate the healthy lifestyles and eating behavior patterns of male university students majoring in military science and explore the impact of healthy lifestyles on eating behaviors. To achieve this, a survey was conducted targeting male university students majoring in military science at a university in the Daejeon region. The sampling method employed random sampling from non-probability sampling techniques, with the criteria based on the convenience of sample selection. Data collection was conducted from July 20th to September 15th, 2021. The survey was administered through direct visits to the university where the study participants were enrolled, distributing questionnaires. A total of 330 questionnaires were collected, and among these, 298 questionnaires were used for the final analysis after excluding responses with missing data or unreliable answers.
When examining the age of the study participants, it was found that those in their 20s accounted for 263 individuals (88.3%), those in their 30s accounted for 31 individuals (10.4%), and those in their 40s accounted for 4 individuals (1.3%). Looking at the monthly allowance, those with less than 300,000 won accounted for 36.2%, totaling 108 individuals; those with 300,000 to 400,000 won accounted for 23.8%, totaling 71 individuals; those with 400,000 to 500,000 won accounted for 18.1%, totaling 54 individuals; those with 500,000 to 700,000 won accounted for 7.7%, totaling 23 individuals; those with 700,000 to 1,000,000 won accounted for 5.0%, totaling 15 individuals; those with over 1,000,000 won accounted for 8.4%, totaling 25 individuals; and those with over 2,000,000 won accounted for 0.7%, totaling 2 individuals. In terms of residential type, 61 individuals (20.5%) lived in their own homes, 174 individuals (58.4%) in dormitories, 1 individual (0.3%) in boarding houses, 49 individuals (16.4%) lived independently, and 13 individuals (4.4%) fell under the "other" category. When looking at weight (Kg), it was distributed as follows: 41 individuals (13.8%) weighed between 50 and 60 kg, 48 individuals (16.1%) weighed between 60 and 65 kg, 48 individuals (16.1%) weighed between 65 and 70 kg, 56 individuals (18.8%) weighed between 70 and 75 kg, and 105 individuals (35.2%) weighed between 75 and 80 kg.

2.2. Measurement Tools

2.2.1 Healthy Lifestyles

The measurement tool for healthy lifestyles was adapted and enhanced from survey items used in studies by Yeom Se-Jin (2006), Choi Hyun-Jin (2009), and Shin Eun-Young (2012). The content of the items included sleep habits, smoking, alcohol consumption, alcohol consumption frequency, portion size, and exercise.

2.2.2 Eating Behaviors

The measurement tool for eating behaviors was derived and enhanced from the dietary habits survey questionnaire created by Cho Jin-Sook and Kim Ki-Nam (2014). This questionnaire was further modified and improved based on the survey items used in the study by Jung Jin-Hee (2017), in alignment with the objectives of the current study. The items within the questionnaire covered topics such as daily meal frequency, overeating frequency, processed food consumption frequency, dietary issues, eating habits, preference for seasoning, preferred types of food, and water intake.

2.3. Analysis Method

The collected data for this study were analyzed using the statistical software package SPSS 23.0. The analysis was conducted employing the following methods. First, frequency analysis was conducted to examine the general characteristics, healthy lifestyles, and eating behaviors of the survey respondents. Second, cross-tabulation analysis (Chi-squared) was employed to verify differences in eating behaviors based on healthy lifestyles. For precise validation, Fisher's exact test was also conducted.

3. RESULTS

3.1. Healthy Lifestyle Characteristics of Research Participants

The healthy lifestyle characteristics of the participants are as follows: First, when examining sleep habits, 30 individuals (10.1%) reported restful sleep, 136 individuals (45.6%) reported sleeping well, 80 individuals (26.8%) reported sleeping moderately, 44 individuals (14.8%) reported tossing and turning, and 8 individuals (2.7%) reported suffering from insomnia. Looking at smoking habits, 152 individuals were non-smokers, accounting for 51.0% of the sample. 32 individuals had a history of smoking but were currently non-smokers, making up 10.7% of the sample. 114 individuals were current smokers, constituting 38.3% of the sample. Analyzing alcohol consumption, 214 individuals (72.3%) reported drinking alcohol, while 82 individuals (27.7%) reported abstaining from alcohol. Examining alcohol consumption frequency, 56.5% (122 individuals) reported drinking 1-2 times a month, 29.2% (63 individuals) reported drinking 1-2 times a week, 12.0% (26 individuals) reported drinking 3-4 times a week, and 2.3% (5 reported drinking daily. Analyzing alcohol intake, 3.7% (8 individuals) reported consuming 1-2 cups, 23.7% (51 individuals) reported consuming less than half a bottle to one bottle, 36.7% (79 individuals) reported consuming half a bottle to one and a half bottles, 16.3% (35 individuals) reported consuming less than two bottles, and 19.5% (42 individuals) reported consuming two or more bottles. Looking at exercise habits, 211 individuals (70.8%) reported engaging in exercise, while 87 individuals (29.2%) reported not exercising.

3.2. Eating Behavior Characteristics of Research Participants

The eating behavior characteristics of the participants are as follows. First, examining the daily meal frequency, 1 meal was reported by 4 individuals, accounting for 1.3%, 2 meals by 175 individuals (58.7%), 3 meals by 101 individuals (33.9%), 4 meals by 12 individuals (4.0%), and 5 or more meals by 6 individuals (2.0%) Second, when considering the overeating frequency, the results were as follows: overeating once a day was reported by 29 individuals (9.8%), overeating twice a day by 17 individuals (5.7%), overeating once a week by 127 individuals (42.8%), overeating three or more times a week by 48 individuals (16.2%), and overeating once a month by 76 individuals (25.6%). Furthermore, in terms of the usual dietary issues, the results showed that consuming stimulating food was reported by 55 individuals (19.3%), binge eating by 75 individuals (26.3%), under-eating by 22 individuals (7.7%), irregular eating by 67 individuals (23.5%), selective eating by 24 individuals (8.4%), and none of these issues were reported by 42 individuals (14.7%). Regarding eating habits, primarily vegetarian diets were followed by 4 individuals (1.4%), primarily carnivorous diets by 134 individuals (45.6%), specific food preferences by 24 individuals (8.2%), and balanced eating habits were observed by 132 individuals (44.9%). When considering the preference for seasoning, 25 individuals (8.5%) preferred light food, 89 individuals (30.2%) preferred spicy/salty/sweet food, and 181 individuals (61.4%) preferred food with moderate flavor. Regarding the preferred food types, vegetables were preferred by 12 individuals (4.4%), fruit by 20 individuals (7.4%), meat by 197 individuals (72.4%), grains by 30 individuals (11.0%), fish by 8 individuals (2.9%), and processed food by 5 individuals (1.8%). Examining water intake, the following distribution was observed: 00.5L was reported by 14 individuals (4.7%), 0.51L was reported by 120 individuals (40.3%), 11.5L was reported by 107 individuals (35.9%), and 1.52L or more was reported by 57 individuals (19.1%).

3.3. Differences in Eating Behavior According to Healthy Lifestyle Characteristics

3.3.1 Difference in Daily Meal Frequency

When investigating differences in the daily meal frequency among male university students based on their healthy lifestyle characteristics, significant variations were observed in alcohol consumption frequency (X^2=26.115, p<.01) and exercise (X^2=14.572, p<.01).

Table 1: Difference in Daily Meal Frequency

			Daily frequency					Total	X^2 (*p*)
			1time	2 times	3 times	4 times	5 times or more		
Drinking frequency	1-2 times a month	n	1	81	37	3	0	122	26.115** (.004)
		%	0.8	66.4	30.3	2.5	0.0	100.0	
	1-2 times a week	n	1	31	26	4	1	63	
		%	1.6	49.2	41.3	6.3	1.6	100.0	
	3-4 times a week	n	0	12	11	2	1	26	
		%	0.0	46.2	42.3	7.7	3.8	100.0	
	Every day	n	0	3	0	0	2	5	
		%	0.0	60.0	0.0	0.0	40.0	100.0	
Exercise	Exercise	n	0	119	81	7	4	211	14.572** (.003)
		%	0.0	56.4	38.4	3.3	1.9	100.0	
	No exercise	n	4	56	20	5	2	87	
		%	4.6	64.4	23.0	5.7	2.3	100.0	
**$p<.01$									

3.3.2 Difference in Overeating Frequency

Examining differences in the overeating frequency among male university students based on their healthy lifestyle characteristics, significant variations were observed in sleep habits (X^2=26.820, $p<.05$) and alcohol consumption frequency (X^2=41.870, $p<.001$).

Table 2: Difference in overeating frequency

			Overeating frequency					Total	X^2 (*p*)
			1 time a day	2 times a day	1 time a week	3 times or more a week	1 time a month		
Sleep habits	Restful sleep	n	2	3	13	7	5	30	26.820** (.025)
		%	6.7	10.0	43.3	23.3	16.7	100.0	
	Sleeping well	n	11	4	71	14	36	136	
		%	8.1	2.9	52.2	10.3	26.5	100.0	
	Sleeping moderately	n	10	5	28	15	21	79	
		%	12.7	6.3	35.4	19.0	26.6	100.0	
	Tossing and turning	n	5	3	15	9	12	44	
		%	11.4	6.8	34.1	20.5	27.3	100.0	
	Insomnia	n	1	2	0	3	2	8	
		%	12.5	25.0	0.0	37.5	25.0	100.0	
Drinking frequency	1-2 times a month	n	3	3	59	16	41	122	41.870** (.000)
		%	2.5	2.5	48.4	13.1	33.6	100.0	
	1-2 times a week	n	13	4	20	10	16	63	
		%	20.6	6.3	31.7	15.9	25.4	100.0	
	3-4 times a week	n	6	6	8	3	3	26	
		%	23.1	23.1	30.8	11.5	11.5	100.0	
	Every day	n	1	1	2	1	0	5	
		%	20.0	20.0	40.0	20.0	0.0	100.0	
*$p<.05$, ***$p<.001$									

3.3.3 Difference in Processed Food Consumption

Examining differences in the processed food consumption among male university students based on their healthy lifestyle characteristics, significant variations were observed in sleep habits (X^2=332.186, $p<.01$) and exercise (X^2=17.329, $p<.01$).

Table 3: Difference in Processed Food Consumption

			Processed food consumption frequency					Total	X^2 (p)
			1 time a day	2 times a day	1 time a week	3 times or more a week	1 time a month		
Sleep habits	Restful sleep	n	1	6	12	4	7	30	332.186** (.004)
		%	3.3	20.0	40.0	13.3	23.3	100.0	
	Sleeping well	n	5	27	44	44	15	135	
		%	3.7	20.0	32.6	32.6	11.1	100.0	
	Sleeping moderately	n	2	19	37	17	5	80	
		%	2.5	23.8	46.3	21.3	6.3	100.0	
	Tossing and turning	n	7	11	14	10	2	44	
		%	15.9	25.0	31.8	22.7	4.5	100.0	
	Insomnia	n	2	3	0	2	1	8	
		%	25.0	37.5	0.0	25.0	12.5	100.0	
Exercise	Exercise	n	7	39	81	58	26	211	17.329** (.002)
		%	3.3	18.5	38.4	27.5	12.3	100.0	
	No exercise	n	10	27	26	19	4	86	
		%	11.6	31.4	30.2	22.1	4.7	100.0	
**p<.01									

3.3.4 Difference in Dietary Issues

Examining differences in the dietary issues among male university students based on their healthy lifestyle characteristics, significant variations were observed in sleep habits (X^2=29.175, p<.05) and exercise (X^2=12.883, p<.05).

Table 4: Difference in dietary issues

			Dietary habits						Total	X^2 (p)
			Stimulating food	Binge eating	Under-eating	Irregular eating	Selective eating	None		
Sleep habits	Restful sleep	n	3	7	1	13	2	3	29	29.175** (.044)
		%	10.3	24.1	3.4	44.8	6.9	10.3	100.0	
	Sleeping well	n	33	38	12	19	11	19	132	
		%	25.0	28.8	9.1	14.4	8.3	14.4	100.0	
	Sleeping moderately	n	15	22	5	19	7	10	78	
		%	19.2	28.2	6.4	24.4	9.0	12.8	100.0	
	Tossing and turning	n	3	7	3	16	3	8	40	
		%	7.5	17.5	7.5	40.0	7.5	20.0	100.0	
	Insomnia	n	1	1	1	0	1	2	6	
		%	16.7	16.7	16.7	0.0	16.7	33.3	100.0	
Exercise	Exercise	n	42	61	16	41	12	29	201	12.883** (.025)
		%	20.9	30.3	8.0	20.4	6.0	14.4	100.0	
	No exercise	n	13	14	6	26	12	13	84	
		%	15.5	16.7	7.1	31.0	14.3	15.5	100.0	
*p<.05										

3.3.5 Difference in Eating Habits

Examining differences in the eating habits among male university students based on their healthy lifestyle characteristics, significant variations were observed in alcohol consumption (X^2=7.537, p<.05) and exercise (X^2=10.915, p<.01).

Table 5. Difference in eating habits

			Eating habits				Total	X^2 (*p*)
			Mainly vegetarian	Mainly meat-based	Specific food	Balanced diet		
Drinking	Drinking	n	2	98	12	99	211	7.537** (.045)
		%	0.9	46.4	5.7	46.9	100.0	
	Non-drinking	n	2	35	12	32	81	
		%	2.5	43.2	14.8	39.5	100.0	
Exercise	Exercise	n	2	97	10	98	207	10.915** (.009)
		%	1.0	46.9	4.8	47.3	100.0	
	No exercise	n	2	37	14	34	87	
		%	2.3	42.5	16.1	39.1	100.0	
*$p<.05$, **$p<.01$								

3.3.6 Difference in Preference for Seasoning

Examining differences in the preference for seasoning among male university students based on their healthy lifestyle characteristics, significant variations were observed in sleep habits (X^2=14.666, $p<.05$), portion size (X^2=18.118, $p<.05$), and exercise (X^2=9.220, $p<.05$).

Table 6: Difference in preference for seasoning

			Preference for seasoning			Total	X^2 (*p*)
			Light food	Spicy/salty/sweet food	Food with moderate flavors		
Sleep habits	Restful sleep	n	2	4	23	29	14.666** (.045)
		%	6.9	13.8	79.3	100.0	
	Sleeping well	n	14	46	75	135	
		%	10.4	34.1	55.6	100.0	
	Sleeping moderately	n	3	23	54	80	
		%	3.8	28.7	67.5	100.0	
	Tossing and turning	n	4	12	27	43	
		%	9.3	27.9	62.8	100.0	
	Insomnia	n	2	4	2	8	
		%	25.0	50.0	25.0	100.0	
Portion size	1-2 cups	n	3	0	5	8	18.118** (.012)
		%	37.5	0.0	62.5	100.0	
	Half a bottle ~ less than 1 bottle	n	2	20	29	51	
		%	3.9	39.2	56.9	100.0	
	1 bottle ~ 1 and a half bottles	n	6	29	44	79	
		%	7.6	36.7	55.7	100.0	
	Less than 2 bottles	n	3	6	24	33	
		%	9.1	18.2	72.7	100.0	
	More than 2 bottles	n	1	9	31	41	
		%	2.4	22.0	75.6	100.0	
Exercise	Exercise	n	14	55	139	208	9.220** (.010)
		%	6.7	26.4	66.8	100.0	
	No exercise	n	11	34	42	87	
		%	12.6	39.1	48.3	100.0	
*$p<.05$							

3.3.7 Difference in Preferred Food Types

Examining differences in the preferred food types among male university students based on their healthy lifestyle characteristics, significant variations were observed only in exercise (X^2=12.078, $p<.05$).

Table 7: Difference in preferred food type

			Preferred food type						Total	X^2 (*p*)
			Vegetables	Fruit	Meat	Cereals	Fish	Processed food		
Exercise	Exercise	n	5	11	143	21	6	1	187	12.078** (.024)
		%	2.7	5.9	76.5	11.2	3.2	0.5	100.0	
	No exercise	n	7	9	54	9	2	4	85	
		%	8.2	10.6	63.5	10.6	2.4	4.7	100.0	
*p<.05										

3.3.8 Differences in Water Intake

Examining differences in the water intake among male university students based on their healthy lifestyle characteristics, significant variations were observed in alcohol consumption frequency (X^2=18.071, p<.05), portion size (X^2=24.274, p<.01), and exercise (X^2=12.080, p<.01).

Table 8: Difference in water intake

			Water intake				Total	X^2 (*p*)
			0~0.5L	0.5~1L	1~1.5L	More than 1.5~2L		
Drinking frequency	1-2 times a month	n	9	50	43	20	122	18.071** (.018)
		%	7.4	41.0	35.2	16.4	100.0	
	1-2 times a week	n	0	25	25	13	63	
		%	0.0	39.7	39.7	20.6	100.0	
	3-4 times a week	n	1	10	10	5	26	
		%	3.8	38.5	38.5	19.2	100.0	
	Every day	n	1	0	0	4	5	
		%	20.0	0.0	0.0	80.0	100.0	
Portion size	1-2 cups	Number	1	3	3	1	8	24.274** (.008)
		%	12.5	37.5	37.5	12.5	100.0	
	Half a bottle ~ less than 1 bottle	n	5	27	13	6	51	
		%	9.8	52.9	25.5	11.8	100.0	
	1 bottle ~ 1 and a half bottles	n	3	35	29	12	79	
		%	3.8	44.3	36.7	15.2	100.0	
	Less than 2 bottles	n	1	11	17	6	35	
		%	2.9	31.4	48.6	17.1	100.0	
	More than 2 bottles	n	1	9	15	17	42	
		%	2.4	21.4	35.7	40.5	100.0	
Exercise	Exercise	n	8	75	79	49	211	12.080** (.007)
		%	3.8	35.5	37.4	23.2	100.0	
	No exercise	n	6	45	28	8	87	
		%	6.9	51.7	32.2	9.2	100.0	
*p<.05, **p<.01								

The results of this study revealed that there are partial significant differences in eating behaviors among male university students majoring in military science, based on their healthy lifestyle characteristics. Specifically, significant differences were found in the daily meal frequency, overeating frequency, processed food consumption frequency, usual dietary habit issues, preference for seasoning, preferred food types, and water intake among male university students based on their sleep habits, alcohol consumption status, alcohol consumption frequency, portion size, and exercise.

Among male university students, there were differences in overeating frequency, processed food consumption frequency, usual dietary habit issues, and preference for seasoning based on their sleep habits. Specifically, those who could not get sufficient sleep showed relatively higher frequencies of overeating and processed food consumption. When experiencing restful sleep, irregular eating habits were more prevalent; for those who sleep well, there was a higher tendency towards stimulating food and binge eating; among individuals who consider

their sleep quality as average, there was a relatively higher proportion of binge eating and irregular eating; and for those who experienced tossing and turning during sleep, the relative proportion of irregular eating was higher. In the case of insomnia, a preference for stimulating food was the highest, and there was a relatively higher proportion of preferring light food. On the other hand, for those who experienced restful sleep, a preference for moderate flavor was the most prominent.

Based on the alcohol consumption status of male university students, there were differences in dietary habits. In both cases of drinking and not drinking, the majority of students mainly consumed meat. However, among those who consumed alcohol, there was a higher tendency to have a balanced diet, while those who didn't consume alcohol showed a relatively higher inclination towards consuming specific types of food. There were significant differences in the daily meal frequency, overeating frequency, and water intake among male university students based on their alcohol consumption frequency. Among male university students who consumed alcohol frequently, there was a tendency to have more than three meals a day, a higher frequency of overeating, and relatively higher water intake.

Depending on the portion size among male university students, there were significant differences in the preference for seasoning and water intake. When the portion size was two or more bottles, there was a relatively higher preference for food with moderate flavor, while when the portion size was between half a bottle and one and a half bottles, there was a relatively higher preference for food with stimulating seasoning. Furthermore, it was observed that a larger portion size was associated with a relatively higher water intake. These findings align with the results reported by Kim Shin-Ae (2013), indicating that higher alcohol consumption frequency and habitual alcohol intake are associated with imbalanced nutritional intake.

Based on the exercise habits of male university students, there were significant differences in the daily meal frequency, processed food consumption frequency, usual dietary issues, preference for seasoning, preferred food types, and water intake. Male university students who engage in physical exercise often tended to consume three meals a day. They frequently cited overeating as a common issue in their usual dietary habits. Additionally, they showed a preference for a balanced diet and moderate flavor, and had a strong preference for meat, consuming a significant amount of water as well. On the other hand, male university students who did not engage in exercise tended to consume two meals a day relatively more frequently. They showed higher consumption of processed food and identified irregular eating habits as a problem. These students preferred stimulating flavors and showed a higher preference for vegetables and fruits.

5. CONCLUSIONS AND SUGGESTIONS

This study aimed to examine the patterns of healthy lifestyles and eating behaviors among male university students majoring in military science and to verify the differences in eating behaviors based on their healthy lifestyles, specifically sleep, smoking, alcohol consumption, and exercise factors. From July 20th to September 15th, 2021, a survey was conducted using a non-probability sampling method with random sampling extraction at a university located in the Daejeon area. A total of 330 male university students majoring in military science were surveyed through direct visits to the university and administered questionnaires. The collected data was analyzed using the SPSS 23.0 statistical package program. The analysis method involved frequency analysis to examine the general characteristics, health habits, and eating behaviors of the participants. Cross-tabulation analysis (chi-square) was conducted to verify the differences in eating behaviors based on healthy lifestyle factors, and Fisher's exact test was performed for accurate validation.

The results of the study indicate a significant correlation between healthy lifestyles and eating behaviors of male university students majoring in military science. However, there was no significant association found between smoking status and eating behaviors. On the other hand, it was observed that exercise had the most significant impact on the eating behaviors of male university students. Furthermore, it was also found that sleep habits were related to various eating behaviors. Therefore, it can be inferred that improving exercise and sleep quality could be effective in enhancing eating behaviors. It was also observed that certain eating behaviors were associated with alcohol consumption-related lifestyle habits. However, considering the impact of the COVID-19 situation, it should be considered that the alcohol consumption frequency and portion size among male university students have decreased.

The results of this study are significant in understanding the healthy lifestyles and eating habits of male university students majoring in military studies who aspire to pursue a future career in the military. By examining the differences in eating behaviors based on their healthy lifestyles, this study has confirmed the correlation between these factors and highlighted the importance of improving the healthy lifestyles and eating behaviors

of male university students majoring in military studies. Based on the results of this study, the following recommendations are suggested.

First, there is a need for longitudinal research on the patterns of health habits and eating behaviors of male university students majoring in military studies. As social and cultural environments change, perceptions of health and quality of life also evolve accordingly. Therefore, conducting time-series analysis to understand these changes could be beneficial for predicting future perceptions of health. Additionally, determining whether the changes in healthy lifestyles and eating behaviors over time are positive or negative can serve as guidance for developing future improvement strategies.

Second, there is a need to comprehensively examine the factors influencing eating behaviors among male university students majoring in military studies. This study confirmed that these students perceive eating behaviors as a means to prevent or manage diseases. Therefore, beyond healthy lifestyles, investigating multifaceted factors influencing eating behaviors, including biological, environmental, healthcare system, and psychological factors, could provide foundational data for promoting a healthy lifestyle through improved eating behaviors.

Third, it is essential to further elucidate the specific relationship between healthy lifestyles and eating behaviors among male university students majoring in military studies. Through this study, the influence of healthy lifestyles on eating behaviors has been established. However, relying solely on simple difference verification has its limitations in explaining causality. Therefore, it is necessary to review existing literature and examine various prior studies to establish the causal relationship between eating behaviors and healthy lifestyles. By doing so, more specific suggestions for improving lifestyle and eating habits for future military personnel to lead a healthy life can be provided.

This study aimed to investigate the healthy lifestyles and eating habits of young adult males and conducted a survey targeting male university students. Furthermore, the sampling of the study subjects was conducted using a convenience-based sampling method, specifically applying the non-probability sampling technique of random sampling. As a result, the demographic characteristics of the study participants are limited, and there is a skew in the distribution of items, thereby limiting the generalizability of the research findings. Expanding the geographical scope of the study target sampling and further stratifying it based on regional characteristics through the proportional allocation sampling method could enhance the representativeness of the sample for a more detailed analysis of young adult males' behaviors during early adulthood. Furthermore, the verification of differences in the relationship between healthy lifestyles and eating behaviors was conducted in the research design. However, due to the use of nominal scale measurement tools, the analysis results only provide a directionality of the findings. Therefore, there are limitations in establishing a causal relationship. Therefore, in future research, it is suggested that utilizing analytical methods that allow the establishment of causal relationships, by constructing measurement tools on an interval scale, would be meaningful to derive specific implications and recommendations.

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