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EVALUATION OF HEALTHY LIFESTYLE BEHAVIOURS OF STUDENT NURSES AND THE AFFECTING FACTORS

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ABSTRACT

　　Background: Health workers play a special role because they affect the group that they serve. In particular, they are role models based on their lifestyles, and they provide health training, as required as part of their professional responsibilities and social role. Therefore, nurses have important responsibilities in terms of health-promoting activities. *Aim:* The research presented here was conducted to explore the healthy lifestyle behaviours of student nurses and the factors affecting these behaviours. *Methods:* The student nurses studying at the School of Nursing of Ege University during the 2010-2011 academic year (n=256) participated in the research. The data were collected using a demographic questionnaire and the Healthy Lifestyle Behaviours Scale II. These data were analysed using percentages, means, t-tests, and correlation and variance analyses. *Results:* It was found that 51.6% of the student nurses were 21-22 years old, that 89.5% were female, that 78.9% had an income equal to their expenses and that 83.2% had a nuclear family. It was also noted that 89.1% had no health problems, that 89.8% had no chronic diseases, that 79.7% did not smoke and that 66.8% did not use alcohol. Generally, the students' scores for healthy lifestyle behaviours were moderate (131.05±19.26). Based on the study results, it is recommended that male student nurses who smoke and use alcohol should be particularly encouraged to adopt healthier lifestyle behaviours.

Key words: Health, Lifestyle, Behaviour, Nursing, Student.

INTRODUCTION

　　The current health conception promotes a health-centred approach that protects, sustains and improves individuals', families' and society's health. This health conception has been based on a system that protects, sustains and develops the well-being of individuals and that encourages them to make correct decisions about their own health [1-3]. Health responsibility requires individuals to feel actively responsible for their own well-being, to take care of their own health, to obtain information about health and to be able to seek professional help when necessary [4]. Health promotion is the process that directly addresses improvement of the health potential of individuals, families, society and societal groups, including activities to increase well-being and enable individuals to control their own health, and it also includes efforts to maximise individuals' behaviours

[5,6]. The principal objective is to use health-promoting behaviours to allow early diagnosis and to sustain health [6]. To attain this objective, risky behaviours such as smoking, alcohol and substance use, poor nutrition behaviours, limited physical activity, violent behaviours, inappropriate sexual behaviours, unhealthy weight control, poor domestic communication and poor stress management should be avoided [7]. According to Pender, healthy lifestyle behaviours thus relate to spiritual growth, health responsibility, exercise, nutrition, interpersonal relationships and stress management [4].

　　According to estimates by the WHO, the cause of death of 70-80% of people in developed countries and 40-50% of people in developing countries is diseases related to lifestyle [8,9]. In other words, individuals' attitudes and behaviours play a crucial role in the development of these

diseases. Epidemiological studies have demonstrated that half of all fatal diseases are caused by behaviours that are damaging to health [9]. In fact, infectious diseases of the past that caused mass death have been substituted by lifestyle-related chronic diseases such as hypertension, obesity, type II diabetes and coronary heart diseases. Accordingly, provided health services should be designed in such a way as to protect, sustain and develop health [10] and should therefore highlight the importance of the concept that lifestyle plays a key role in the protection and promotion of health [11]. A healthy lifestyle is described as control over all of the behaviours that affect the individual's health, with a choice and arrangement of behaviours suitable for his or her own health status while organising daily activities [5]. Healthy lifestyle behaviours include being responsible for one's own health; attaining self-realisation; and achieving health control, stress management and healthy nutrition and exercise behaviours [12]. Those who change these behaviours and their attitude can maintain and even improve their well-being. Health behaviours include all behaviours that individuals use to remain healthy and to protect themselves against disease [11]. Along these lines, studies conducted in Turkey have demonstrated that sex/gender, socioeconomic status, income, family type, parents' educational status, the longest place of residence, age, health problems, the presence or absence of chronic disease and relationships with friends and family members affect healthy lifestyles [10-13].

Efforts to promote health aim at enabling people to restore and control their own health and to achieve their full health potential. It is possible that people will thus adopt healthy lifestyle awareness, improve their lifestyle and essentially protect their health as if it were their responsibility and eventually avoid risky behaviours [14, 15]. Nurses instruct patients and provide them with information about the promotion of health and healthy behaviours, in addition to providing professional care at health institutions [16]. Based on the curriculum imposed on nursing students, who are taught about caring for and providing training and counselling services to healthy or sick individuals, these students are supposed to have sufficient knowledge about health-promoting behaviours. However, as future health personnel, these students are also expected to internalise these behaviours by integrating them into their own lifestyle behaviours.

The research presented here is from a descriptive study that explored healthy lifestyle behaviours and the factors that affect student nurses studying at the School of Nursing of Ege University. The primary aim was to describe the level of healthy lifestyle behaviours, and a secondary aim of the study was to investigate the relationships between certain sociodemographic variables and healthy lifestyle behaviours. The data were gathered by the researchers after official written approval to conduct this study was granted by the ethics committee at the School of Nursing of Ege University. Informed consent was also obtained from each participant prior to this study, and the student nurses were informed of the purpose of the research.

METHODS
Sample
The sample consisted of first-year student nurses (n=151), second-year student nurses (n=180), third-year student nurses (n=235) and fourth-year student nurses (n=153) studying at the School of Nursing of Ege University during the 2010-2011 academic year (N=719). The sample size required for the research was calculated to be n=251 using the formula n=N [t² p q / d²(N-1)] + t² p q. To select the sample from the population, the stratified random sampling method was utilised [17]. In sum, the student nurses studying at the School of Nursing of Ege University during the 2010-2011 academic year participated in the research, including a total of 256 student nurses (first-year students: 55; second-year students: 63; third-year students: 84; and fourth-year students: 54).

Data collection
The data were collected using a demographic questionnaire and the Healthy Lifestyle Behaviors Scale II (HLBS II). The demographic questionnaire form was developed by the authors to obtain data related to nursing students' sociodemographic characteristics (such as age and gender) and variables affecting healthy lifestyle behaviours (such as alcohol and cigarette use).

The data were gathered during the most convenient time for the students using face-to-face interviews and the questionnaire forms. Oral informed consent was obtained from each student. The students individually completed the questionnaire forms and returned the forms to the researchers.

The HLBS II was designed by Walker et al. In 1987 and was revised in 1996. Its Turkish translation was performed by Bahar, Beşer, Gördes, Ersin, & Kısal (2008). The scale aims at exploring individuals' healthy lifestyle behaviours that improve their health [4,18]. The scale has six subscales and 52 items with a multiple-choice answering system (never = 1, sometimes = 2, often = 3 and always = 4). All of the items on the scale are positive, and the general score indicates the score for healthy lifestyle behaviours. The minimum score is 52, and the highest score is 208. Cronbach's alpha coefficient was estimated as .92 in our study and by Bahar et al. The subscales of the scale included the following: Health Responsibility (r=.81), Physical Activity (r=.84), Nutrition (r=.72), Spiritual Growth (r=.79), Interpersonal Relations (r=.80) and Stress Management (r=.65).

Data analysis
The survey data were coded using SPSS version 13, which was also used in the evaluation of the data. Descriptive statistics, means, frequencies, and percentages

were used to show the distribution of personal characteristics, and t-tests, Pearson's correlation, and ANOVAs were used to investigate differences and relationships between the HLBS II and sociodemographic characteristics. Significance was set at p≤.05. The reliability of the scale was checked for this sample, and a Cronbach's alpha coefficient of .92 was found, indicating a high level of internal consistency.

RESULTS
Sociodemographic and lifestyle variables

It was found that 21.5% of the students were first year, 25.4% were second year, 32.4% were third year and 20.7% were fourth year. Additionally, 51.6% were 21-22 years old, 89.5% were female, 98.0% were single, 78.9% had an income equal to their expenses, 42.6% lived in university dormitories, and 83.2% had a nuclear family.

The health status of the students was analysed, and it was noted that 89.1% had no health problems, 89.8% had no chronic diseases, 79.7% did not smoke, and 66.8% did not use alcohol.

Evaluation of healthy lifestyle behaviours of student nurses

The mean total score and the mean subscale scores on the HLBS II were calculated, and it was observed that the mean total score (131.05±19.26) and the mean subscale scores for health responsibility (21.67±4.62), physical activity (17.10±4.97), nutrition (19.72±4.24), spiritual growth (27.03±4.30), interpersonal relations (26.31±4.21) and stress management (19.19±3.60) were moderate (Table 1). When the Pearson analysis of correlation was performed to evaluate the relationships between the total score on the HLBS II and the subscales, it was determined that there was a positive correlation between the total score on the HLBS II and the mean subscale scores (p<.05).

Evaluation of relationship between certain sociodemographic variables and healthy lifestyle behaviours

When certain sociodemographic characteristics of the participating nursing students and their HLBS II scores were evaluated, there was a statistically significant difference between age groups in terms of the score on the interpersonal relations subscale of the HLBS II (F=3.517, p=.031) (p<.05). When the means were analysed, it was specifically observed that the mean scores were lower on the HLBS II overall and on the health responsibility, interpersonal relations and stress management subscales among the students aged ≥23 years (Table 2).

A statistically significant difference existed between sex/gender in terms of both the total score on the HLBS II (t=2.120, p=.035) and health responsibility (t=3.805, p=.000) (p<.05). When the means were analysed, it was specifically found that female nursing students had considerably higher mean scores than male

nursing students did in terms of the total score and the subscale scores, except for the physical activity subscale score and the spiritual growth subscale score (Table 2).

A statistically significant difference in nutrition (F=3.010, p=.051), spiritual growth (F=3.579, p=.029) and stress management (F=4.444, p=.013) was observed based on socioeconomic status (p<.05). When the means were analysed, it was noted that the mean scores of the students who had an income equal to their expenses were significantly higher than those of the other students in terms of both the total score and the subscale scores, except for the interpersonal relations and stress management subscale scores (Table 2).

Additionally, a statistically significant difference in the total score on the HLBS II (F=4.435, p=.013), health responsibility (F=5.182, p=.006), nutrition (F=3.649, p=.027) and spiritual growth (F=4.790, p=.009) was observed based on smoking status. It was observed that non-smoking students had a higher mean total score on the HLBS II and higher mean subscale scores compared with the other students (Table 2).

A statistically significant difference was found in the total score on the HLBS II (F=3.157, p=.044), physical activity (F=9.446, p=.000) and spiritual growth (F=3.845, p=.023) based on alcohol use. When the means were analysed, the students who stated that they sometimes used alcohol had a higher total HLBS II score and higher scores on all of the subscales, except for the stress management subscale, compared with the other students (Table 2).

DISCUSSION

The 251 student nurses in this study represented a fairly homogenous sample. Most were single and aged 21-22 years and had an income equal to their expenses, had a nuclear family, had no health problems and did not smoke.

Evaluation of healthy lifestyle behaviours of student nurses

The primary aim of the study was to describe the level of healthy lifestyle behaviours among student nurses studying at the School of Nursing of Ege University.

In a study by Özbaşaran, Çetinkaya, and Güngör (2004), 47.5% of participants were aged 21-22 years, 88.2% were female, 97.1% were single, 83.2% had an income equal to their expenses, 87.1% had a nuclear family, 72.9% did not smoke, and 86.5% did not use alcohol. In a more recent study by Al-Kandari, Vidal, and Thomas (2008), 71.8% of nursing students were women, 86.6% of students were single, and the mean age was 21.7 years [16,19].

In another study, Lee and Kim (2013) found that approximately 84.0% of the student subjects were female and that 16.0% were male [20]. Additionally, 39.0% were freshmen, 32.6% were sophomores, and 28.3% were juniors. Smoking status was estimated as 9.6% current smokers, 4.8% former smokers, and 85.6% never smokers.

Moreover, drinkers accounted for 56.1% of the total, and non-drinkers accounted for 43.9%. These studies are consistent with our findings. In particular, the finding that the future health care professionals in both studies had low levels of smoking and alcohol use is very important and reassuring, indicating that they adopted and maintained healthy lifestyle behaviours.

Among the health strategies recommended to the EU member states by the WHO are the determination of health-related lifestyles and the development of positive health behaviours, which involve informing and directing individuals accordingly [16]. Compared with other studies that have measured the level of healthy lifestyle behaviours, the mean score in the present study (131.05) is similar. For example, in studies by Özbaşaran, Çetinkaya, and Güngör (2004) (mean, 121.92±1.10), Yetkin and Uzun (2000) (122.07±17.02), Ünalan, Şenol, Öztürk, and Erkorkmaz (2007) (121.90±22.93), Tekin, Babacan, Bal, Acartürk, and Yorulmaz (2011); Özyazıcıoğlu, Kılıç, Erdem, Yavuz, and Afacan (2011) (128.97±16.40) and Lee and Loke (2005) (males, 119.85; females, 119.72), a moderate level of health-related behaviours was found among university students [16,15,21,22,23,24].

Similarly, in a study by Wittayapun, Tanasirirug, Butsripoom, and Ekpanyaskul (2010), participants practiced health-promoting behaviours at a moderate level, as was the case in a study by Pasinlioğlu and Gözüm (1998) (117.5±17.1), which was conducted on the healthy lifestyle behaviours of health personnel [25,26]. However, we believe that the mean scores of the participating student nurses in our study were higher than in other studies conducted in Turkey. This finding may have resulted from the education given to the student nurses, which may have made positive contributions to their health-related behaviours and attitudes.

Evaluation of relationship between certain sociodemographic variables and healthy lifestyle behaviours

A secondary aim of the present study was to investigate the relationships between certain sociodemographic variables and healthy lifestyle behaviours.

The relationships between age and healthy lifestyle behaviours and between interpersonal behaviour and age in this study are similar to those observed in other studies. For example, in a study by Azizollah, Zaman, and Khaledet (2013), there were significant relation between nourishment, interpersonal behaviour and age [27].

Interpersonal relationships indicate a person's effort in making and pursuing relationships that afford social support and intimacy. This variable is a powerful predictive factor; in various studies, social support and interpersonal relationships have been important in health promotion and social capital. Other indicators include active listening, effective negotiation, and sympathy [27].

According to Yalçınkaya, Özer, and Karamanoğlu (2007), who studied health personnel, a comparison of age and healthy lifestyle behaviours revealed a significant difference in the nutrition subscale score based on age (p<.05) [7]. A study conducted by Karamanoğlu and Gök (2008) on university students also noted that there was a significant difference in "exercise and nutrition" subscale scores (p<.05) [28]. In contrast, Karadeniz, Uçum, Dedeli, and Karaağaç (2008) and Erci, Aydın, and Tortumluoğlu (2000) found that there was no significant difference in subscale scores for healthy lifestyle behaviours between age groups (p>.05), which did not concur with our findings [12, 29].

When we examined sex and healthy lifestyle behaviours, we found that female students had higher scores on the subscales for healthy lifestyle behaviours than male students did, except on the physical activity and spiritual growth subscales. Our study results were similar to those of other studies that used the HLBS to measure the level of healthy lifestyle behaviours according to sex. For example, according to Kostak, Kurt, Süt, Akarsu, and Ergül (2014), female students had higher scores than male students regarding health responsibility, nutrition and interpersonal support [30]. Karadeniz, Uçum, Dedeli, and Karaağaç (2008) also reported that female students had higher health responsibility scores than male students did [12]. Furthermore, other studies determined that the mean HLBS scores of female students were higher than those of males [31,16,21,15,11].

Moreover, the findings of Yalçınkaya, Özer, and Karamanoğlu (2007) indicated that female personnel had higher mean scores than male personnel did [7]. Our findings support the findings in the literature in this context.

Women appeared to have greater health responsibility and more healthy behaviours than men did; the role of women in Turkish culture may involve protecting one's own health and adopting more protective attitudes towards the environment. Women may also have more healthy behaviours than men do due to women's low tendency to engage in risky behaviour.

Courtenay (1998) investigated the health of male university students and emphasised that male university students were unable to adopt health-promoting behaviours and were inclined towards risky behaviours with regards to health [32]. Additionally, their beliefs about manhood affected their health negatively, and their knowledge about health was limited. Based on these findings, it was concluded that youth, and particularly young boys, need more family support and health counselling.

When income status was analysed in the present study, it was noted that the healthy lifestyle behaviour scores of the students who had an income equal to their expenses were significantly higher than those of the other students for both the total score and all of the subscale

scores, except for the interpersonal relations and stress management subscale scores.

In contrast to our study findings, Yetkin and Uzun (2000) reported that there was no significant correlation between monthly income and healthy lifestyle behaviours (r=.055, p>.05) and that health-promoting behaviours were affected by sociocultural status, rather than economic status [15].

Ilhan, Batmaz, and Akhan (2010) determined that in the case of a good economic situation, self-realisation, exercise, and interpersonal support were significantly more frequent, and the mean total score on the HLBS was significantly higher [33]. Dı'ez and Pérez-Fortis (2010) also determined that economic status affects interpersonal support [34]. Other previous studies have indicated that healthy lifestyle behaviours improved as income levels increased, which supports our findings [12,16,11].

In the present study, the total HLBS II score and the scores on all subscales among the students who stated that they did not smoke were higher than the mean scores of the other students. Our study findings thus support the concept that non-smoking students have better nutrition and health responsibility and greater spiritual growth than students who smoke.

Tekin, Babacan, Bal, Acartürk, and Yorulmaz (2011) reported that the mean stress management scores of non-smokers were higher than those of smokers [22]. Similarly, in the present study, we found that there was a significant difference between non-smokers and smokers; more specifically, non-smoking students had a higher level of awareness about stress sources and were more successful in determining stress-controlling mechanisms.

In a study by Kostak, Kurt, Süt, Akarsu, and Ergül (2014), students' self-actualisation to quit smoking and HLBS health responsibility and nutrition subscale scores were greater than those of average smokers and non-smokers [30]. In other studies, according to the sub-dimensions of non-smokers and non-drinkers, mean HLBS scores were higher [16,35,7]. Students do not fully realise the potential harm of smoking on health (although it is known), the importance of taking proper care of their health and the need for responsibility. This responsibility must be introduced by planned training that aims to develop healthy lifestyle behaviours.

When the alcohol variable was analysed, the students who stated that they sometimes used alcohol had a higher total HLBS II score and higher scores on all of the subscales, except for the stress management subscale, compared with the other students. Other studies determined that those who did not smoke and did not use alcohol had higher scores on the nutrition subscale, which is similar to our findings [16,7].

Limitations

The study sample was small, so the results may not be representative of all nursing students. Additionally, this study is based on participants' self-reported perceptions. The study was also conducted at only one institution, which might be considered an additional limitation of the present study.

Table 1. Mean total score and mean subscale scores on the Healthy Lifestyle Behaviors Scale II

HLBS II	Min(52)	Max(208)	X	Ss
Health Responsibility	9	36	21.67	4.62
Physical Activity	8	32	17.10	4.97
Nutrition	10	35	19.72	4.24
Spiritual Growth	11	36	27.03	4.30
Interpersonal Relations	10	36	26.31	4.21
Stress Management	8	32	19.19	3.60
Total	59	205	131.05	19.26

Table 2. Personal characteristics associated with Healthy Lifestyle Behaviors of nursing students Characteristics Healthy Lifestyle Behaviors Scale II

	Health Responsibility	Physical Activity	Nutrition	Spiritual Growth	Interpersonal Relations	Stress Management	HLBS II Total
Age							
18-20 age (53) 21-22 age (132) 23 and upper age (71)	21,56±3,96 22,00±5,03 21,12±4,24 F=,857 p=,426	16,51±4,65 17,22±5,03 17,35±5,14 F=,500 p=,607	20,09±4,21 19,59±4,34 19,69±4,13 F=,260 p=,771	27,40±3,68 26,86±4,49 27,07±4,39 F=,292 p=,747	27,38±3,31 26,39±4,41 25,38±4,29 F=3,517 p=,031*	19,23±3,06 19,45±3,70 18,69±3,78 F=1,039 p=,355	132,16±15,50 131,53±20,12 129,31±20,26 F=,420 p=,658
Gender							
Male (27) Female (229)	18,56± 5,26 22,03± 4,40 t=3,805 p=.000*	17,07±5,28 17,11±4,94 t=0,39 p=.969	17,63±3,54 19,97±4,26 t=2,747 p=.006	27,33±4,54 27,00±4,28 t=-3,85 p=.700	24,85±4,63 26,48±4,14 t=1,918 p=.56	18,22±4,38 19,31±3,50 t=1,485 p=.139	123,66±17,14 131,92±19,34 t=2,120 p=.035*
Income							
Income less than expenses (39) Income	21,46±4,94 21,78±4,41 20,66±6,41	16,43±5,00 17,28±5,01	19,20±4,55 20,00±4,16	25,35±4,58 27,35±4,14	25,28±4,22 26,43±4,19	17,71±3,72 19,39±3,43	125,46±19,54 132,25±18,96

equal to expenses (202) Income higher than expenses (15)		16,46±4,35	17,40±3,90	27,06±4,89	27,40±4,27	20,33±4,71	129,33±21,18
	F=,457 p=,634	F=,610 p=,544	F=3,010 p=,051*	F=3,579 p=,029*	F=1,759 p=,174	F=4,444 p=,013*	F=2,116 p=,123
Sigarette							
Yes (35) No (204) Sometimes (17)	20,54±4,76 22,09±4,42 18,88±5,50 F=5,182 p=,006*	16,88±5,11 17,25±5,00 15,88±4,32 F=,632 p=,532	18,42±3,56 20,08±4,33 18,11±3,72 F=3,649 p=,027*	25,60±3,97 27,44±4,35 25,05±3,17 F=4,790 p=,009*	25,91±3,28 26,50±4,33 24,88±4,37 F=1,349 p=,261	18,42±3,74 19,39±3,61 18,41±3,14 F=1,500 p=,225	125,80±16,97 132,76±19,45 121,23±17,27 F=4,435 p=,013*
Alcohol							
Yes (28) No (171) Sometimes (57)	20,89±4,80 21,44±4,36 22,73±5,14 F=2,141 p=,120	18,85±4,70 16,18±4,46 19,01±5,80 F=9,446 p=,000*	18,78±3,44 19,78±4,05 20,01±5,09 F=,835 p=,435	25,85±4,24 26,80±4,24 28,29±4,28 F=3,845 p=,023*	25,96±3,52 26,13±4,25 27,03±4,40 F=1,085 p=,339	19,53±3,87 19,02±3,40 19,54±4,07 F=,583 p=,559	129,89±16,96 129,37±18,29 136,64±22,23 F=3,157 p=,044*

CONCLUSION

In conclusion, we determined that the student nurses had a moderate level of healthy lifestyle behaviours and that these behaviours were influenced by age, sex/gender, income status, smoking and alcohol use. Based on these results, it is particularly recommended that male student nurses who smoke and use alcohol be encouraged to adopt healthier lifestyle behaviours. Future studies should consider different populations and samples.

Recommendations and implications

It is highly important that health care personnel demonstrate healthy lifestyle behaviours and be role models for both healthy and ill individuals receiving health services. This study was conducted on student nurses, who are future health personnel, thus representing a group that influences both healthy and ill individuals to adopt and develop healthy lifestyle behaviours. Therefore, determination of the healthy lifestyle behaviours of nurses is a useful reflection on this field.

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CONFLICT OF INTEREST:
The authors declare that they have no conflict of interest.

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