

The Relationship between Healthy Lifestyle Behaviors and Health Locus of Control among Nursing and Midwifery Students

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Abstract *Aim:* To determine the healthy lifestyle behaviors of students in the nursing and midwifery department and their relationship with health locus of control. *Methods:* This descriptive cross-sectional study was conducted in 870 students. The personal information form developed by the researchers, Healthy Lifestyle Behaviors Scale, and Health Locus of Control Scale were utilized as data collection instruments. Appropriate statistical analyses were conducted. *Results:* Students' mean total score on the Healthy Lifestyle Behaviors Scale was 123.12 ± 16.51 and on the Health Locus of Control was 64.09 ± 11.63 ; scores were positively related ($r = .152$; $p = .029$). Furthermore, the mean score on Healthy Lifestyle Behaviors Scale was higher for the students placing a high emphasis on their health than for other students ($p < .001$). *Conclusions:* We found that students' mean total scores on the Healthy Lifestyle Behaviors Scale were at a medium level and showed a significant positive relationship with health locus of control.

Keywords: health locus of control, healthy lifestyle behaviors, midwifery student, nursing student, adolescent

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1. Introduction

Health has an important place in the lives of all humans. Though it can be defined in various ways [1], the 1974 World Health Organization's (WHO) definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" is widely accepted [2].

Humans need to develop healthy lifestyle behaviors to improve their quality of life and protect their health. If they perceive this as their duty, they will avoid risky activities and practice behavior that protects and improves their health. This study highlights the importance of developing a healthy lifestyle, one of the most important factors in protecting oneself from disease and improving health [3].

The health locus of control is a determining factor in the establishment of a healthy lifestyle; it also has an influence on the health effects of behavior and stressful life incidents [4]. Wallston and Wallston (1981) showed that the health locus of control influences physical and mental health in humans as much as other health-related factors such as nutrition and exercise. Moreover, recent studies have shown that health locus of control is clearly related to illness, and illness-related mortality rates [4,5]. In this context, to determine the health locus of control is important.

During their time at the university, individuals experience significant changes. Apart from providing

professional education, university education can lead to changes in personality, individual lifestyle and health behaviors. These changes are especially notable in terms of attitudes and behaviors [6].

A healthy society starts with healthy youth. Thus, it is crucial to investigate, plan, and implement measures to encourage young people in particular to acquire and maintain healthy habits. Young students in the nursing and midwifery department should adopt a healthy lifestyle to set an example for society in this area, as practitioners of the area of medicine they are studying can have quite an influence on patients [3,7].

Even though there are previous studies on the factors that influence the adoption of a healthy lifestyle [7-9], none appear to have focused on the relationship between healthy lifestyle behaviors and health locus of control.

2. Methods

2.1. Study Type

We conducted a cross-sectional study to determine the relationship between healthy lifestyle behaviors and health locus of control among nursing and midwifery students.

2.2. Population Sample

The study population, sampled during the 2013–2014 academic year, consisted of a majority of the 1000 first- and fourth-year students in the Department of Nursing and Midwifery in the Faculty of Health Sciences at X

University. No sample selection was conducted; a total of 870 students (87%) studying during the specified date range agreed to participate and were included in the study.

2.3. Data Collection Instruments

Personal information form: A form consisting of 13 questions on demographic data (age, gender, year of study, department, family income, academic achievement, degree of interest in enrolling in the department, satisfaction with the department) and five items related to health behaviors (degree of emphasis on health, smoking and alcohol consumption, and chronic disease), in line with the literature, was administered to all students.

Health-Promoting Lifestyle Profile-II (HPLP-II): This scale was developed by Walker, Sechrist, and Pender (1987) for measuring individuals' behaviors for improving/maintaining health in relation to a healthy lifestyle [10]. Esin (1997) confirmed the validity and reliability of the scale for the Turkish population. The scale consists of 52 items scored on a 4-point Likert-type scale (1=*never*, 4=*regularly*). The scale consists of 6 sub-dimensions: self-realization (items 6, 12, 18, 24, 30, 36, 42, 48, and 52), health responsibilities (items 3, 9, 15, 21, 27, 33, 39, 45, and 51), exercise (items 4, 10, 16, 22, 28, 34, 40, and 46), nutrition (items 2, 8, 14, 20, 26, 32, 38, 44, and 50), interpersonal support (items 1, 7, 13, 19, 25, 31, 37, 43, and 49), and stress management (items 5, 11, 17, 23, 29, 35, 41, and 47). Each sub-dimension can be used independently of the others. All statements on the scale are positively scored. The range of possible scores is 52–208; a high score indicates healthy lifestyle behaviors [11].

Health Locus of Control Scale: We used the Health Locus of Control Scale (HLC) developed by Wallston et al. (1978), the Turkish version of which has been validated by Tabak and Akkose (2006). This scale consists of 18 items rated on a 6-point Likert-type scale, ranging from 1 (*completely disagree*) to 6 (*completely agree*). The questions, intended to determine the health behaviors of adolescents and adults, address three factors: internal control (items 1, 6, 8, 12, 13, and 17), external control (items 3, 5, 7, 10, 14, and 18), and belief in fate (items 2, 4, 9, 11, 15, and 16) [12].

2.4. Ethical Consent and Data Collection

Ethical approval was obtained from the Board of Ethics at the X University Faculty of Health Sciences (Date:11/28/2012 Number: 2012/6). Written institutional consent was obtained from the administrative unit of the Faculty in which the study was implemented.

The study was restricted to students in their first or fourth year in the Department of Nursing and Midwifery at the Faculty of Health Sciences at X University. Data were collected in a suitable setting in students' classrooms (prior to lessons, during recesses, or after lessons) at the X University Faculty of Health Sciences.

2.5. Data Analysis

Data analyses (descriptive statistics, t-tests of independent groups, one-way ANOVAs, and Pearson correlation analyses) were conducted using the SPSS statistical packet.

3. Results

Of the students surveyed, 61.5% were in the nursing department, 38.5% were in the midwifery department, 58.5% were in their first year, 43.0% were 18 years old or younger, and 89.6% were female. A majority of the students reported that they had willingly selected the department they studied in (60.3%) and were satisfied with their department (80.3%). A total of 61.5% of students stated that they set aside a medium amount of time for themselves; 50.4% stated they emphasised their health at a medium level; and the vast majority stated that they did not smoke (90.4%), drink alcohol (96.1%), or have any chronic disease (93.4%), as seen in Table 1.

Table 1. Distribution of Students by Demographic Characteristics

Demographic Characteristics	n (%)
Department	
Nursing	535 (61.5)
Midwifery	335 (38.5)
Grade	
First-year	509 (58.5)
Fourth-year	361 (41.5)
Age	
18 years and under	374 (43.0)
19-20 years	260 (29.9)
21 years and over	236 (27.1)
Gender	
Female	300(89.6)
Male	35(10.4)
Selected the department	
Willing	202(60.3)
Unwilling	133(39.7)
Satisfied with their department	
Yes	699 (80.3)
No	171 (19.7)
Setting aside time for oneself	
Good	335 (38.5)
Medium	535 (61.5)
The level of importance given to health	
Good	350 (40.3)
Medium	439 (50.4)
Bad	81 (9.3)
Smoking	
Yes	786 (90.4)
No	84 (9.6)
Drink alcohol	
Yes	836 (96.1)
No	34 (3.9)
Chronic disease	
Yes	813(93.4)
No	57 (6.6)

Students' average HPLP score was 123.12±16.51, and their mean total HLC score was 64.09±11.63. The mean sub-dimension scores were as follows: self-realisation, 25.37±4.13; health responsibility, 19.94±4.21; exercise, 15.43±4.14; nutrition, 19.00±3.68; interpersonal support, 24.40±4.20; and stress management, 19.01±3.16.

A comparison of the average HPLP scores according to students' year in the program showed that fourth-year students had significantly higher scores than the first-year students on the health responsibility sub-dimension ($t=2.532$; $p=.012$). In general, as well, the mean HPLP scores

differed significantly between first- and fourth-year students ($p > .05$).

Students with a good family income had high scores in the sub-dimensions of exercise ($t = 3.105$; $p < .01$), nutrition ($t = 2.526$; $p = .012$), and stress management ($t = 2.401$;

$p = .017$). Mean scores for health responsibility, nutrition, interpersonal support, and stress management were all significantly higher among students with a high level of academic achievement (Table 2).

Table 2. HPLP and HLC Sub-Dimension Score Averages by Level of Academic Achievement

	Good (n=87)	Medium (n=248)	Statistical Analysis	
	M±SD	M±SD	t	p
HPLP sub-dimension				
Self-realization	25.61 ± 4.51	25.24 ± 3.99	0.71	0.476
Health responsibility	21.54 ± 4.76	19.38 ± 3.85	4.23	0.000
Exercise	16.08 ± 4.34	15.21 ± 4.05	1.70	0.090
Nutrition	20.10 ± 4.04	18.61 ± 3.48	3.30	0.001
Interpersonal support	25.23 ± 4.75	24.11 ± 3.96	2.15	0.033
Stress management	19.85 ± 3.29	18.72 ± 3.07	2.91	0.004
HLC sub-dimension				
Internal control	24.80 ± 5.91	25.08 ± 5.70	-0.38	0.705
External control	21.84 ± 5.67	20.78 ± 5.22	1.59	0.113
Belief in fate	18.90 ± 5.44	17.73 ± 4.90	1.77	0.079

Mean scores for health responsibility ($t = 2.407$; $p = .017$) and stress management ($t = 2.389$; $p = .017$) sub-dimensions were significantly higher among students who did not smoke. However, alcohol consumption did not significantly influence healthy lifestyle behaviors ($p > .05$).

In a comparison between students' level of emphasis on health and HPLP and HLC sub-dimension score averages, a significant difference was found between health responsibility, nutrition, and stress management sub-

dimension score averages (Table 3). Multiple comparisons using Tukey's HSD method revealed that the mean scores for health responsibility, nutrition, and stress management of students with a higher level of emphasis on health were significantly greater than those of other groups. Further, the exercise sub-dimension score average of these students was significantly higher than that of students who reported a lower level of emphasis on health ($p < .05$).

Table 3. HPLP and HLC Sub-Dimension Score Averages by Level of Emphasis on Health

	Level of emphasis on health			Statistical Analysis	
	Good (n=135) M±SD	Medium (n=169) M±SD	Bad (n=31) M±SD	F	p
HPLP sub-dimension					
Self-realization	25.84±4.16	24.94±4.13	25.32±3.89	1.78	0.171
Health responsibility	21.10±4.20	19.24±4.21	18.71±2.94	9.18	0.000*
Exercise	16.12±3.99	15.12±4.26	14.16±3.65	3.87	0.022*
Nutrition	19.71±3.70	18.68±3.69	17.61±2.97	5.49	0.005*
Interpersonal support	24.94±4.25	23.89±4.04	24.87±4.66	2.59	0.076
Stress management	19.75±2.92	18.62± 3.32	17.97±2.66	6.91	0.001*
HLC sub-dimension					
Internal control	25.02±6.19	24.87±5.59	25.68±4.54	0.26	0.772
External control	21.21±5.37	21.20±5.37	19.65±5.15	1.19	0.306
Belief in fate	17.44±5.30	18.38±4.79	18.65±5.07	1.55	0.214

* Tukey HSD was performed for further analysis.

We found that the stress management sub-dimensions score average of students without chronic diseases was significantly higher than that of those with chronic diseases ($t = 2.121$; $p = .035$). Some student characteristics (gender, willingly in enrolling in the department, department satisfaction, setting aside time for oneself) did not affect mean HPLP sub-dimension scores ($p > .05$).

A Pearson correlation analysis between HPLP sub-dimension score averages and HPLP sub-dimension score averages revealed the following:

- a moderate positive correlation between self-realization and internal control ($r = .439$; $p < .01$), and a weak positive correlation with external control ($r = .202$; $p < .01$);
- a weak positive correlation between health responsibility and external control ($r = .231$; $p < .01$);

- a weak negative correlation between exercise and internal control ($r = -.115$; $p = .035$);
- a moderate positive correlation between interpersonal support and internal control ($r = .344$; $p < .01$), and a weak positive correlation between interpersonal support and external control sub-dimension ($r = .195$; $p < .01$); and
- a weak positive correlation between stress management and internal control ($r = .160$; $p < .01$) and between stress management and external control ($r = .168$; $p < .01$).

4. Discussion

The mean HPLP score of the participants was 123.12 ± 16.51 ; the highest score obtained was 192. A

mean HPLP score of 121.75 ± 18.86 was found by Cihangiroglu and Deveci (2011), who assessed the healthy lifestyle behaviors of students at the Health School of Higher Education [13]. Similar results were found in other studies utilising the same scale in Turkey [3,6,7,9,14-21]. Hong et al. (2007) found a mean total HPLP score of 128.87 ± 14.29 . Thus, these studies have shown that healthy lifestyle behaviors of university students are generally moderate [8].

On the HPLP, the students in this study scored highest on self-realisation, followed by interpersonal support, health responsibility, stress management, nutrition, and exercise. In previous studies, self-realisation also had the highest mean score and exercises the lowest [13,19,21,22]. In Hong et al. (2007), students also scored the lowest on the exercise sub-dimension. Accordingly, it can be said that exercise is the sub-dimension least emphasised among students [8].

In the present study, the health responsibility sub-dimension score averages of students in their fourth year were higher. This finding is supported by the literature [6,7,21-23]. Kocaakman et al. (2010) found that the mean self-realisation, health responsibility, nutrition, and interpersonal relations scores of students in their fourth year were higher than those of first-year students [19]. Celik et al. (2009) reported a significant difference only in the exercise sub-dimension score averages among the groups of students they studied [9]. This difference may be due to students' increasing awareness of healthy lifestyles through both lessons and practice as they mature.

Nonetheless, when the HPLP sub-dimension score averages of students were compared according to age group, no significant difference was found between groups ($p > .05$). This is not in line with most previous findings. Tambag (2011) reported that the mean health responsibility sub-dimension score of the youngest age group was highest in their sample [21]. Likewise, Cihangiroglu and Deveci (2011) showed that as age increased, health responsibility and interpersonal support scores also increased [13]. Al-Kandari and Vidal (2007) found a significant positive correlation between stress management scores and age in their student sample [24]. However, Ozyazicioglu et al. (2011) found no significant relationship between mean total HPLP scores, subscale scores, and age among nursing students [20]. In the present study, students with higher academic achievement also appeared to be better at health responsibility, nutrition, interpersonal support, and stress management.

We found that the mean health responsibility and stress management averages scores of non-smoking students were significantly higher than those of smokers. Karadeniz et al. (2008) found that smoking status did not affect healthy lifestyle behavior [16], but Cihangiroglu and Deveci (2011) reported that students who smoked had a lower mean HPLP nutrition score than students who did not [13]. Ayaz et al. (2005) showed that the nutrition sub-dimension scores of students who had never smoked or those who had quit were higher than those of students who smoked [6]. There are similar results in other studies [21,25]. Von Ah et al (2004) also reported low social support levels among students who smoked (26). In general, smoking appears to have an adverse effect on healthy lifestyle behaviors.

In contrast, the present study found that students' drinking habits did not have an effect on healthy lifestyle behavior; similar conclusions have reported in previous literature [6,13,16,21]. Nevertheless, Von Ah et al. (2004) found that alcohol consumption had a strong positive impact on health behavior [26]. Thus, as with smoking, it appears that an increase in alcohol consumption can have a negative influence on a healthy lifestyle.

We revealed that students with higher levels of emphasis on health had higher mean scores on health responsibility, nutrition, and stress management than other groups. They also had higher mean scores on the exercise sub-dimension than students with lower levels of emphasis on health. This suggests that placing an emphasis on health is important factor in the extent to which a person will practice healthy lifestyle behaviors.

We found that the mean stress management score of students free of chronic disease was significantly higher than those with chronic disease. Tambag (2011) found no significant difference in HPLP scores according to chronic disease status; however, the mean interpersonal support score of students with any chronic physical or mental disease was notably high in that study [21]. This indicates that while chronic disease has a negative impact on stress management, it may positively influence interpersonal support.

Students' demographic characteristics (gender, initial interest in enrolling in the department, department satisfaction, setting aside time for him/herself) had no impact on mean HPLP scores ($p > .05$). However, previous studies have suggested that the health responsibility of female students is higher; for example, Tambag (2011) reported significantly higher nutrition and health responsibility sub-dimension score averages among female students [21].

The moderate positive correlation found between self-realisation and internal control suggests that students who believe that they are responsible for their own health have a higher level of self-realisation. Apart from this, only a weak positive correlation was noted between health responsibility, external control, and belief in fate. This indicates that health responsibility is best developed when the individual assumes responsibility for his or her own health. The correlation between internal control and exercise, interpersonal support, and stress management suggests that students who consider themselves responsible for their health demonstrate better health behavior.

5. Conclusion and Recommendations

Turkish midwifery and nursing students demonstrate healthy lifestyle behavior at a medium level; this is positively correlated with their health locus of control. Exercise, found to play an important role in healthy lifestyle behavior, is neglected by students. Furthermore, some individual characteristics (year of study, academic achievement level, smoking, degree of health emphasis, and presence of chronic disease) influence healthy lifestyle behaviors.

These results showed that students with a high level of internal control demonstrated healthier lifestyle behaviors. It is important that both parents and teachers understand

the importance of the internal locus of control and support students toward this end.

We recommend that students with low academic achievement, determined to be at risk in terms of health, be monitored more closely and that necessary precautions be taken at the earlier stages of their careers. It is known that smoking is widespread among students, and smoking prevents the acquisition of positive health behaviors. Therefore, we recommend that measures be taken to identify young people who smoke so that interventions encouraging them to quit can be implemented.

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