

Analysis of health promoting lifestyle behaviors and associated factors among nurses at a university hospital in Turkey

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ABSTRACT

الأهداف: تحديد تعزيز السلوك الصحي ونمط الحياة الصحية للممرضات اللواتي يعملون في مستشفى كلية الطب لدى الجامعة في تركيا والعوامل المؤثرة على السلوك.

الطريقة: أجريت دراسة مقطعية ووصفية في مستشفى جامعة أنقرة، أنقرة، تركيا خلال الفترة من يناير 2008م حتى يناير 2009م. اختبر 280 ممرضة بشكل عشوائي من أصل 550 ممرضة. كما تم استبعاد 10 ممرضات في إجازة سنوية. تم تقييم الحياة الصحية باستخدام استبيان شخصي ومقياس تعزيز السلوك الصحي. تم تحليل البيانات باستخدام اختبار الإحصائي t ، وتحليل الأنوفا، واختبار كارسكل واليس، واختبار تكي باستخدام البرنامج الإحصائي والقيمة الإحصائية المهمة تبلغ $p < 0.05$.

النتائج: سجل تحقيق الذات أعلى قيمة في المقياس 26.0 ± 5.00 نقطة بينما سجل النشاط الجسمي أقل قيمة 13.9 ± 4.50 نقطة. كان هنالك اختلاف إحصائي مهم بين المستوى الصحي للممرضات وحقل تحقيق الذات ($p = 0.029$). كما كان هنالك اختلاف إحصائي بين المسؤولية الصحية والمستوى المعيشة ($p = 0.049$)، والعلاقات الشخصية ($p = 0.032$)، وإدارة الضغوط ($p = 0.027$)، وبين الدرجة الكلية ومقياس تعزيز السلوك الصحي ($p = 0.043$). أما واختلف النشاط الجسمي لمقياس تعزيز السلوك الصحي بشكل إحصائي بالحالة الاجتماعية ($p = 0.036$) كما حقق الممرضات الغير متزوجين درجات أعلى ($p = 0.001$).

خاتمة: أشارت درجات الرياضة المتدنية الحاجة إلى برنامج علاجي للممرضات في هذه الدراسة. كما أن هنالك قوانين جديدة خاصة بمستوى دخل الممرضات يجب علينا أن ندرسه.

Objectives: To determine the health promotion lifestyle behaviors (HPLB) of nurses working in a university medical faculty hospital in Turkey and to investigate the factors related behaviors.

Methods: This descriptive and cross-sectional study was conducted in Ankara University Medical Faculty

Hospital, Ankara, Turkey, between January 2008 and 23 January 2009. Two hundred and eighty nurses were recruited randomly out of 550 female nurses. However, 10 of them were removed from the research due to the annual leave. The study was conducted among 270 nurses. Health promotion lifestyle behaviors were evaluated using Personal Information Form and Health Promoting Lifestyle Profile (HPLP II). Data were analyzed using independent t-test and analysis of variance (ANOVA), Kruskal Wallis, Tukey test by SPSS Version 16 package with significance level of $p < 0.05$.

Results: The highest sub-scale score with 26.0 ± 5.00 was detected from self-realization and the lowest was detected from physical activity with 13.9 ± 4.50 points. Nurses' self-realization scores differed significantly by perception of health status ($p = 0.029$). Income status differed significantly by health responsibility ($p = 0.049$), interpersonal relations ($p = 0.032$), stress management ($p = 0.027$) subscales, and total score of the HPLP II ($p = 0.043$). The physical activity subscale score of the HPLP II differed significantly by marital status ($p = 0.036$) and situation of having a child but singles scored better than married ($p = 0.001$).

Conclusion: Low exercise score indicated the need for intervention programs for the nurses surveyed. New regulations aim to raise the income level of nurses should be applied.

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Chronic diseases are the leading causes of mortality in the world, representing 63% of all deaths globally. Chronic diseases are influenced by a variety of factors, such as individual lifestyle characteristics (smoking, exercise, stress, and so forth), social conditions (income, eating habits), and genetic and environmental factors.¹ As known, epidemiologic studies have revealed that unhealthy behaviors play a role in half of the cases of fatal disease. For example, the major causes of cardiovascular disease are tobacco use, physical inactivity, an unhealthy diet, and the harmful use of alcohol. Globally, the leading risks for mortality are: high blood pressure (responsible for 13% of deaths), tobacco use (9%), high blood glucose (6%), physical inactivity (6%), and overweight and obesity (5%).² According to WHO's predictions, 70-80% of deaths in developed countries and 40-50% of deaths in less-developed countries are due to diseases associated with lifestyle.³ In relation to physical activity, 60% of the adult population and two thirds of the world's youth do not participate in regular physical activity.⁴ Data were supplied by Turkish Ministry of Health showed that almost 20% of the Turkish people live without physical exercise and 15.99% of them live with insufficient physical activity.⁵ Thirty percent of the world population or 1.25 billion people are addicted to smoking. In Turkey, it is estimated that approximately 17 million people smoke cigarettes, and 100,000-120,000 of them will die due to smoking related diseases. Unless adequate precautions are taken to prevent smoking, 240,000 people will die by the year 2030.⁶ The prevalence of smoking among nurses in Turkey varies from 40.3-68.6%, which is close to or even higher than that among the general population.⁷

Nurses are ideal potential role models in relation to health promotion. Through their professional healthcare role, they can inform and direct patients with respect to healthy behaviors.⁸ However, to do this effectively, they must personally display the desired behaviors to encourage others to adopt similar behaviors. This 'role model' technique is one of the methods that is used to motivate people to change their behaviors through direct training.⁹ In order to display these positive behaviors, nurses must have sufficient knowledge about the subject of health promotion and adopt healthy lifestyle behaviors. However, nurses face numerous challenges in terms of adopting healthy lifestyle

behaviors. Nurses encounter various stress agents that arise from causes such as high level of responsibility, lack of support from colleagues, inappropriate distribution of staff, shift work, complex relationships with patients and their families, advances in medical technology and new regulations in the provision of health care. These factors are increasing nurse perceptions of stress, making coping more difficult, and potentially harming nurse and work environment well-being.¹⁰ The purpose of this study was to determine the health promotion lifestyle behaviors of nurses working in a university medical faculty hospital in Turkey and to investigate the factors related these behaviors. It is assumed that by this study, health promoting lifestyle behaviors are detected in our institution for nurses and it will lead to the intervention and education programs that are needed.

Methods. This descriptive and cross-sectional study was conducted in Ankara University Medical Faculty Hospital, Ankara, Turkey, between January 2008 and January 2009. This study was applied to the nurses who had been working actively at the research time and the nurses working inactively were excluded. Study environment consisted of total 550 nurses who were employed at Ankara University Medical Faculty Hospital. Among these, 280 nurses were included in this study and they layered according to their department, education level and the age group from a general list that contained these characteristics. Ten nurses were removed from the research due to the annual leave. The study was conducted among 270 nurses. Participation rate is 96.4% (n=270). This research has been carried out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. Written approvals were obtained from the Ethics Committee of Ankara University Faculty of Medicine. In addition, verbal consent was obtained from participants.

We used "Personal Information Form" and "Health Promotion Lifestyle Profile II" (HPLP II) for data collection. Personal Information Form was prepared by researchers that contains 32 questions aiming to determine socio-demographic features and healthy lifestyle behaviors. The HPLP II was revised in 1996 by Walker & Hill-Polerecky.¹¹ Health Promotion Lifestyle Profile II, a revision of the HPLP developed by Pender et al¹² was used to measure health-promoting actions. The HPLP II is a 52-item 4-point Likert scale (never, sometimes, often, and routinely) tool based on Pender's health promotion model which contains 6 subscales: self realization, health responsibility (HR), physical

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activity (PA), nutrition (N), interpersonal relations (IR) and stress management (SM).¹¹ Validity and reliability study concerning HPLP II in Turkey was carried out by Bahar et al¹³ in 2008 who used 52 items. The HPLP II was translated from English to Turkish by Bahar et al.¹³ Chronbach Alpha coefficient of the HPLP II was 0.92 and had a high reliability. The reliability coefficient was 0.77 for the sub-scale health responsibility, 0.79 for physical activity, 0.68 for nutrition, 0.79 for self realization, 0.80 for interpersonal relationships, and 0.64 for stress management.¹³

Question numbers of subscale related with self realization are 6, 12, 18, 24, 30, 36, 42, 48, and 52 in HPLP II. This subscale includes 9 items that can be taken at the lowest point which is "9" and the highest is "36". The question numbers of subscale related with health responsibility are 3, 9, 15, 21, 27, 33, 39, 45 and 51 in HPLP II. This subscale includes 9 items that can be taken at the lowest point is "9", the highest is "36". Physical activity subscale includes 4, 10, 16, 22, 28, 34, 40, 46 substances in HPLP II. This subscale consists of 8 items, points that can be taken at the lowest point is "8", the highest is "32".

The numbers of questions in HPLP II related with nutrition subscale are 2, 8, 14, 20, 26, 32, 38, 44, and 50. This subscale includes 9 items and can take the values of 9 and 36 as its min and max values. The numbers of questions of interpersonal relationships subscale in HPLP II are 1, 7, 13, 19, 25, 31, 37, 43 and 49 and has the lowest and highest values of 9 and 36 respectively. Stress management subscale includes 8 questions in HPLP II. The numbers of questions are 5, 11, 17, 23, 29, 35, 41, and 47 and has the min and max of 8 and 32 respectively. The Health-Promoting Lifestyle Profile II is a 52-item questionnaire. The lowest score of the HPLP II is "52" and the highest is "208".

Distribution of socio-demographic characteristics, occupational features, characteristics of lifestyle (Exercise, response to stress, and so forth) of the nurses who participated to study were evaluated and difference between average points of HPLP II and subscales were analyzed using Statistical Package for the Social Sciences Version 16.0 with significance at $p < 0.05$.

The statistical differences between the groups in terms of sociodemographics and HPLP II scores were analyzed using independent t-test and analysis of variance (ANOVA), Kruskal Wallis, Tukey test. Tukey post-hoc tests were performed to determine the direction and significance of differences between the groups. A p -value of 0.05 was considered to be statistically significant. The Kruskal-Wallis test is the non-parametric alternative to one-way analysis of

variance, which we used to test for differences between more than 2 populations for independent study groups.

Results. The mean age of the participants was 34.4 ± 7.00 years (range 21-59) and all of them were female. The results showed that 49.6% of the nurses graduated from vocational school, 58.1% of them were married, and 47,4 % had children, 82.2 % of them had a monthly income 1001-3000 Turkish Lira (TL), 43% of them had good perception of health status. The study participants comprised 270 nurses, of whom 217 (80.4%) were permanent employment status.

Health Promotion Lifestyle Profile II scores for the self-reported health-promoting behaviors among nurses are listed in Table 1. The mean total score on the HPLP II for the participating nurses was 122.6 ± 19.47 . With respect to the subscales, 'self realization' showed the highest mean score (26.0 ± 5.00) whereas 'Physical Activity' showed the lowest mean score (13.9 ± 4.50 points) (Table 1). There were significant differences in HPLP II scores for marital status ($p=0.036$), having a children ($p=0.001$), monthly income ($p=0.043$), perception of health status ($p=0.029$), permanent/contingent employment status ($p=0.029$)

Significant differences in health-promoting lifestyle behaviors were found for marital status ($p=0.036$). Physical activity subscale was not only related to the marital status ($p=0.036$), but was also significantly related to having children ($p=0.001$). Participants who are married and having children had low physical activity subscale score versus singles and having no children. As perception of health increased, self realization subscale score rose accordingly, and this association was statistically significant. Self realization subscale score was higher for good perception of health compared with bad ones, and this difference was statistically significant ($F=3.061$, $p=0.029$) (Table 2). In the present study, stress management subscale score ($p=0.027$), health responsibility subscale score ($p=0.049$), and HPLP II total score ($p=0.043$) were

Table 1 - Health-promoting lifestyle profile scale II (HPLP II) score and subscale points (n=270).

Subscales	Mean	SD
Self realization	25.9	5.00
Health responsibility	19.9	4.25
Physical activity	13.9	4.50
Nutrition	20.5	4.59
Interpersonal relations	25.2	4.26
Stress management	17.6	4.38
HPLP II Total	122.6	19.47

Table 2 - Health-promoting lifestyle profile scale II and subscales' scores according to perception of health status (n=270).

Subscales	Perception of health status	n	Mean	SD	F	P-value
Self realization	Very good	16	28.8	5.27	3.061	0.029*
	Good	116	26.4	5.19		
	Bad	125	25.2	4.79		
	Very bad	13	26.1	3.33		
Health responsibility	Very good	16	20.3	4.01	1.353	0.257
	Good	116	20.5	4.28		
	Bad	125	19.4	4.32		
	Very bad	13	19.6	3.31		
Physical activity	Very good	16	15.6	5.44	1.601	0.190
	Good	116	14.2	4.48		
	Bad	125	13.4	4.50		
	Very bad	13	13.9	2.81		
Nutrition	Very good	16	21.8	4.77	0.955	0.415†
	Good	116	20.3	3.92		
	Bad	125	20.7	5.19		
	Very bad	13	19.1	3.64		
Interpersonal relation	Very good	16	25.5	3.74	0.450	0.717
	Good	116	25.4	4.19		
	Bad	125	24.9	4.45		
	Very bad	13	25.9	3.91		
Stress management	Very good	16	19.9	4.64	2.519	0.058
	Good	116	18.0	4.11		
	Bad	125	17.1	4.41		
	Very bad	13	17.4	5.38		
HPLP II total score	Very good	16	131.3	21.34	2.294	0.078
	Good	116	124.5	18.64		
	Bad	125	120.0	19.97		
	Very bad	13	120.4	16.12		

* $p < 0.05$, †Kruskall Wallis Test, SD - standard deviation, F - frequency, Chi square = 2,171, $p = 0.538$

lower in the participants who had a monthly income of less than 1001 TL compared with participants who had a monthly income of more than 1001 TL (≥ 001 TL). This relationship was statistically significant (Table 3).

There were no statistically significant differences between the permanent/contingent employment status for HPLP II scores ($t = -0.794$, $p = 0.428$). In contrast, statistically significant differences were noted for stress management score ($t = 2.195$, $p = 0.029$). In addition, nurses who were in permanent employment status had higher stress management score than nurses who were in contingent employment status.

Discussion. The mean total score on the HPLP II that was obtained in the present study was lower than the mean score obtained among lecturers in earlier studies^{14,15} and higher those obtained among workers, nursing students in Hong Kong, and women in general.^{16,17} In relation to the subscales, the highest score in the present study was associated with the 'self

realization' subscale. Similar studies that included teachers and nursing students have shown similar findings^{18,19} and were evaluated positively in terms of professional development. In terms of this subscale, participants who were in good perception of health attained high scores on the 'self realization' subscale. The former finding is supported by the results of this study.¹⁸ The lowest score was observed on the subscale of physical activity. This result is consistent with other studies in Turkey.¹⁸⁻²⁰ In a study among female Thai hospital nurses, it was reported that increased participation in exercise depended on the nurses' perception of exercise, self-efficacy, and social support, as well as their motivation to participate in exercise.²¹ In the present study, marital status in the category married exhibited lower physical activity subscale score than single nurses. There are several studies that support this finding and there are some researches in contrast with this results.^{18,22} It is thought that nurses can find less time to exercise because of increased responsibility due

Table 3 - Health-promoting lifestyle profile scale II and subscales' scores according to monthly income (n=270).

Subscales	Monthly income	n	Mean	SD	F	P-value
Self realization	≤1000	18	24.2	5.70	2.550	0.080
	1000-3000	222	25.9	4.93		
	≥3001	30	27.5	4.80		
Health responsibility	≤1000	18	17.7	3.85	3.047	0.049*
	1000-3000	222	20.0	4.20		
	≥3001	30	20.7	4.60		
Physical activity	≤1000	18	12.3	5.09	1.584	0.207
	1000-3000	222	14.0	4.51		
	≥3001	30	14.6	4.02		
Nutrition	≤1000	18	20.9	5.33	0.078	0.925
	1000-3000	222	20.4	4.60		
	≥3001	30	20.3	4.14		
Interpersonal relation	≤1000	18	22.9	5.84	3.492	0.032†
	1000-3000	222	25.2	4.11		
	≥3001	30	26.2	3.97		
Stress management	≤1000	18	15.5	3.43	3.660	0.027*
	1000-3000	222	17.7	4.35		
	≥3001	30	19.0	4.71		
Hplp ii total score	≤1000	18	113.0	22.52	3.183	0.043*
	1000-3000	222	122.7	19.17		
	≥3001	30	127.5	18.27		

* $p < 0,05$, †Kruskal Wallis Test, Chi-Square=5,42; $p = 0.066$, SD- standard deviation, F - frequency.

to marriage and having children. Reasons for lack of exercise can include high workload, lack of free time, poor environmental support, and lack of motivation.

The mean score of the study group on the subscale 'stress management' was lower than that reported for teachers and lecturers.^{14,18} These results suggest that the participating nurses experience intense stress and are inadequately equipped to overcome it. The score for stress management was associated with both work status and income level. Participants who were contingent employment status had a lower income level attained lower scores on the 'stress management' subscale than those who had permanent employment status or higher levels of income. It is assumed that the fear of dismissal for contract nurses and a lower level of income result in additional stress. In addition, a higher income probably provides nurses with the opportunity of finding alternative means to deal with stress.

The limitations of the study include the fact that the sample comprised nurses from only one center. Thus, the results cannot be generalized to other centers or countries. In addition, the underlying causes for their behaviors in relation to health and lifestyle could not be investigated in long period.

In conclusion, the present study identified certain sociodemographic and health-related characteristics among nurses in Turkey that affected particular health-promoting lifestyle behaviors negatively; these included

being married, having children, a lower income level, working under contract, a perception of personal health as being poor.

The nurses in this study showed intermediate levels of health-promoting behaviors. They were expected to display more health-promoting behaviors, some factors (lower income level, having children, working under contract, and so forth) may have been responsible for this discrepancy. Also, their physical activity behavior was insufficient; it is essential that they should undertake more physical activity, facilities, and substructure should be prepared for this.

Consequently, training seminars, and promotion of healthy lifestyle behaviors among nurses should be arranged, and facilities should be provided. New regulations aim to raise the income level of nurses should be applied. The future research should also investigate the effect of intervention and education programs for health promoting behaviors.

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