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Healthy life-style patterns of pharmacists in Turkey

Hilal Ilbars[1*], Secil Ozkan[2]

[1] T.R. The Ministry of Health, The General Directorate of Health Services, Ankara, Turkey.

[2] Gazi University, Faculty of Medicine, Department of Public Health, Ankara, Turkey.

Abstract

Healthy Life-Style Behavior is defined as all the behaviors one engages in to maintain health, including health responsibility, nutrition, exercise, spiritual development, interpersonal relationships, stress management, and protection from disease. Therefore, the aim of this study was to evaluate the life-styles of pharmacists in Turkey.

This is a cross-sectional study, with a universe of 24,925 pharmacists in Turkey. While calculating the sample size, expected prevalence was predicted as 50% (often unknown), standard deviation as 5%, confidence interval as 95%, and design effect as 1.0. For the sample size, a randomization table was used with the pharmacists list, and 10% were selected as spare. In total, the life-styles of 398 pharmacists were evaluated, using the "Healthy Life Style Behavior of The Pharmacists in Turkey Questionnaire" and the "Healthy Life-Style Behavior Scale."

The highest scores on the Healthy Life-Style Behavior Scale were on the spirituality subgroup (27.57 $\pm$ 3.69). This group consists of interpersonal relations (26.29 $\pm$ 3.61), nutrition (24.58 $\pm$ 4.39), physical activity (20.34 $\pm$ 5.23), health responsibility (19.44 $\pm$ 3.86), and stress management (19.43 $\pm$ 3.22).

New interventional methods, awareness policies, and strategies are required for pharmacists.

Keywords

Awareness policies, behavior, Healthy Life-Style, pharmacists.

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***Corresponding author:** Hilal Ilbars, email: hilalilbars@gmail.com

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INTRODUCTION

Health is defined by the World Health Organization (WHO) as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." (WHO, 2019). According to WHO, the causes of 70-80% of deaths in developed countries and 40-50% of deaths in less-developed countries are diseases causes by unhealthy life-styles. Because of this, health services offered to patients should include protection from disease, sustainability, and health improvement (Dickey and Janick, 2001; Yalçınkaya *et al.*, 2007).

A healthy life-style is defined as maintaining self-control over all behaviors that may affect one's health and organizing one's daily activities by selecting the appropriate behavioral pattern for one's health status (Yalçınkaya *et al.*, 2007; Zaybak and Fadıloğlu, 2004). Healthy life-style behavior (HLSB) is defined as all the behaviors one engages in to maintain health, including health responsibility, nutrition, exercise, spiritual development, interpersonal relationships, stress management, and protection from disease (Özkan and Yılmaz, 2008). Healthy life-style is an important factor in protection from disease and improving health. For instance, according to the "National Disease Burden Study" and "Global Health Risks Report" that were conducted in Turkey, the fundamental risk factors in preventing chronic disease are preventable, controllable, and changeable life-styles (WHO, 2009; T.C. Sağlık Bakanlığı, 2006).

Healthcare professionals have important roles and responsibilities in improving and maintaining healthy life-style behaviors. Healthcare professionals can model healthy life-styles and influence the individuals they provide with health education (Ecevit *et al.*, 2003). One particular type of healthcare professional that the public frequently comes into contact with is the pharmacist. According to the data in the "2016 Turkish Pharmacists Association Database," 25,453 pharmacists who own a pharmacy in 2015 and 24,928 pharmacists who own a pharmacy in 2016 (TEB, 2016).

In the "Regulations about Pharmacists and Pharmacies" that were published in Turkey by the Official Gazette in 2014, a

"pharmacist" is defined as a professional authority for conducting pharmacy activities, and a "pharmacy" is defined as an institution that is responsible for: preparing pharmaceuticals from natural and synthetic medicinal substances that are used for protection from diseases; diagnosis and treatment of diseases; presentation of medicine to the patient; analyzing medicine, continuation of pharmacological effect, and surveillance for safety, effectiveness, and cost; providing standardization and quality control for medicine; informing patients about problems regarding the use of medicine and health services; and conducting facilities in accordance with the report of subsequent health problems (Resmi Gazete, 2014). This study aimed to evaluate the healthy life-style patterns of pharmacists, who serve as consultants and are more easily accessible to the public than other healthcare professionals. The findings can serve as a reference for new interventional studies about pharmacists. To our knowledge, this is the first study to investigate the HLSBs of pharmacists in Turkey.

MATERIALS AND METHODS

This study is cross-sectional, with a universe of 24,928 pharmacists in Turkey. While calculating sample size, expected prevalence was predicted as 50% (often unknown), standard deviation as 5%, confidence interval as 95%, and design effect as 1.0. Sample size was calculated as 379, using a randomization table with the pharmacists list; 10% were selected as spare.

This study was conducted in May-August 2017 and all participants were working in their pharmacy stores.

In Turkey, all private pharmacists are members of the union, so the Association has a list of e-mail addresses and telephone numbers, which was utilized for this study. Then, informed consent forms were obtained from all of the participants. The survey was conducted by telephone.

In total, the life-styles of 398 pharmacists were evaluated, using the "Healthy Life-style Behavior of The Pharmacists in Turkey Questionnaire (which is include demographic

informations)" and the "Healthy Life-style Behavior Scale" (HLSBS-II).

The HLSBS-II was developed by Walker, Sechrist, and Pender in 1987 to measure health improvement behaviors in relation to individuals' healthy life-styles. This scale consists of 52 items in six subgroups (Table 1) (Esin, 1999):

- **Health Responsibility**, which determines the level of contribution to and responsibility for one's health.
- **Physical Activity**, which shows the level of physical activity, an essential factor of healthy life.
- **Nutrition**, which determines changes in an individual's selection and regulation of meals and food.
- **Spirituality**, which determines life goals, self-development ability, self-awareness, and self-satisfaction.
- **Interpersonal Relations**, which determines the level of communication and sustainability with one's inner social circle.
- **Stress Management**, which determines the level of recognition of stress sources and stress control mechanisms.

Table 1: Healthy Life-Style Behavior Scale subgroups.

Subgroups	Question Numbers in Scale	Lowest Possible Score	Highest Possible Score
Health responsibility	3, 9, 15, 21, 27, 33, 39, 45, 51	9	36
Physical activity	4, 10, 16, 22, 28, 34, 40, 46	8	32
Nutrition	2, 8, 14, 20, 26, 32, 38, 44, 48	9	36
Spirituality	6, 12, 18, 24, 30, 36, 42, 46, 50,52	9	36
Interpersonal Relations	1, 7, 13, 19, 25, 31, 37, 43, 49	9	36
Stress management	5, 11, 17, 23, 29, 35, 41, 47	8	32
Total		52	208

Each subgroup can be scored independently. The total score on all scales yields the healthy life-style behavior score. While the scale originally consisted of 48 items, currently it consists of 52 items after the addition of 4 items by Walker, Sechrist, and Pender in 1996. The only difference in the new 52-item scale is the number of items.

All items on the HLSBS-II are positive. It uses a 4-point Likert scale, with 1 for

"Never," 2 for "Sometimes," 3 for "Often," and 4 for "Regularly." The lowest possible score is 52 and the highest is 208. The validity and reliability of the HLSBS-II were verified by Esin in 1997, and the Cronbach Alpha internal consistency coefficient was found to be 0.91 (Esin, 1999). The present study's data was evaluated with the SPSS 21.0 statistics package. The variables were analyzed by visual (histogram and probability graphs) and analytical methods (Kolmogorov-Smirnov/Shapiro-wilk), and descriptive statistics were presented as mean (±) standard deviation, frequency distribution, and percentage. Our study protocol was approved by the Gazi University institutional review board, and all participants provided informed consent in the format required by the board.

RESULTS

The average age of the 398 pharmacists who participated in the study was 43.3 ± 8.7 and the median age was 46 (minimum: 26; maximum: 67). The ages of 9% of participants were between 18 and 29, the ages of 22.6% of participants were between 30 and 39, the ages of 48.2% of participants were between 40 and 49, the ages of 19.1% of participants were between 50 and 64, and the ages of 1.1% of participants were over 65 years of age. 58.5% of participants were women and 41.2% were men, with the majority of them being over 40 years of age. The average weight (kg) of participants was 73.40 $\pm$ 10.06 and the median weight was 72 (minimum: 52; maximum: 97). The average body mass index (BMI) (kg/m^2) was 25.91 $\pm$ 2.87 and the median BMI was 25.91 (minimum: 19; maximum: 34).

A total of 86.4% of participants did not use alcohol and 13.6% did. While 29.9% of participants did not smoke cigarettes, 12.3% did, and 57.8% of them had smoked cigarettes but had stopped.

A total of 75.6% of participants did not have any chronic diseases (Table 2). The most common disease was thyroid disease (67.4%) and the most common type of medicine used was anti-hypertensive (26.3%).

Table 2: Number of participants' for the presence of chronic diseases diagnosed by physicians**'.**

	Number	**(%)***
Presence of chronic disease diagnosed by physicians' (n=398)		
No	303	75,6
Yes	95	24,4
Presence of chronic diseases (n=95)**		
Thyroid	64	67,4
Hypertension	16	16,8
Diabet	10	10,5
Chronic lung diseases	7	7,4
Cardiovascular system diseases	4	4,2
Other***	2	2,1

*Column percentage
**More than one answer was given to the question. Percentages are calculated from the given answers.
***Among the other, the most common is menier vertigo.

According to participants' answers on the HLSBS-II (Table 3), the spirituality (27.57 ± 3.69) subgroup had the highest score. The other scores were interpersonal relations (26.29 ± 3.61), nutrition (24.58 ± 4.39), physical activity (20.34 ± 5.23), and health responsibility (19.44 ± 3.86). Stress management (19.43 ± 3.22) was the lowest, ranked at the bottom. The median subgroup score was 139 (minimum: 76; maximum: 196). Spirituality, interpersonal relations, and nutrition subgroups had the highest median scores, and the average of the other four subgroups was similar.

Table 3: Participants' total scores and item averages for subgroups on the Healthy Life-Style Behavior Scale.

HLSB-II Subgroups	**Average Total Subscale Score**	**Median (minimum–maximum)**
Health responsibility (n = 398)	19.44 ± 3.86	20 (10–28)
Physical activity (n = 398)	20.34 ± 5.23	21 (8–32)
Nutrition (n = 398)	24.58 ± 4.39	25 (10–36)
Spirituality (n = 398)	27.57 ± 3.69	27 (18–36)
Interpersonal relations (n = 398)	26.29 ± 3.61	26 (19–36)
Stress management (n = 398)	19.43 ± 3.22	20 (11–28)
Total (n = 398)	137.65 ± 24.00	139 (76–196)

According to the distribution of score averages, several interesting facts emerge:

- Item 4, "I follow a regular exercise program," had the lowest score (2.35 ± 0.81).
- Item 46, "I feel that I have a relationship with a divine power," had the highest score (3.63 ± 0.50).
- There are no items whose average score was below 2 (meaning "never" or "sometimes").
- The items whose average score was above 3 (meaning "often" or "regularly") are presented in Table 4.

Table 4: Propositions on the Healthy Life-Style Behavior Scale with a median participant score above 3.

Item No	Proposition	Median (minimum-maximum)
49	When I need advice and guidance from others, I receive it.	3.04 ± 0.72
24	It is easy for me to show interest, love, and closeness to others.	3.05 ± 0.68
17	I look to the future with hope.	3.05 ± 0.64
18	I spend time with my best friends.	3.06 ± 0.67
47	I resolve conflicts with communication and compromise.	3,08 ± 0,56
7	I appreciate the success of other people.	3.10 ± 0.61
30	I embrace the people I love.	3.10 ± 0.65
23	I feel adequate and at peace with myself.	3.14 ± 0.69
12	I believe that my life has a purpose.	3.16 ± 0.67
13	I maintain meaningful, satisfactory relationships with people.	3.17 ± 0.63
50	I'm open to new experiences and situations.	3.18 ± 0.68
48	I eat breakfast regularly.	3.21 ± 0.84
46	I feel that I have a relationship with a divine power.	3.63 ± 0.50

"When I need advice and guidance from others, I receive it" is the only Health Responsibility subgroup proposition with an average score of 3 or above. None of the Physical Activity subgroup propositions had an average score of above 3. A score of 3 or higher was rarely given to Physical Activity propositions. "I eat breakfast regularly" was the only Nutrition subgroup proposition with an average score above 3, and an answer of 3 or higher was rarely given to these propositions. In the Spirituality subgroup, "I feel that I have a relationship with a divine power" had the highest average score of any proposition.

All other propositions with an average score of 3 or higher belong to the Interpersonal Relations subscale.

DISCUSSION

The present study measured the HLSBs of pharmacists throughout Turkey. Social-demographic properties were evaluated using questions about health protection behaviors and habits on the HLSB-II scale (52 items) questionnaire form. To our knowledge, this is the first study to investigate the HLSBs of pharmacists in Turkey.

According to WHO, 60% of all deaths are linked to chronic disease, and this number is expected to increase to 75% by 2020 (WHO, 2019). In the case of Turkey, seven of the top ten diseases that cause death are chronic diseases (T.C. Sağlık Bakanlığı, 2013).

In this study, 24.4% of participants had a chronic disease. Hypertension frequency was the most common at 16.8%, which is lower than average in Turkey. According to the conclusions of the Turkish Hypertension Prevalence Study-2012 (Türk Hipertansiyon ve Böbrek Hastalıkları Derneği, 2012) and the Türkiye Diyabet Prevelans Çalışması-II (TURDEP-II) study (Satman *et al*., 2013), hypertension frequency was 30% in Turkey. In our research, the smoking frequency was 12.3%, which is quite low. The overall frequency in Turkey was reported as 31% in the "Global Adult Tobacco Investigation Turkey Report-2010" of the Ministry of Health, 33% in "Attitudes and Behavior Investigation on Tobacco, Alcohol and Substance Use in General Population-2011" and 30% in "Health Statistics Annual-2011" (T.C. Sağlık Bakanlığı, 2011; 2012; Türkiye Uyuşturucu ve Uyuşturucu Bağımlılığı Merkezi, 2012; TÜİK, 2012). The low frequency in pharmacists may create a positive effect on societal behavior, because healthcare providers are role models of HLSBs. Healthcare professionals should be more conscious about living a healthy life-style and applying those principles to daily life. When healthcare professionals give advice to the other people about living a healthy life-style, firstly they need to maintain these principles in their own lives so that their advice can impact other people's lives as well as provide motivation and courage for people to apply the advice to their own lives. In Turkey, as well as in many other countries, when a person buys medicine, they often disclose information that they do not even tell their doctors; this is exactly why we give pharmacy students

lessons about communication and consultancy.

In our sample, the frequency of alcohol use was 13.6%. According to the 2011 Turkish Ministry of Health report "The Frequency of Turkey Chronic Diseases and Risk Factors Study," overall alcohol consumption frequency in Turkey is 13% (TÜİK, 2012), which is similar to our result.

The HLSB-II answers of our participants indicated that the reason for the low level of physical activity was a combination of intensive work, difficult living conditions, a lack of fitness habits, and a lack of adequate public fitness facilities.

One of the reason for having a chronic disease may be inadequate implementation of HLSBs. The scores of these healthcare providers, who can serve as role models, on HLSB issues are low, and they should work hard to adjust it. Healthcare providers should act more consciously about HLSB issues and implement these behaviors.

Future studies should take the data obtained in this study into account, and investigate how HLSBs can be integrated into the daily life of pharmacists. This is necessary to ensure that courses about health protection and improvement can be added to the curriculum of pharmaceutical study, then discuss concrete ways to put these things into practice in daily life and identify the issues that pharmacists tend to do a poor job with (that is, healthy life-style, coping with stress, nutrition, exercise, etc.). This training is necessary for pharmacists to develop HLSBs. Moreover, the effect of the spirituality subgroup of the HLSB-II on HLSBs, which was the subgroup with the highest median score, should be investigated with a conclusion-interference study with the purpose of increasing this score. Studies should also be conducted on how to improve socio-economic conditions in order to create healthier life-styles for pharmacists. These methods may include the creation of places where health providers can do physical activities during leisure time at their offices, providing more balanced and healthier nutrition at the office, providing a stress-free workplace environment, education about not smoking and the benefits of physical training programs, providing easier-to-utilize health services, and carrying out more health screening programs.

In conclusion, new interventional methods, awareness policies, and strategies are required for pharmacists.

These can be designed by conducting qualitative and quantitative studies that investigate the factors of pharmacists' adoption of healthy life-style attitudes and behaviors.

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