SUPPLEMENT

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Healthcare Workers at Dialysis Centers and Students Studying in Dialysis Departments: Behavioural Assessment

Abstract

Purpose: The purpose of this study was to determine the behaviours of students studying dialysis and health personnel working at dialysis centers and the influencing factors.

Methods: Students studying dialysis department at Turgut Özal University (n=70) and healthcare personnel working at eight Dialysis Centers located in the center of Ankara (n=83) were recruited. Data was collected from personal information forms and Healthy Life Style Behaviours (HLSB)-II scale. Data were analysed Student's t test, Man Whitney U test, Kruskal Wallis Test and Pearson correlation analysis; $p<0.05$ or $p<0.01$ were considered statistically significant.

Findings: The majority (n=52; 74.3%) of the students participating the research were female, with an average age of 22.09 ± 2.17 years and 55.7% (n=39) were in 2nd year. Similarly, the majority of the healthcare personnel were female (n=73; 88%) with an average of age of 35.37 ± 8.29 years and 30.1% had a Bachelor's degree. Total HLSB II point of the students' was 128.06 ± 22.00 and health responsibility, one of scale sub-scores, was significantly higher in female than male students ($p<0.05$), and there was no statistically significant difference between smoking, age and scale sub-dimensions ($p>0.05$). Total HLSB II point of the healthcare personnel was 115.61 ± 14.26 , and physical activity, one of scale sub-scores, was significantly lower in females compared to males ($p<0.01$).

Conclusion: It was determined that total HLSB II point of the students is medium and significantly higher compared with healthcare personnel. Continuing education for protecting and improving health should be provided for healthcare personnel.

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Health progress is described as having control over people's health and capacity to improve their health. Individuals should strive for healthy lifestyle, which includes a healthy and balanced diet, physical exercise, adequate relaxation and not smoking or using alcohol or drug [1, 2]. Health progress behaviours are important components of lifestyle and health status of individuals. These behaviours involve taking responsibility for personal health, participating in physical activities and gaining the habit of a healthy diet. A healthy individual also maintains a balance of physical, emotional and social wellness.

For many young people, starting university is as stressful as it is exciting. When students enter university, they face an increased academical work load, decreased support nets and the need to rapidly adapt to changes around them. When these changes combine with new responsibilities, university students have more freedom and control over their lifestyles compared to their previous lives. Besides academic loads, they face the responsibility of balancing exercise, diet and psycho-social needs and may experience difficulty finding this balance [3-5]. Universities can serve as a model environment for improving healthy lifestyle behaviours. Being healthy is the fundamental right of every individual and to provide and maintain this is both main goal of healthcare personnel and responsibility of individuals. To gain health improvement behaviours, individuals must have both the control and the desire [1, 2].

In management of behavioural risk factors towards individuals' healthy lifestyle; especially personal lifestyle of healthcare personnel, their belief and attitudes, their way of perceiving and accepting the people they serve are involved [6]. Because healthcare personnel not only influence individuals with their lifestyle within their roles in social life and professional liabilities, but also change attitudes and behaviours of society they serve for with education and consultancy services [7-10]. This has more importance for the individuals on dialysis that healthcare personnel serve. Within this context, it is important to know their beliefs and attitudes about their own lifestyle. About this topic, there have been some research on nurses and nursing students [7-22]; however, the number of publications on students studying dialysis at university is limited [21, 22]. The purpose of this study, focusing on university dialysis students, was to reveal the current situation and to reflect on the obtained results in relation to the students' education process.

Methods

Design

This was a descriptive study to compare the health progress behaviours of the university students studying in dialysis department and healthcare personnel working at dialysis centers and to determine the factors influencing these behaviours.

Sample and setting

Sample of the research is constituted by healthcare personnel (80%, n=83) working at two hospitals related to Ministry of Health, a dialysis clinic of a private university hospital and five private dialysis centers and 1st and 2nd year students (85%, n=70) studying in dialysis department at Turgut Ozal University located in Ankara, Turkey in the 2015-2016 academic year.

Data collection

In data collection, surveys prepared for dialysis students and healthcare personnel are collected in 2015-2016 academic year using Healthy Life Style Behaviors Scale HLSB- II. The survey was developed by analyzing related literature and includes socio-demographic features, health status and health habits of the students (19 questions) and healthcare personnel (15 questions). The HLSB scale, which was developed by Walker and his colleagues [23] in 1987 based on Pender's health progress model, evaluates health progress behaviours related to individual's healthy lifestyle. The HLSB scale was revised by Walker and his colleagues in 1996 and renamed as HLSB II [24]. The validity and reliability study for translation of Healthy Life Style Behaviors Scale II to Turkish was done by Bahar and his colleagues in 2008 [25]. HLSB-II scale consists of all positive 52 items according to quartet Likert [1 (never), 2 (sometimes), 3 (often) and 4 (regularly)] and has six sub-factors (health responsibility, physical activity, nutrition, inner progress, interpersonal relationship and stress management). The lowest score is 52 and the highest is 208. Increase in score shows that the individual practised specified health behaviours at a high level.

Data analysis

Data were analyzed using SPSS version 21.0 for Windows. For statistical analysis, NCSS (Number Cruncher Statistical System) 2007 Statistical Software (Utah, USA) was used. When research data were assessed, descriptive statistics (average, deviation, median, frequency, rate), Student's t test,

TABLE 1. Distribution of the students according to their introductory features

		Min-Max (Median)	Mean±Std. Deviation
Age (years)		19-30 (21.5)	22.09±2.17
Weight (kg)		36-89 (60)	60.73±10.56
Height (cm)		150-187 (166)	167.41±7.94
BMI (kg/m ²)		15.43-27.68 (21.3)	21.54±2.56
		N	%
Gender	Male	18	25.7
	Female	52	74.3
Class	1st year	31	44.3
	2nd year	39	55.7
Mother's job	Housewife	54	77.1
	Worker	1	1.4
	Officer	8	11.4
	Other	7	10
Mother's education	Illiterate	4	5.7
	Literate	5	7.1
	Elementary School	36	51.4
	High School	20	28.6
	University	5	7.1
Father's job	Doesn't work	4	5.7
	Worker	11	15.7
	Officer	20	28.6
	Other	35	50
Father's education	Illiterate	2	2.9
	Literate	1	1.4
	Elementary School	24	34.3
	High School	27	38.6
	University	13	18.6
	Master/Ph.D.	3	4.3
Social Insurance	Yes	65	92.9
	No	5	7.1

TABLE 1. Distribution of the students according to their introductory features (continued)

		N	%
Chronic Illness	Yes	2	2.9
	No	68	97.1
Family Illness	Yes	33	47.1
	No	37	52.9
General Health Status	Perfect	12	17.1
	Very Good	13	18.6
	Good	38	54.3
	Medium	5	7.1
	Weak	2	2.9
Routine check-up	Never visit	20	28.6
	In last 1 year	42	60
	In last 2 years	3	4.3
	In last 4 years	5	7.1
Hepatitis B	Yes	53	75.7
	No	17	24.3
Smoking	Never smoked	51	72.9
	Smoked everyday	13	18.6
	Rarely smoked	3	4.3
	Stopped smoking	3	4.3
Alcohol	Never drank	60	85.7
	Drank everyday	2	2.9
	Drank Sometimes	6	8.6
	Quit	2	2.9
Health Behavior Started to Practise	Yes	16	22.9
	No	54	77.1

Kruskal Wallis test and Mann Whitney U test were used. For the relation between scale scores and age, Pearson correlation analysis was used. Cronbach Alpha value of the research was determined as 0.935 for students, 0.836 for healthcare personnel. Results were assessed at 95% confidence interval and $p < 0.05$, $p < 0.01$ significance level.

Ethical consideration

The Ethical Committee of the Faculty of Medicine of the University of Turgut Ozal approved the study (99950669-2016/05). Before starting the research, the students and healthcare personnel were informed about the purpose and plan of the research and written and oral approvals were taken.

Results

Description and health behaviours of the students

Of the participants, 25.7% ($n=18$) were male, 74.3% ($n=52$) were female. The participants had an average of age of 22.09 ± 2.17 years; average BMI was 24.547 ± 2.56 and 44.3% of the students ($n=31$) were in 1st year and 55.7% ($n=39$) were in 2nd year (Table 1).

With regards to education, 51.4% ($n=36$) of the students' mothers and 34.3% ($n=24$) of the fathers were primary school graduates. With regard to health, 2.9% ($n=2$) of them stated that they had illnesses requiring them to take medicine regularly while 47.1% ($n=33$) stated that their family had to take medicine regularly, 54.3% ($n=38$) claimed to have a good general health status and 28.6% ($n=20$) never had routine check-ups, 18.6% ($n=13$) smoked every day, 2.9% ($n=2$) drank alcohol every day and 77.1% ($n=54$) do not have health behaviour that they started to practise after dialysis department (Table 1).

Total HLSB II points of the students' was determined to be 128.06 ± 22.00 (Table 2). Health responsibility, one of scale sub-scores, was significantly higher in female than male ($p < 0.05$), and there was no statistical significant difference between smoking, age and scale sub-dimensions ($p > 0.05$) (Table 3).

Description and health behaviours of healthcare personnel

The average of the healthcare personnel participating the research was 35.37 ± 8.29 years, 88% of them are female and BMI average was 24.69 ± 4.17 . With regards to education, 73.5% of the participants graduated from the Vocational School of

FIGURE 1. Distribution of healthy lifestyle behaviours scale according to the groups

Health; 10.8% were dialysis technicians and 30.1% had nursing bachelor's degree (Table 4).

With regards to health, 14.5% had illnesses requiring them to take medicine regularly, 75.9% had those illnesses in their family, 57.8% had good general health status and 6% never went for routine check ups, 32.5% smoked every day, 19.3% sometimes drank alcohol, only 27.7% have health behaviours that they started to practise after working at dialysis department (Table 4).

Total HLSB II points of healthcare personnel was 115.61 ± 14.26 , and physical activity, one of scale sub-scores, was significantly low in female compared to male ($p < 0.01$).

Physical activity scores from HLSB II scale scores showed significant differences compared to smoking ($p < 0.05$); in the assessments made to determine from which group the significance stemmed; the ones who smoked every day had significantly higher physical activity scores than the group who never smoked ($p = 0.009$; $p < 0.01$). Those who smoked every day had a significantly higher physical activity score than the group who smoke rarely ($p = 0.029$; $p < 0.05$). Other smoking types did not show significant physical activity score differences ($p > 0.05$).

Nutrition scores from HLSB II scale scores showed significant differences compared with smoking ($p < 0.05$); in the assessments made to determine from which group the significance stemmed; nutrition scores of those who rarely smoked were significantly lower than the nonsmokers

TABLE 2. Distribution of healthy lifestyle behaviors scale sub-dimension scores of students and healthcare personnel

Students	Minimum	Maximum	Mean	Std. Deviation
Health Responsibility	1.44	3.56	2.42	0.47
Physical Activity	1.00	3.75	2.24	0.62
Nutrition	1.11	3.56	2.25	0.42
Inner Progress	1.56	4.00	2.90	0.62
Interpersonal Relationships	1.33	4.00	2.85	0.60
Stress Management	1.13	3.63	2.40	0.52
TOTAL	82	185	128.05	22.00
Medical Personnel				
Health Responsibility	1.22	3.33	2.12	0.40
Physical Activity	1.00	3.00	1.81	0.44
Nutrition	1.33	3.22	2.27	0.35
Inner Progress	1.78	3.89	2.72	0.46
Interpersonal Relationships	1.33	4.56	2.60	0.46
Stress Management	1.25	3.13	2.02	0.39
TOTAL	85	157	115.61	14.26

TABLE 3. Assessment of the scores of the students from healthy lifestyle behaviors scale according to their introductory features

Introductory specifications	Health Responsibility	Physical Activity	Nutrition	Inner Progress	Interpersonal Relationships	Stress Management	TOTAL
Gender							
Female (n=18) Mean±SD (median)	2.22±0.38 (2.2)	2.35±0.76 (2.2)	2.27±0.35 (2.3)	2.78±0.76 (2.8)	2.75±0.59 (2.8)	2.38±0.59 (2.4)	125.55±22.95 (133.5)
Male (n=52) Mean±SD (median)	2.50±0.48 (2.4)	2.20±0.58 (2.1)	2.24±0.44 (2.2)	2.95±0.57 (3)	2.90±0.6 (2.9)	2.41±0.5 (2.4)	128.32±21.83 (128.5)
^a <i>p</i>	0.027*	0.378	0.795	0.338	0.361	0.866	0.535
Age							
<i>R</i>	0.027	0.053	-0.0011	0.105	-0.064	-0.056	-0.011
<i>P</i>	0.825	0.666	0.925	0.389	0.600	0.643	0.929
Smoking Status							
Never smoked/Mean±SD (median)	2.41±0.48 (2.4)	2.22±0.60 (2.1)	2.25±0.42 (2.2)	2.94±0.61 (3.0)	2.85±0.59 (2.9)	2.39±0.53 (2.4)	128.37±22.66 (128.5)
Smoked everyday/Mean±SD (median)	2.47±0.42 (2.5)	2.32±0.74 (2.3)	2.25±0.44 (2.3)	2.77±0.65 (2.8)	2.87±0.62 (2.9)	2.4±0.52 (2.4)	128.31±20.42 (131.5)
^a <i>p</i>	0.652	0.568	0.993	0.326	0.902	0.903	0.993

^aStudent *t* Test*r*:Pearson correlation coefficient**p*<0.05

TABLE 4. Distribution of the healthcare personnel according to their introductory features

		Min-Max	Mean±SD
Age		20-57	35.57±8.29
Weight (kg)		50-108	66.56±12.54
Height (cm)		80-182	163.20±11.83
BMI (kg/height ²)		17.3-35.6	24.69±4.17
		N	%
Gender	Male	10	12.0
	Female	73	88.0
Birth Place	Central Anatolia	61	73.5
	Aegean Region	8	9.6
	East Anatolia	5	6.0
	Mediterranean	4	4.8
	Black Sea	5	6.0
Graduation	Vocational High School of Health	33	39.8
	Dialysis Technician	9	10.8
	Nursing (B.D.)	25	30.1
	Medicine Faculty	4	4.8
	Other	12	14.5
Chronic Illness	Yes	12	14.5
	No	71	85.5
Family Illness	Yes	63	75.9
	No	20	24.1
General Health Status	Perfect	3	3.6
	Very good	13	15.7
	Good	48	57.8
	Medium	16	19.3
	Weak	3	3.6
Routine Check-up	Never had	5	6.0
	Within last 6 months	18	21.7
	Within last 1 year	51	61.4
	Within last 2 years	8	9.6
	Within last 4 years	1	1.2
Hepatitis B Vaccination	Yes	78	94.0
	No	5	6.0
Smoking	Never smoked	37	44.6
	Smoked everyday	27	32.5
	Smoked rarely	9	10.8
	Quit	10	12.0
Alcohol	Never drank	62	74.7
	Sometimes drank	16	19.3
	Quit	5	6.0
Health Behavior Started to Practise	Yes	23	27.7
	No	60	72.3

($p=0.031$; $p<0.01$). The ones who stopped smoking had a significantly higher nutrition score than those who rarely smoked ($p=0.042$; $p<0.05$). Other smoking types did not show significant nutrition score differences (Table 5).

Total HLSB II scale score average of the students was statistically significantly higher compared with the healthcare personnel ($p<0.01$). Health responsibility score ($p<0.01$), physical activity score ($p<0.01$), inner progress score ($p<0.05$), interpersonal relationships score ($p<0.01$), stress management score ($p<0.01$) from scale sub-dimension scores were statistically significantly higher in the students when compared to the healthcare personnel (Table 6).

Discussion

In this study, in which health progress behaviours of Turgut Ozal University Vocational School of Health Services Dialysis Department students and healthcare personnel working for dialysis departments are assessed, data from 70 university students and 83 healthcare personnel are gathered and analysed. Total HLSB II point average of the students was 128.06 ± 22.00 and of the healthcare personnels was 115.61 ± 14.26 ; the total HLSB II point average was statistically significantly higher for students compared with the healthcare personnel ($p<0.01$). For students HLSB scale total score was comparable to that found by Vural and Bakir (127.05 ± 20.35) [22] and Ozyazicioglu and colleagues (128.97 ± 16.40) [17]. For the healthcare personnel, the numbers were comparable to those found by Ozkan and Yilmaz for nurses who work at hospitals (125) [8] and by Pasinlioglu and Gozum (117.5 ± 17.1) [8]. High scores obtained from HLSB scale showed that individuals had more positive health behaviours. According to our research, healthy lifestyle behaviours of the students were at a medium level and higher than the healthcare personnel (Table 6). The fact that healthy lifestyle behaviours of the nurses, who are educated for and serve to fulfill the healthcare requirements of society, were expected to be high but were actually low suggests that they cannot transfer their knowledge and experiences to their own lifestyle.

In our study, students' health responsibility scores from HLSB were significantly higher for female students compared with male students ($p<0.05$), while there was no statistically significant difference between smoking status, age and scale sub-dimensions ($p>0.05$) (Table 3). In Vural and Bakir's [22] study on students studying at Vocational Schools of Health Services, health responsibility, nutrition, stress management sub-group score averages were statistically significantly higher for female students compared with male students. In Ilhan

TABLE 5. Assessment of the scores of the healthcare personnel from healthy lifestyle behaviors scale according to their introductory features

Introductory Features	Health Responsibility	Physical Activity	Nutrition	Inner Progress	Interpersonal Relationships	Stress Management	TOTAL
Gender							
Male (n=10) Mean±SD (median)	2.04±0.55 (1.9)	2.15±0.43 (2.2)	2.18±0.32 (2.2)	2.88±0.58 (2.9)	2.47±0.7 (2.5)	2.06±0.43 (2.1)	117,60±16,11 (117,5)
Female(n=73) Mean±SD(median)	2.13±0.38 (2.1)	1.77±0.42 (1.8)	2.28±0.36 (2.2)	2.7±0.45 (2.7)	2.63±0.43 (2.7)	2.01±0.39 (2)	115,34±14,09 (117,0)
<i>^ap</i>	0.519	0.009**	0.377	0.254	0.497	0.704	0.642
Age							
<i>r</i>	-0.165	-0.255	0.138	-0.266	-0.091	-0.200	0.212
<i>p</i>	0.135	0.020*	0.213	0.015*	0.412	0.070	0.054
Smoking Status							
Never Smoked Mean±SD(median)	2.11±0.38 (2.2)	1.70±0.38 (1.6)	2.32±0.34(2.3)	2.72±0.49 (2.7)	2.56±0.31 (2.6)	2.03±0.37 (2.1)	114.67±12.37 (116)
Smoked everyday Mean±SD(median)	2.10±0.40 (2)	2.01±0.51 (2.1)	2.21±0.32(2.2)	2.73±0.43 (2.8)	2.62±0.52 (2.7)	1.99±0.39 (1.9)	116.52±14.57 (120)
Rarely Smoked Mean±SD(median)	2.00±0.33 (1.9)	1.61±0.37 (1.6)	2.09±0.32(2.1)	2.48±0.39 (2.7)	2.41±0.36 (2.2)	1.89±0.36 (1.8)	106.22±14.67 (99)
Quit Mean±SD(median)	2.32±0.52 (2.3)	1.91±0.31 (2)	2.40±0.44(2.3)	2.91±0.48 (2.8)	2.92±0.74 (2.7)	2.15±0.49 (2.1)	125.10±15.52 (126.5)
<i>^bp</i>	0.377	0.020*	0.049*	0.321	0.161	0.613	0.029*

^aStudent t Test *r*:Pearson correlation coefficient *b*:KW test **p*<0.05***p*<0.01

TABLE 6. Assessment of healthy lifestyle behaviours sub-dimension scores according to students and personnel

	Personnel Mean± SD	Student Mean± SD	P
Health Responsibility	2.12±0.40	2.42±0.47	0.001**
Physical Activity	1.81±0.44	2.24±0.62	0.001**
Nutrition	2.27±0.35	2.25±0.42	0.690
Inner Progress	2.72±0.46	2.90±0.62	0.046*
Interpersonal Relationships	2.61±0.46	2.85±0.60	0.006**
Stress Management	2.02±0.39	2.40±0.52	0.001**
Total Score	115.61±14.26	128.06±22.00	0.001**

Student t test **p*<0.05 ***p*<0.01

and colleagues' (2010) study on university students, health responsibility sub-group score averages for female students were also significantly higher compared with male students [26].

In our study, while there is no statistically significant difference between HLSB II scale sub-scores and smoking status of the students, there was a statistically significant difference between nutrition, physical activity scores from HLSB II scale sub-dimensions and smoking status of healthcare personnel (*p*<0.05) (Table 5). Similarly, Karadeniz and colleagues did not find a significant difference between HLSBS and smoking status for university students [27]. Unalan and colleagues published a study [21] on students, studying health and social departments at vocational schools and did not find a significant difference between smoking status and HLSB scale averages. One of the most important healthy life behaviours that should be gained by people is not having a smoking or alcohol habit or quitting. It must be taken into consideration since studentship to gain this positive health behaviour.

Conclusions

At the result of this research that aimed to determine healthy lifestyle behaviours and the factors influencing them of healthcare personnel and students studying at dialysis departments, it was determined that HLSB II scale total score of the students in the research was at a medium level and significantly higher than those of the corresponding healthcare personnel.

In accordance with these results, we make the following recommendations:

- these topics should be included in school curricula to provide positive health behaviours education for individuals to protect and improve their health during their whole education process starting in pre-school;
- there should be a country-wide dissemination of social organizations aimed at generalization of healthy lifestyle behaviours,
- the efforts of transforming health education in associate/bachelor's degree schools about Health Services into behaviour should be supported; and,
- additional research, involving a larger sample size, on health behaviours and factors influencing these health behaviours should be encouraged and funded.

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