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Diet and Exercise Habits of Nursing Academics During The Pandemic

Hemşire Akademisyenlerin Pandemi Döneminde Beslenme ve Egzersiz Alışkanlıkları

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ABSTRACT

This study aimed to examine the effects of social isolation during COVID-19 pandemic on dietary and exercise habits of nursing academics.

This cross-sectional study included 393 nursing academics from Turkey who consented to participate. During lockdown due to the COVID-19 pandemic, approximately 10% of the participants received professional support for diet and exercise. Habits like consuming immune-boosting foods and passive leisure time increased, while fast food consumption decreased. The academics' descriptive characteristics accounted for 11% of the variance in diet scores and 6% in exercise scores. The academics' experiences with their dietary and exercise habits during the pandemic accounted for 9% of the variance in diet scores and 28% in exercise scores. During the pandemic, 26.7% of academics reported that people around them sought advice from them about exercise. Furthermore, 38.2% of academics stated that people around them asked them for advice on nutrition during the pandemic.

Therefore, it's crucial for nursing academics to exhibit healthy lifestyle behaviors during the pandemic, serving as role models to enhance public awareness of proper diet and exercise.

Key Words: Academic, Healthy Lifestyle Behaviors, Nurse, Diet, Exercise

ÖZ

Bu çalışma, COVID-19 salgını sırasında sosyal izolasyonun hemşirelik akademisyenlerinin beslenme ve egzersiz alışkanlıklarına etkisini incelemeyi amaçlamıştır.

Kesitsel tipteki bu çalışmaya Türkiye'den katılmayı kabul eden 393 hemşirelik akademisyeni dahil edildi. COVID-19 salgını nedeniyle karantina sırasında katılımcıların yaklaşık %10'u diyet ve egzersiz konusunda profesyonel destek aldı. Bağışıklık sistemini güçlendirici gıda tüketme ve pasif boş zaman geçirme gibi alışkanlıklar artarken fast food tüketimi azaldı. Akademisyenlerin tanımlayıcı özellikleri diyet puanlarındaki varyansın %11'ini, egzersiz puanlarındaki varyansın ise %6'sını açıklamaktadır. Akademisyenlerin pandemi sürecindeki beslenme ve egzersiz alışkanlıklarına ilişkin deneyimleri, diyet puanlarındaki varyansın %9'unu, egzersiz puanlarındaki varyansın ise %28'ini açıkladı. Akademisyenlerin %26,7'si pandemi döneminde çevrelerindeki kişilerin egzersiz konusunda kendilerinden tavsiye aldığını bildirdi. Ayrıca akademisyenlerin %38,2'si salgın döneminde çevrelerindeki kişilerin beslenme konusunda kendilerinden tavsiye istediğini belirtti.

Bu nedenle hemşirelik akademisyenlerinin pandemi sırasında sağlıklı yaşam tarzı davranışları sergilemeleri, doğru beslenme ve egzersiz konusunda toplumsal farkındalığın artırılmasında rol model olmaları büyük önem taşıyor.

Anahtar Kelimeler: Akademik, Sağlıklı Yaşam Tarzı Davranışları, Hemşire, Diyet, Egzersiz

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INTRODUCTION

A series of pneumonia cases with an unknown etiology were reported on December 30, 2019, in the city of Wuhan in the Hubei Province of China. The disease, known as COVID-19, was declared an international public health emergency by the World Health Organization (WHO) on January 30, 2020, and was later classified as a pandemic due to its rapid spread on March 11, 2020.[1] Clinical management of COVID-19 encompasses infection prevention, control measures, and supportive care, such as supplemental oxygen and mechanical ventilation when necessary.[2] Thus, a healthy and strong immune system offers protective effects against this infection. Diet and exercise are key strategies for strengthening the immune system and providing protection against infections.[3]

Measures such as social distancing, lockdown, curfew, travel restrictions, closure of institutions and workplaces, flexible working hours, distance education, and working from home during the ongoing pandemic have changed the daily routines of individuals.[4, 5] However, these measures have led to decreased physical activity, altered nutrition behaviors, increased sedentary time, disrupted sleep patterns, and reduced quality of life.[6, 7] Pandemic interventions, disrupting academic routines, have increased screen time and consequently led to overeating and higher energy intake.[7] Lockdown measures may have worsened exercise and nutrition behaviors, increasing the risk of weight gain, obesity, and ultimately, cardiometabolic risk and mortality.[7] Nutrition and exercise behaviors of nursing students were affected by lockdown. It is stated that nearly half of students (46.9%) gained weight, and the majority (56.7%) did not exercise regularly.[8] An innovative approach in the health system requires a society that is health-conscious and proactive in managing its own health.[9] Nurse academics have the crucial responsibility of raising health awareness among their peers, training them, and conducting health consultations with innovative, age-appropriate approaches. Nurse academics play an effective role in helping society adopt healthy lifestyle behaviors. Therefore, it's vital to assess academicians' health behaviors and foster the necessary changes. This study aimed to investigate the dietary and exercise habits of nurse academics and the factors affecting these habits during the pandemic period.

MATERIALS AND METHODS

Type and aim of the study

The aim of this descriptive and relational study was to investigate the dietary and exercise habits of nurse academics and the factors affecting these habits during the pandemic period. Reporting of the study was structured according to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist.

Research population and sample selection

The study was conducted from October 1 to December 1, 2020. The study population included 2.400 nurse academics working in Turkey. The sample size was determined as at least 332 using OpenEpi version 3, which is a publicly available statistical software (http://www.openepi.com), with an error of 0.05, 95% confidence interval, and 80% power to represent the universe. In Turkey, the field of nursing encompasses 9 departments (surgical diseases/ pediatric health and diseases/ internal diseases/ obstetrics and gynecology/ public health/ psychiatric nursing, nursing principles, nursing management and nursing education). To account for potential data loss, we sent data collection tools to 398 academicians, 20% more than the initial sample size, stratifying according to department and ensuring proportional selection. 393 academics voluntarily participated in the

study and fully completed the data collection forms.

Data collection instruments

The questionnaire form included 49 questions about the descriptive characteristics of the participants, their dietary and exercise habits, and their experiences during the pandemic.[10-13] Academics' dietary and exercise habits were assessed with the Healthy Lifestyle Behaviors Scale II (HLBS-II), a standard evaluation tool validated and deemed reliable in Turkey[14].

HLBS-II: The first version of this scale was developed by Walker et al. in 1987; it was revised in 1996 and called HLBS-II. This scale has been adapted to various languages; for this study, we used the Turkish version validated and deemed reliable by Bahar et al. HLBS-II is a 4-point Likert-type scale (1, never; 2, sometimes; 3, often; and 4, regularly).[14] Diet and physical activity subscales of the HLBS-II were used in this study. Physical activity, an essential element of a healthy lifestyle, measures how frequently an individual exercises. The Turkish validation of the scale reported a Cronbach's alpha of 0.94 for the entire scale, with 0.87 for the physical activity and 0.72 for the diet subscales, respectively[14]. For this study, the Cronbach's alpha values were 0.87 for the physical activity subscale and 0.73 for the diet subscale.

Data collection method

Data was collected via a structured online questionnaire created on Google Forms. Invitations were sent to the participants' corporate e-mail addresses registered in the Higher Education Council Information Management System and shared via social media (Facebook, Instagram, WhatsApp) accounts. Participants agreed to participate in the study by providing a digital informed consent form. Researchers monitored responses through the online form and concluded data collection upon reaching the target sample size.

Ethical aspect of the research

Throughout this study, the Helsinki Declaration on Human Rights was observed. Prior to the commencement of the research, we acquired the necessary permissions for utilizing the scale from its proprietor, and approval was obtained from the Ethics Committee (Decision No: 2020/23.03 28.09.2020). Participants were required to digitally sign an informed consent form before proceeding with the questionnaire.

Data analysis and evaluation

In terms of data analysis and evaluation, this study utilized the SPSS 23.0 Windows software for data processing. The normal distribution of the variables was assessed using the Kolmogorov-Smirnov test. To describe the general characteristics of the participants, descriptive statistics such as percentage, frequency, and mean were employed. We applied multiple linear regression analysis, utilizing the enter method, to determine descriptive variables influenced the diet and physical activity subscale scores on the HLBS-II. Before performing the multiple linear regression analysis, checks for multicollinearity and the normality of the data were conducted. A significance level of $p < .05$ was considered statistically significant.

RESULTS AND DISCUSSION

Of the participating nursing academics, 91.3% were female, 66.7% were married, 82.2% did not have chronic diseases, and 56.0% were without a PhD. The mean age of the participants was 36.66 ± 8.01 years, their professional experience was 12.88 ± 9.31 years, HLBS-II diet subscale score was 22.19 ± 3.74, physical activity subscale score was 16.12 ± 5.29, and the body mass index (BMI) was 24.05 ± 3.98 kg/m^2 [Table 1]. Assessment of the dietary and exercise habits of the academics during the pandemic period showed that 12.7% of them adopted a new dietary habit, 13.7% of them used a mobile application to monitor their diet, 43.5% of them used a mobile application to monitor their physical activity habits, and 9.9% received professional support for diet and exercise. During the pandemic, 26.7% of academics reported that people around them sought advice from them about exercise. Furthermore, 38.2% of academics stated that people around them asked them for advice on nutrition during the pandemic [Figure 1].

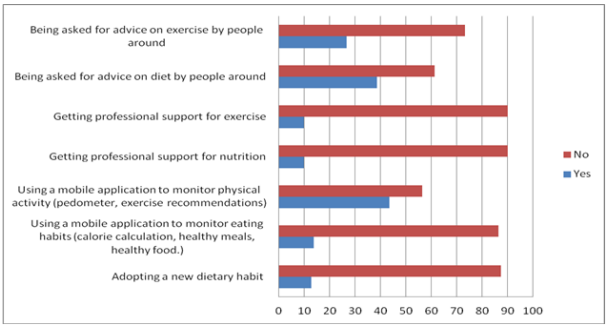

Figure 1. Experiences of Academics on Diet and Exercise During The Pandemic

Assessment of the changes in the diet and exercise habits of the academics during the pandemic period showed an increase in the habits such as consumption of foods that strengthen the immune system (50.1%), cooking and eating at home (64.4%), and time spent passively (watching TV and studying, 46.1%) and a decrease in the habits such as consumption of fast food (47.6%) and eating out (75.6%). In addition, consumption of healthy snacks (43.3%), consumption of water (40.2%), intake of nutritional supplements (40.2%), practicing sports or doing exercises at home (35.4%), playing outdoor sports and doing outdoor exercises (22.4%) increased. The consumption of sugar-sweetened beverages (34.0%), consumption of unhealthy snacks (34.4%), sugar consumption (34.9%), daily calorie intake (28.2%), consumption of salt (17.6%), time spent actively (21.1%), and exercising in the gym (48.3%) decreased [Figure 2].

Descriptive characteristics of the academics explained the 11% variance in the diet score and the 6% variance in the exercise score. The presence of chronic diseases (β = 0.158; p = .018) and being a PhD graduate (β = -0.256; p = .000) were significant predictors of the diet subscale of HLBS-II, and being a PhD graduate (β = 0.147; p = .035) was a significant predictor of the physical activity subscale [Table 2].

Table 1. Descriptive Characteristics of Academics

	Mean ± SD	
Age (years)	36.66 ± 8.01 (min: 23, max: 60)	
Professional experience (years)	12.88 ± 9.31 (min: 0, max: 42)	
Number of children	1.60 ± 0.59 (min: 1, max: 3)	
BMI (kg/m^2)	24.05 ± 3.98 (min: 16.41, max: 40.79)	
HLBS-II subscale score		
Diet	22.19 ± 3.74 (min: 10, max: 35)	
Physical activity	16.12 ± 5.29 (min: 8, max: 32)	
	n	**%**
Gender		
Female	359	91.3
Male	34	8.7
Marital Status		
Married	262	66.7
Single	131	33.3
Presence of chronic disease		
Yes	70	17.8
No	323	82.2
PhD graduate		
PhD graduate	173	44.0
Without a PhD	220	56.0

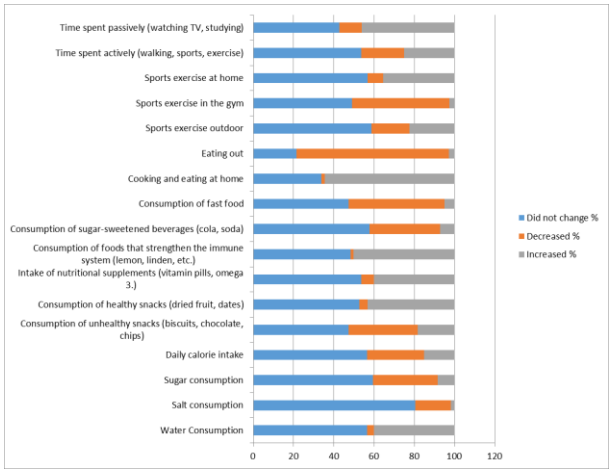

Figure 2. Changes In Diet and Exercise Habits of Academics During The Pandemic

Experiences of the academic in their dietary and exercise habits during the pandemic explained the 9% and 28% variance observed in the diet and physical activity scores, respectively. Adopting a new dietary habit (β = 0.146; p = .004), getting professional support for diet (β = 0.166; p = .001), being asked for advise on diet by people around (β = -0.175; p= .000) were significant predictors on the diet subscale of the HLBS-II. Using a mobile application to monitor the physical activity habits (β = 0.272; p = .000), getting professional support for exercise (β = 0.187; p = .000), and being asked for advice on exercise by people around (β = 0.285; p = .000) were found to be significant predictors of the physical activity subscale of the HLBS-II [Table 3].

Nursing academics are role models for the society for gaining healthy lifestyle behaviors regarding diet and exercise. Assessment of the experiences of the nursing academics during the pandemic process showed that one out of 10 academics got professional support on diet and exercise; however, approximately 13.0% of them adopted a new dietary habit, 14.0% used a mobile application to monitor their dietary habits, and 44.0% used a mobile application to monitor their physical activity habits. Moreover, out of 10 academics, 4 were asked for advice from the people around them on diet and 3 were asked for advice on exercise [Figure 1].

Table 2. Impact of Academics' Characteristics on Diet and Activity Scores (HLBS-II)

	Unstandardized Coefficients		Standardized Coefficients		
Variable	B	Std, Error	Beta	*t*	*p*
Diet					
Constant	22.022	2.155		10.219	.000
Gender	.551	.980	.038	.563	.574
Marital status	-1.335	1.020	-.087	-1.309	.192
Number of children	.151	.418	.024	.361	.718
Presence of chronic diseases	1.516	.636	.158	2.385	.018
PhD graduate	1.898	.499	.256	3.802	.000
BMI	-.015	.060	-.017	-.247	.805
R = .333 R^2 =.111	$F_{(6.207)}$= 5.106		*p* = .000		
Physical activity					
Constant	14.894	2.917		5.106	.000
Gender	.337	1.326	.018	.254	.800
Marital status	-2.508	1.380	-.124	-1.817	.071
Number of children	.949	.566	.115	1.676	.095
Presence of chronic diseases	.870	.861	.069	1.011	.313
PhD graduate	1.430	.676	.147	2.117	.035
BMI	-.008	.082	-.007	-.103	.918
R = .247	R^2 = .061	$F_{(6.207)}$ = 2.233		*p* = .041	

The pandemic has drastically changed the routine lifestyle habits because of the compulsory restrictions, which resulted in significant behavioral changes, especially in relation to dietary and exercise habits. The disruption of regular work schedules because of the restrictions led to a decrease in leisure activities and an increase in screen time, which led to overeating and thus more energy intake. Besides changes in food intake, energy expenditure decreased significantly because of the disruption in the daily routine.[7] Thus, the pandemic has necessitated the adoption of new dietary and exercise habits. Academics have an important position in society because of the role they play in

imparting education. In particular, academics working in health-related fields should take the responsibility of being a role model for the society and students by displaying positive health behaviors.[15] Thus, in order for the academics to be role models, it is very important for them to adopt and exhibit healthy lifestyle behaviors. Mobile health applications that enable management of a healthy lifestyle and track changes in health behavior can be used to monitor health continuously, get feedback, and support behavioral change by using communication devices such as smartphones, smart watches, wearable or portable wireless sensors, tablets, and computers. Such mobile health applications allow individuals to obtain a count of their steps, number of calories that they burn, and their diets.[16] Mobile health applications are an effective and efficient way of communication that provide many benefits such as instant access to information and educating users in healthcare. The use of devices connected to the Internet is increasing every day, and these devices can be very beneficial in improving health outcomes, reducing costs, and strengthening our fight against the COVID-19 epidemic. Further, the use of mobile applications for the management of the pandemic can help in finding solutions to individual problems, providing information, maintaining health, and complying with the measures and recommendations prescribed by the state.[17]

A recent study indicates that the use of platforms that provide mobile application services related to health and diet are useful tools in reducing the negative impact of the lockdown on lifestyle[18]. Nursing academics are thus expected to check their health-related behaviors using mobile health applications, and thereby, be good role models by sharing positive health behaviors. To meet the expectations of society or the individuals around them, nurse academics should highlight their roles as health consultants and health educators.

Table 3. Impact of Academics' Pandemic Experiences on Diet and Activity Scores (HLBS-II)

	Unstandardized Coefficients		Standardized Coefficients	*t*	*p*
Variable	B	Std. Error	Beta		
Diet					
Constant	21.411	.239		89.658	.000
Adopting a new dietary habit	.466	.159	.146	2.929	.004
Using a mobile application to monitor dietary habits	-.760	.560	-.070	-1.357	.176
Getting professional support for diet	2.069	.644	.166	3.213	.001
Being asked for advice on diet by people around	1.341	.378	.175	3.545	.000
R= .305 R^2=.093 F=9.923 p=.000					
Physical activity					
Constant	13.619	.317		42.914	.000
Using a mobile application to monitor physical activity	2.895	.475	.272	6.091	.000
Getting professional support for exercise	3.299	.808	.187	4.082	.000
Being asked for advice on exercise by people around	3.408	.554	.285	6.156	.000
R= .527 R^2=.278 F=49.885 p=.000					

A recent study indicates that the use of platforms that provide mobile application services related to health and diet are useful tools in reducing the negative impact of the lockdown on lifestyle.[18] Nursing academics are thus expected to check their health-related behaviors using mobile health applications, and thereby, be good role models by sharing positive health behaviors. To meet the expectations of society or the individuals around them, nurse academics

should highlight their roles as health consultants and health educators.

Results of this study showed that the nurse academics showed an increase in habits such as cooking at home, consumption of foods that strengthen the immune system, consumption of healthy snacks, consumption of water, taking nutritional supplements, doing sports-exercise at home, and doing sports-exercise outdoors during the pandemic period, and habits such as eating out, consumption of fast food, consumption of sugar-sweetened beverages, consumption of unhealthy snacks, sugar consumption, daily calorie intake, salt consumption, time spent actively, and exercising in the gym decreased [Figure 2]. Previous studies have reported that especially during the pandemic period, a positive change in eating behavior includes the consumption of ready-to-eat foods, not skipping breakfast frequently, decreasing the consumption of fried food, and increasing the frequency of consumption of fruits. A negative change in the eating behavior includes an increase in the consumption of sugar and sugary drinks. In addition, an increase of 25.8% and 43.5% was reported in the consumption of healthy snacks and unhealthy snacks, respectively, and individuals with healthy eating habits showed high levels of physical activity.[19] Although the overall nutritional quality did not improve because of the lockdown, families increased their intake of legumes, fruits, and vegetables as they had more time to cook and improve their eating habits, and an increased behavior of consuming sweet foods was observed.[20] Previous studies showed that during the lockdown, a significant increase was reported in the intake of dairy products, vegetables, snacks, and sugary foods as well as in the daily hours spent without doing any physical activity.[21] In addition, compared to 2019, 2020 had a significant decrease in the number of daily steps by individuals in different European countries ranging from 7% to 38%.[22] Because of the restrictions associated with the pandemic, families are trying to improve their eating habits by cooking at home, avoiding readymade foods, and increasing consumption of vegetables and fruits.[20, 23] Similarly, nurse academics in this study showed a tendency to exhibit positive eating habits, but a significant change was not observed in their physical activity habits. In the recent years, efforts to promote an active lifestyle and increase awareness about health have led to an increase in the use of gyms by individuals. Gyms have started to be the preferred alternative places by people who are in a good socioeconomic position but have limited time and want to move away from the intense pressures of business and city life and to do sports regularly by taking professional support.[23, 24] Further, an individual has the opportunity to discover himself by participating in sports activities.[25] During the COVID-19 pandemic, the effects of which are felt globally, many public places such as gyms were shut down to prevent physical contact of individuals within the scope of "mask, distance, and hygiene" measures; this significantly affected the habits of people who regularly used these places. Frequency of walking and moderate- and high-intensity sports decreased during the pandemic period.[26, 27] Although almost half of the academics participating in the study showed a decrease in the habit of doing exercise in the gym, the rate of doing sports and exercises at home or outdoors did not increase at the same rate. To prevent this decrease in regular workout from having an adverse effect on the health of the academics, studies informing them about doing exercise at home or outdoors and increasing their awareness should be performed, and the academics should be supported by their institutions and the public to receive professional online training.

Among the descriptive characteristics of the academics, the presence of chronic disease and being a PhD graduate were found to be significant predictors of the diet subscale of the HLBS-II, and being a PhD graduate was also a significant predictor of the physical activity subscale [Table 2]. Lockdown is an unpleasant experience for people during the pandemic. Events such as loss of freedom during the pandemic, uncertainty about the illness, and inability to

manage leisure time effectively can affect the health of the individuals. Staying active and maintaining a routine of physical exercise during lockdown is very important for mental and physical health.[18] Insufficient physical activity, inability to follow healthy and balanced diet are associated with metabolic disorders such as obesity, cardiovascular diseases, and type 2 diabetes.[28] Previous studies have shown a relationship between young age and low education level and unhealthy lifestyles.[29] Healthy lifestyle behaviors during the pandemic are negatively related to the economic status of the participants.[27] This study shows that with PhD graduate have adopted a healthier lifestyle. In addition, the effects of the COVID-19 disease are more severe, particularly in individuals with a chronic disease diagnosis, and thus, academics with chronic diseases are more conscious and exhibit healthier behaviors.

Among the academics' experiences regarding diet during the pandemic, adopting a new dietary habit, and receiving professional support for diet are significant predictors of the diet subscale of the HLBS-II. On the other hand, from the experiences of the academics regarding exercise during the pandemic process, getting professional support for exercise, and being asked for advice on exercise by people around are significant predictors on the physical activity subscale [Table 3]. In the study, the mean scores of the diet and physical activity subscales of the HLBS-II were found to be 22.19 ± 3.74 and 16.12 ± 5.29, respectively [Table 1]. The nursing academics exhibited moderate level of healthy lifestyle behaviors because higher scores obtained from the scale indicate that the individual adopts health behaviors at a high level.[14] Hacihasanoglu et al. (2020) found that the mean scores of the instructors on the HLBS-II diet and physical activity subscale scores were 16.86 ± 3.23 and 10.09 ± 3.24, respectively.[30] The difference between the results may be attributed to the higher health literacy of nursing academics and the support that they received via mobile applications for the control of dietary and physical activity habits. Diet and physical activity are considered as essential components of human health and lifestyle. Today, lifestyle is seen as a multidimensional structure that includes a wide range of behaviors such as substance use, stress management, social support, and use of digital technology.[29]

Health literacy and e-health literacy are recommended as strategic approaches for a healthy lifestyle. The COVID-19 pandemic has created a complex information environment that requires people to be able to access, understand and critically evaluate information and services in ways that support healthy and protective behavior. Therefore, health literacy, which includes the ability to find, understand, evaluate, and apply health information in health behavior, is of great importance during the current pandemic. Digital health literacy applies this understanding of health literacy to digital environments and has become a fundamental requirement.[31] A previous study found that the health literacy level of academics was insufficient (28.8%), but the use of preventive health services and positive health behavior characteristics increased in individuals with high health literacy.[32] Another study reported that individuals with higher e-health literacy stated that they participate better in positive behaviors that improve health.[33] A study conducted with medical PhD graduate showed that the HLBD-II was a predictor of quality of life.[34] Therefore, nurse academics' awareness level about diet and physical activity and the use of technology have positive effects on healthy lifestyle behaviors. The results of a study conducted on nursing students during the pandemic period showed that the nutritional behaviors of nursing students were adversely affected during the social isolation process due to the COVID-19 pandemic, their eating patterns were disrupted, and nearly half of them gained weight. In addition, it was stated that the students made up the majority of students who did not exercise regularly before and during the pandemic.[8] It is clear that nurse academicians will be role models and contribute to the improvement of their own

health and then the health of the society in the training of this group that will serve the society.

Limitation and Strength

The study included only the nursing academics who were registered in the Information Management System of the Council of Higher Education, who were working in the field of nursing, and who agreed to participate in the study by completing online data collection tools. The research results in question can only be generalized to the sample group in the current research. The study data were limited to academics' self-reports, and given that this was a cross-sectional study, the study results only reflect the situation at the time of data collection.

CONCLUSION AND RECOMMENDATIONS

This research revealed the changes in physical activity and nutritional habits of nurse academics during the pandemic, as well as the factors affecting their nutrition and physical activity habits. Additionally, nursing academics reported that people around them sought information from them on nutrition and exercise during the pandemic. The pandemic and the restrictions associated with it have affected people in every part of the society as well as nursing academics. The rate of e-health literacy of academics will increase with an increase in the use of technology, thus leading to an increase in diet and physical activity levels. Academics and public health providers who play an active role in the formation and implementation of policies for increasing the awareness of society about health behaviors should be aware of the importance of diet and physical activity. Awareness studies should be performed by organizing programs and public service announcements on diet and physical activity through television that is easily accessible by the majority of people. A greater emphasis should be placed on health consultancy and providing training for such consultancy by health professionals who are responsible for the protection and development of public health, and individual programs should be implemented. It is very important to prepare informative guidelines and educate academics about dietary habits, meal schedules, regular exercise, and healthy nutrition.

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