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Investigating the Effect of Physical Activity Levels of Municipality Employees on their Healthy Lifestyle Behaviors During the COVID-19 Pandemic*

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Abstract

This study aimed to determine the effect of Physical Activity (PA) levels of municipal employees between the ages of 18-65 on Healthy Lifestyle Behaviors (HLB) according to their age, education level, and marital status during the COVID-19 pandemic period. A total of 368 volunteer personnel between the ages of 18 and 65 working in various directorates and positions of Bornova Municipality, such as Press and Broadcasting, Culture and Social Affairs, Police, Social Aid Affairs, Veterinary, Parks and Gardens, Financial Services, Zoning, Legal Affairs, Security and Support Services, were included in the study After a detailed explanation about the study was given to the participants, the Personal Information Form, the International Physical Activity Questionnaire (IPAQ) Short Form, and the HLB Scale II were applied. As a result of the analysis, statistically significant low-level negative relationships were found between the participants' PA scores and their ages ($p<.05$). It was found that the participants' PA scores showed statistically significant differences according to their marital status, occupational group and childbearing status ($p<.05$); and that they did not show statistically significant differences according to their body mass index, smoking/alcohol use status, social security status, education status and type of residence ($p>.05$). In addition, a low-level statistically significant negative relationship was found between their HLB scores and age ($p<.05$). It was found that the PA, nutrition, stress management sub-dimensions and HLB total scores showed statistically significant differences according to marital status ($p<.05$); and the HLB sub-dimensions and total scores showed statistically significant differences according to childbearing status ($p<.05$). As a result, it was observed that as the PA levels of municipal employees increased during the COVID-19 period, both the HLB sub-dimensions and the HLB total scores would increase. This situation shows the effect of FA levels on HLB.

Keywords: Municipal employees, Physical activity, Healthy lifestyle style

COVİD-19 Pandemi Döneminde Belediye Çalışanlarının Fiziksel Aktivite Düzeylerinin Sağlıklı Yaşam Biçimi Davranışlarına Etkisinin İncelenmesi

Öz

Bu çalışmanın amacı, COVID-19 pandemi döneminde 18-65 yaşları arasındaki belediye çalışanlarının fiziksel aktivite (FA) düzeylerinin yaş, eğitim düzeyi, medeni durumlarına göre sağlıklı yaşam biçimi davranışlarına (SYBD) etkisini belirlemektir. Çalışmaya, Bornova Belediyesinin Basın Yayın, Kültür Sosyal İşler, Zabıta, Sosyal Yardım İşleri, Veterinerlik, Park Bahçeler, Mali Hizmetler, İmar, Hukuk İşleri, Güvenlik ve Destek Hizmetleri gibi çeşitli müdürlüklerinde ve pozisyonlarda 18 – 65 yaşları arasında toplam 368 gönüllü personel dahil edilmiştir. Katılımcılara çalışma ile ilgili detaylı açıklama yapıldıktan sonra Kişisel Bilgi Formu, Uluslararası Fiziksel Aktivite Anketi Kısa Formu, Sağlıklı Yaşam Biçimi Davranışları Ölçeği II uygulanmıştır. Analiz neticesinde katılımcıların, FA puanları ile yaşları arasında istatistiksel anlamda negatif yönde düşük düzeyde anlamlı ilişkiler saptanmıştır ($p<.05$). Katılımcıların FA puanlarının, medeni duruma, meslek gruplarına ve çocuk sahibi olma durumlarına göre istatistiksel olarak anlamlı farklılık gösterdiği ($p<.05$); Beden Kütle İndeksi (BKI) durumlarına, sigara/alkol kullanma durumlarına, sosyal güvence durumlarına, eğitim durumlarına ve yaşanılan konut tipine göre istatistiksel olarak anlamlı farklılık göstermediği tespit edilmiştir ($p>.05$). Ayrıca SYBD puanları ile yaşları arasında negatif yönde düşük düzeyde istatistiksel olarak anlamlı ilişki saptanmıştır ($p<.05$). FA, beslenme, stres yönetimi alt boyutları ve SYBD toplam puanlarının medeni duruma göre istatistiksel olarak anlamlı farklılık gösterdiği ($p<.05$); SYBD alt boyutları ve toplam puanlarının çocuk sahibi olma duruma göre istatistiksel olarak anlamlı farklılık gösterdiği tespit edilmiştir ($p<.05$). Sonuç olarak, COVID-19 döneminde belediye çalışanlarının FA düzeyleri arttıkça hem SYBD tüm alt boyutlarının hem de SYBD toplam puanlarının artacağı gözlemlenmiştir. Bu durum, FA düzeylerinin SYBD üzerindeki etkisini ortaya koymaktadır.

Anahtar kelimeler: Belediye çalışanları, Fiziksel aktivite, Sağlıklı yaşam biçimi

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INTRODUCTION

Today, the concept of health encompasses an understanding that includes health services that protect the lives of individuals, families, and society, ensuring their continuity and supporting their development. The essence of this understanding is based on individuals living a healthy life, as well as acquiring behaviors that will ensure the continuation of this health and making the right decisions about their health (Çimen, 2003). Although today's technological developments seem to have the potential to increase the quality of healthy life, the facts behind these innovations are that they result in a decrease in the frequency of daily activities, an increase in physical movement restrictions, and an increase in the number of inactive individuals in the long term. This situation has negative effects on the health of individuals and society. Inactivity, which is a sedentary lifestyle, manifests itself in modern society in the form of behaviors such as meeting daily needs from computers, virtual environments, or markets. This phenomenon constitutes a significant problem and disadvantage for society (Bozkuş et al, 2013). During the COVID-19 pandemic, a large part of society was living in isolation at home due to curfews. In this context, it cannot be ignored that physical activity programs specially designed for individuals and personnel who must work for long periods in closed areas such as municipalities and similar institutions where they work behind a desk will support the immune system and reduce the negative effects on the physical, mental, psychological and spiritual health of individuals. In addition, the contribution of the above-mentioned physical activity and sports exercises to reducing and eliminating the factors that increase mortality rates by becoming a part of life is also remarkable. It is understood that physical activity has significant positive effects on mental, spiritual, and general health in reducing the morbidity and negative effects on the immune system of severe symptoms that may occur after contracting COVID-19 (Kaya-Ciddi and Yazgan, 2020). One of the main consequences and most important factors of the COVID-19 outbreak is the decrease in serum ferritin levels (Mattioli et al, 2020). Individuals who must stay at home, at work, and in various institutions for long periods have increased inactive behavior and lifestyles, resulting in decreased energy expenditure and decreased metabolic rate. The combination of all these factors has led to the emergence of chronic diseases, the progression of these diseases, the development of muscle atrophy, muscle loss, and even muscle wasting. In addition, this situation has caused the immune system to weaken and has posed vital risks (Barozzoni et al., 2020). It has been determined that physical activity increases the level of satiety hormones and decreases the concentration of the hunger hormone ghrelin. However, it should not be ignored that there may be variable effects on satiety hormones depending on the type, intensity, and time of exercise (Yücel, 2019). The protective, preventive, and therapeutic effects of physical activity against certain non-communicable diseases such as obesity have been proven. However, over time, the quality of life, comfort, and convenience levels increase. With technological developments, various sports branches and activities such as cycling, leisure activities (recreation), Zumba, Pilates, dance, and yoga have been added to individuals' physical activities. However, because of the rapid spread of COVID-19, governments, state and local

governments have had to ban most of these activities to protect public health. This has led to a decrease in physical activity and therefore to the problem of inactivity (Mattioli et al, 2020). To reduce the inactivity caused by these reasons and to protect our health, it has become mandatory to perform physical activities. In the home environment, considering the current conditions and environmental factors, it is essential to apply breathing exercises that do not pose a risk, increase muscle strength, and aim to protect it, combined with conditioning training and respiratory activities for a healthy life. In line with the information stated above, this study was conducted to determine the effect of physical activity levels of municipal employees on Healthy Lifestyle Behaviors during the COVID-19 Pandemic Period.

METHOD

Research Model

In this study, the relational screening model was used to analyze the relationships between variables. The relational screening model is a widely preferred research method to determine whether there is a relationship between two or more variables and, if so, the direction and degree of this relationship.

Research Group

The research group of this study consists of volunteer individuals between the ages of 18 and 65 who work in various directorates and positions affiliated with Bornova Municipality such as press and publication, social assistance, police, veterinary, parks and gardens, financial services, zoning, legal affairs, support services, cultural and social affairs, and security. Within the scope of our study, surveys were applied to a total of 368 employees from the above-mentioned universe and these data were included in the sample.

Ethical Approval

Balıkesir University Ethics Committee Commission approval was received for the study (Date: 22.09. 2021; Number: E-94025189-050.03-68271.

Data Collection Tools

In the data and analysis collection phase, a "personal information form" was prepared under the supervision of the researchers as the data analysis tool of the study. The International Physical Activity Questionnaire (Craig et al., 2003) was used to determine the physical activity level of the participants. In addition, the Healthy Lifestyle Behaviors Scale II was preferred to determine healthy lifestyle behaviors. The validity and reliability study of the International Physical Activity Questionnaire in Turkey was conducted by Öztürk in (2005). In our study, a short questionnaire consisting of seven questions covering the last week was used to assess the level of physical activity. The total score of the short form includes the sum of walking, moderate-

intensity activity duration (minutes), and frequency (days) of vigorous activity. The sitting score is calculated separately. The content of the questionnaire includes questions regarding physical activity performed for at least ten minutes in the last week. The total score is expressed with the "MET-minutes/week" criterion obtained by multiplying minutes, days, and MET (metabolic equivalent) values. In calculating walking and step scores, walking time (minutes) was multiplied by 3.3 METs. In the calculation, 4 METs were used for moderate-intensity activity and 8 METs were used for vigorous activity. Physical activity levels were classified as physically passive (3000 MET-min/week) (Craig et al, 2003).

The Healthy Lifestyle Behaviors Scale was reorganized in 1996 and named as the "Healthy Lifestyle Behaviors Scale II" (Walker et al., 1987). The validity and reliability studies of the scale were carried out by Bahar et al. (2008) and it was adapted to Turkish. The Healthy Lifestyle Behaviors Scale is a Likert-type scale that is evaluated between 1-4 points. The scoring system of the scale is measured with the expressions 1) never, 2) sometimes, 3) often, 4) regularly. In addition, the scale consists of a total of 52 items and six sub-factors. These sub-factors were spiritual development, health responsibility, physical activity (PA) and exercise, nutrition, interpersonal relations, and stress management. The item numbers and the meanings of the sub-dimensions in the survey are listed below: Health Responsibility (3, 9, 15, 21, 27, 33, 39, 45, and 51), PA and Exercise (4, 10, 16, 22, 28, 34, 40, and 46), Spiritual Development (6, 12, 18, 24, 30, 36, 42, 48, and 52), Nutrition (2, 8, 14, 20, 26, 32, 38, 44, and 50), Interpersonal Relations (1, 7, 13, 19, 25, 31, 37, 43, and 49) and Stress Management (5, 11, 17, 23, 29, 35, 41, and 47).

Data Collection

All data collection tools, and equipment were collected through digital communication tools such as e-mail and WhatsApp due to the pandemic process, hygiene rules, justification, and isolation obligation. The data of the study was collected between 22.10. 2021 and 22.04.2022 It took 6 months in total.

Data Analysis

The data collected from the participants via Google Form were first checked one by one and transferred to Excel. Here, the results were numerically coded and transferred to the SPSS program. First, descriptive statistics and normality analyses were applied to the data. In normality analyses, skewness and kurtosis values were checked. As a result of the analysis, it was determined that the data were in the range of ±2. It was determined that the determined values were suitable for normal distribution. In this context, independent groups t-test, one-way analysis of variance (ANOVA) and Person correlation analyses were used from parametric tests in the analysis of the data.

RESULTS

Table 1. Comparison results of participants' PA scores according to demographic information

Variable	**Marital Status**	N	$\overline{X}$	SD	t	p	Difference
Physical Activity	Married	231	2287,93	1899,79	-3,21	**,01****	
	Single	137	3065,98	2434,53			
	Child Status	N	$\overline{X}$	SD	t	p	
	Yes	187	2236,76	1985,53	-3,13	**,01****	
	No	181	2929,71	2249,45			
	Occupation Groups	N	$\overline{X}$	SD	F	p	
	Civil Servant[a]	26	1434,46	1259,06	2,79	**,04***	d>a
	Contracted Personnel[b]	49	2699,72	2171,75			
	Permanent Worker[c]	41	2490,40	2496,51			
	Personnel Inc.[d]	252	2685,96	2126,42			

***p< ,05; **p< ,01**

In Table 1, it was determined that the participants' PA scores showed a statistically significant difference according to their marital and child status (p< ,01). It was determined that the PA scores showed a statistically significant difference according to their occupational groups (p< ,05). According to the post-doc Scheffe results conducted to determine the source of the difference between occupation groups; it was determined that the average score of the Personnel Inc. group was significantly higher than the PA average score of the civil servants.

Table 2. Results of the relationship between the participants' PA and HLB scores and their ages

Variables			Age
HLB Sub-dimensions	**Health Responsibility**	r	-,16
		p	**,01****
	PA	r	-,20
		p	**,01****
	Nutrition	r	-,16
		p	**,02***
	Spiritual Development	r	-,11
		p	**,04***
	Interpersonal Relationships	r	-,16
		p	**,03***
	Stress Management	r	-,12
		p	**,03***
HLB		r	-,17
		p	**,01****
PA		r	-,20
		p	**,01****

***p< ,05; **p< ,01**

In Table 2, a low-level, statistically significant negative correlation was found between the participants' PA and HLB scores and their ages (p< ,05; p< ,05).

Table 3. Comparison results of participants' HLB scores according to marital status

Variables	Marital Status	n	$\overline{X}$	SD	t	p
Health Responsibility	Married	231	21,23	5,18	-,92	,36
	Single	137	21,76	5,75		
PA	Married	231	17,58	5,24	-3,91	**,00****
	Single	137	19,99	5,97		
Nutrition	Married	231	21,10	5,28	-2,58	**,01***
	Single	137	22,62	5,76		
Spiritual Development	Married	231	26,32	4,32	-1,64	,10
	Single	137	27,10	4,67		
Interpersonal Relationships	Married	231	25,20	4,21	-1,11	,27
	Single	137	25,73	4,72		
Stress Management	Married	231	20,65	4,23	-3,18	**,00****
	Single	137	22,12	4,46		
HLB	Married	231	132,07	24,61	-2,63	**,01***
	Single	137	139,33	27,08		

****p< ,01**

In Table 3, it was determined that the participants' PA (p< ,01), nutrition (p< ,05), stress management (p< ,01) sub-dimensions, and HLB total scores (p< ,05) from the SYBD sub-dimensions showed statistically significant differences according to marital status.

Table 4. Comparison results of participants' HLB scores according to their childbearing status

Variables	Child Status	n	$\overline{X}$	SD	t	p
Health Responsibility	Yes	187	20,18	4,00	-4,58	**,01****
	No	181	22,71	6,30		
PA	Yes	187	16,76	4,16	-6,21	**,01****
	No	181	20,26	6,38		
Nutrition	Yes	187	20,48	4,30	-4,29	**,01****
	No	181	22,90	6,30		
Spiritual Development	Yes	187	25,97	3,99	-2,82	**,01****
	No	181	27,27	4,82		
Interpersonal Relationships	Yes	187	24,68	3,67	-3,19	**,01****
	No	181	26,14	4,96		
Stress Management	Yes	187	20,06	3,49	-5,20	**,01****
	No	181	22,36	4,87		
HLB	Yes	187	128,13	18,32	-5,16	**,01****
	No	181	141,64	30,21		

****p< ,01**

In Table 4, it was determined that the participants' HLBS sub-dimensions and total scores showed statistically significant differences according to their childbearing status (p< ,01).

Table 5. Comparison results of participants' HLB scores according to their smoking/alcohol use status

Variables	Smoking/Alcohol Usage	n	$\overline{X}$	SD	t	p
Health Responsibility	Yes	200	21,01	5,52	-1,13	,10
	No	168	21,92	5,23		
PA	Yes	200	17,90	5,77	-2,17	**,03***
	No	168	19,17	5,41		
Nutrition	Yes	200	20,97	5,51	-2,69	**,01****
	No	168	22,50	5,40		
Spiritual Development	Yes	200	26,28	4,57	-1,55	,12
	No	168	27,00	4,32		
Interpersonal Relationships	Yes	200	25,21	4,40	-,92	,36
	No	168	25,63	4,41		
Stress Management	Yes	200	21,01	4,51	-,89	,38
	No	168	21,42	4,20		
HLB	Yes	200	132,37	26,13	-1,97	,06
	No	168	137,64	25,09		

***p< ,05; **p< ,01**

In Table 5, it was determined that the participants' PA (p< ,05) and nutrition (p< ,01) sub-dimensions of the HLB sub-dimensions showed statistically significant differences according to their smoking/alcohol use status.

Table 6. Comparison results of participants' HLB scores according to the type of residence they live in

Variables	Living Housing	n	$\overline{X}$	SD	t	p
Health Responsibility	Private	71	20,31	4,70	-1,94	,06
	Apartment House	297	21,69	5,53		
PA	Private	71	18,15	5,53	-,54	,59
	Apartment House	297	18,56	5,67		
Nutrition	Private	71	21,30	4,99	-,63	,53
	Apartment House	297	21,75	5,62		
Spiritual Development	Private	71	25,46	4,70	-2,42	**,02***
	Apartment House	297	26,88	4,37		
Interpersonal Relationships	Private	71	24,20	4,27	-2,58	**,01****
	Apartment House	297	25,69	4,40		
Stress Management	Private	71	20,28	4,24	-1,97	,06
	Apartment House	297	21,41	4,38		
HLB	Private	71	129,70	24,01	-1,85	,07
	Apartment House	297	135,99	26,05		

***p< ,05; **p< ,01**

In Table 6, it was determined that the participants' scores on the spiritual development (p< ,05) and interpersonal relationships (p< ,01) sub-dimensions of HLB showed statistically significant differences according to the type of residence they lived in.

Table 7. Comparison results of participants' HLB scores according to their BMI status

Variables	BMI	n	$\overline{X}$	SD	F	p	Difference
Health Responsibility	Normal Weight[a]	211	21,99	6,15	3,05	**,04***	a>b
	Overweight[b]	136	20,53	4,09			
	Obese[c]	21	21,57	4,07			
PA	Normal Weight[a]	211	19,05	6,31	2,87	,06	
	Overweight[b]	136	17,57	4,34			
	Obese[c]	21	18,67	5,45			
Nutrition	Normal Weight[a]	211	22,02	6,23	1,82	,16	
	Overweight[b]	136	20,97	4,35			
	Obese[c]	21	22,57	3,89			
Spiritual Development	Normal Weight[a]	211	26,86	4,63	1,23	,29	
	Overweight[b]	136	26,40	3,87			
	Obese[c]	21	25,43	6,01			
Interpersonal Relationships	Normal Weight[a]	211	25,74	4,73	1,53	,22	
	Overweight[b]	136	24,96	3,78			
	Obese[c]	21	24,81	4,66			
Stress Management	Normal Weight[a]	211	21,91	4,71	7,50	**,00****	a>b
	Overweight[b]	136	20,08	3,42			
	Obese[c]	21	21,24	5,00			
HLB	Normal Weight[a]	211	137,57	29,28	3,15	**,04***	a>b
	Overweight[b]	136	130,51	18,47			
	Obese[c]	21	134,29	25,86			

***p< ,05; **p< ,01**

In Table 7, it was determined that the participants' HLB sub-dimensions; health responsibility, stress management sub-dimensions, and HLB total scores showed statistically significant differences according to their BMI status (p< ,01). According to the post-hoc Scheffe results conducted to determine the source of the difference; it was determined that the mean score of those with normal weight was significantly higher than the mean score of those who were obese in health responsibility, stress management and HLB total scores (p< ,05).

Table 8. Comparison results of participants' HLB scores according to occupational groups

Variables	Occupation Group	n	$\overline{X}$	SD	F	p	Difference
Health Responsibility	Civil Servant[a]	26	21,23	5,94	2,80	**,04***	b>d
	Contracted Personnel[b]	49	23,47	6,07			
	Permanent Worker[c]	41	20,80	4,72			
	Personnel Inc.[d]	252	21,15	5,25			
PA	Civil Servant[a]	26	18,54	5,89	1,41	,24	
	Contracted Personnel[b]	49	20,00	5,98			
	Permanent Worker[c]	41	18,39	5,25			
	Personnel Inc.[d]	252	18,19	5,59			
Nutrition	Civil Servant[a]	26	23,19	4,94	3,40	**,02***	b>d
	Contracted Personnel[b]	49	23,57	5,66			
	Permanent Worker[c]	41	21,51	5,29			
	Personnel Inc.[d]	252	21,16	5,48			
Spiritual Development	Civil Servant[a]	26	26,46	5,56	4,00	**,01****	b>c
	Contracted Personnel[b]	49	27,06	5,35			
	Permanent Worker[c]	41	24,39	5,20			
	Personnel Inc.[d]	252	26,90	3,92			

***p< ,05; * *p< ,01**

Table 8 (Continue). Comparison results of participants' HLB scores according to occupational groups

Variables	Occupation Group	n	$\overline{X}$	SD	F	p	Difference
Spiritual Development	Civil Servant[a]	26	26,46	5,56	4,00	**,01****	b>c
	Contracted Personnel[b]	49	27,06	5,35			
	Permanent Worker[c]	41	24,39	5,20			
	Personnel Inc.[d]	252	26,90	3,92			
Interpersonal Relationships	Civil Servant[a]	26	25,46	5,47	3,21	**,02***	d>c
	Contracted Personnel[b]	49	25,96	5,09			
	Permanent Worker[c]	41	23,44	4,66			
	Personnel Inc.[d]	252	25,60	4,03			
Stress Management	Civil Servant[a]	26	20,92	4,82	1,43	,24	
	Contracted Personnel[b]	49	21,10	5,73			
	Permanent Worker[c]	41	19,95	4,35			
	Personnel Inc.[d]	252	21,44	4,00			
HLB	Civil Servant[a]	26	135,81	27,96	1,86	,14	
	Contracted Personnel[b]	49	141,16	30,59			
	Permanent Worker[c]	41	128,49	26,61			
	Personnel Inc.[d]	252	134,45	24,21			

***p< ,05; * *p< ,01**

In Table 8, it was determined that the participants' HLB sub-dimensions; health responsibility (p< ,05), nutrition (p< ,05), spiritual development (p< ,05), and interpersonal relations (p< ,01) sub-dimensions scores showed statistically significant differences according to occupational groups. According to the post-hoc Scheffe results conducted to determine the source of the difference, it was determined that the average score of the contracted personnel in the health responsibility and nutrition dimension was significantly higher than the average score of the Personnel Inc. group; the average score of the contracted personnel in the spiritual development dimension was significantly higher than the average score of the permanent workers, and the average score of the Personnel Inc. group was significantly higher than the average score of the permanent workers in the interpersonal relations dimension.

Table 9. Comparison results of participants' HLB scores according to their social security status

Variables	Social Security	n	$\overline{X}$	SD	F	p	Difference
Health Responsibility	SSK[a]	138	21,09	4,84	1,77	,17	
	Pension fund[b]	23	19,87	4,37			
	SGK[c]	207	21,82	5,81			
PA	SSK[a]	138	18,17	4,94	,89	,41	
	Pension fund[b]	23	17,48	5,02			
	SGK[c]	207	18,80	6,12			
Nutrition	SSK[a]	138	21,82	4,52	,43	,65	
	Pension fund[b]	23	22,48	5,04			
	SGK[c]	207	21,47	6,13			
Spiritual Development	SSK[a]	138	25,86	4,46	4,20	**,02***	c>a
	Pension fund[b]	23	25,83	5,11			
	SGK[c]	207	27,20	4,32			

***p< ,05; **p< ,01**

Table 9 (Continue). Comparison results of participants' HLB scores according to their social security status

Variables	Social Security	n	$\overline{X}$	SD	F	p	Difference
Interpersonal Relationships	SSK[a]	138	25,09	4,19	1,27	,28	
	Pension fund[b]	23	24,52	5,12			
	SGK[c]	207	25,70	4,46			
Stress Management	SSK[a]	138	19,88	4,32	14,12	**,00****	c>a,b
	Pension fund[b]	23	19,83	4,00			
	SGK[c]	207	22,23	4,18			
HLB	SSK[a]	138	131,91	22,25	2,19	,11	
	Pension fund[b]	23	130,00	23,87			
	SGK[c]	207	137,21	27,89			

***p< ,05; **p< ,01**

In Table 9, it was determined that the participants' HLB sub-dimensions; spiritual development (p< ,05) and stress management (p< ,01) sub-dimensions showed a statistically significant difference according to their social security status. According to the post-hoc Scheffe results conducted to determine the source of the difference; in the spiritual development dimension, the average score of those with SGK security was significantly higher than the average score of those with SSK security; in the stress management dimension, the average score of those with SGK security was significantly higher than the average score of those with retirement fund and SSK security.

Table 10. Comparison results of participants' HLB scores according to their educational status

Variables	Education Level	n	$\overline{X}$	SD	F	p	Difference
Health Responsibility	Primary education[a]	54	20,74	3,30	,93	,43	
	High school[b]	146	21,22	5,87			
	Licence[c]	143	21,66	5,67			
	Postgraduate[d]	25	22,72	4,47			
PA	Primary education[a]	54	17,30	3,74	2,42	,07	
	High school[b]	146	18,29	6,18			
	Licence[c]	143	18,71	5,74			
	Postgraduate[d]	25	20,84	4,51			
Nutrition	Primary education[a]	54	20,72	4,17	3,23	**,02***	d>a
	High school[b]	146	21,31	6,11			
	Licence[c]	143	21,87	5,32			
	Postgraduate[d]	25	24,60	4,43			
Spiritual Development	Primary education[a]	54	24,46	4,29	5,49	**,01****	b,c,d>a
	High school[b]	146	26,69	4,33			
	Licence[c]	143	27,17	4,28			
	Postgraduate[d]	25	27,52	5,37			
Interpersonal Relationships	Primary education[a]	54	23,56	3,67	4,44	**,01****	c>a
	High school[b]	146	25,36	4,49			
	Licence[c]	143	26,07	4,33			
	Postgraduate[d]	25	25,76	4,84			
Stress Management	Primary education[a]	54	20,00	3,22	2,57	,06	
	High school[b]	146	21,64	4,62			
	Licence[c]	143	20,99	4,39			
	Postgraduate[d]	25	22,36	4,48			
HLB	Primary education[a]	54	126,78	18,17	3,02	**,03***	d>a
	High school[b]	146	134,51	28,51			
	Licence[c]	143	136,49	25,06			
	Postgraduate[d]	25	143,80	23,29			

***p< ,05; **p< ,01**

In Table 10, it was determined that the participants' HLB sub-dimensions; nutrition (p< ,05), spiritual development (p< ,01), interpersonal relations (p<,01) sub-dimensions and HLB total scores (p< ,05) showed statistically significant differences according to their educational status. According to the Post Hoc (SCHEFFE) results conducted to determine the source of the difference; in the nutrition dimension, the average score of those with a postgraduate education level was significantly higher than the average score of those with a primary school education level; in the spiritual development dimension, the average score of those with a high school, undergraduate and postgraduate education level was significantly higher than the average score of those with a primary school education level; in the interpersonal relations dimension, the average score of those with a bachelor's education level was significantly higher than the average score of those with a primary school education level; in HLB total scores, the average score of those with a postgraduate education level was significantly higher than the average score of those with a primary school education level.

Table 11. Results of the relationship between participants' PA scores and HLB

Variables			**PA**
HLB Sub-Dimensions	**Health Responsibility**	r	,38
		p	**,01****
	PA	r	,52
		p	**,01****
	Nutrition	r	,44
		p	**,01****
	Spiritual Development	r	,30
		p	**,01****
	Interpersonal Relationships	r	,35
		p	**,01****
	Stress Management	r	,39
		p	**,01****
HLB Total Score		r	,46
		p	**,01****

****p< ,01**

In Table 11, positive moderately significant relationships were found between the participants' PA scores and the HLB sub-dimensions; health responsibility, PA, nutrition, spiritual development, inter-personal relationships, stress management sub-dimensions and HLB total scores (p< ,01).

DISCUSSION AND CONCLUSION

According to the findings of this study conducted to examine the effect of PA levels of municipal employees on HLB during the COVID-19 Pandemic period; Statistically negative low-level significant relationships were found between the participants' PA scores and their ages (p<.05). Therefore, as age increased, PA levels decreased, and as age decreased, PA levels increased.

Burton and Turrell (2000) stated that there is a negative relationship between age and PA level and that PA level decreases with increasing age. In a study conducted in Brazil, it was determined that 41.1% of participants over the age of 20 and 38% of individuals in the 20-29 age group were inactive (Hallal et al., 2003).

When the effects of marital status on PA levels were examined in the study, a significant difference was observed. It was determined that single individuals had higher PA levels compared to married individuals ($p<.05$). Deniz (2011) and Özüdoğru (2013) similarly stated that married individuals had lower emotional intelligence PA levels compared to single individuals. These findings support the results of our study and can be explained by the fact that single individuals are younger and more dynamic.

In the study, it was found that the PA levels of the participants who did not have children were significantly higher than the participants who did ($p<.05$). Esen (2010) stated that the PA levels of women who had children were lower, while Tammelin et al. (2003) suggested that not having children was related to the women's inability to do physical activity. Memiş and Yıldıran (2007) found no significant difference in PA levels between individuals with and without children and evaluated the PA levels of both groups as "low". These results contradict our study. As a result of the research, it was determined that the PA scores of the participants showed significant differences according to their occupational groups ($p<.05$). The PA score average of the Personnel Inc. group was found to be significantly higher than the average score of civil servants. Şimşek (2020), in his study with high school students, revealed that the PA scores of worker mothers were lower than those of civil servant mothers. These findings support the results of our research and show that civil servants are more active. Ergin et al. (2016) found no significant difference between smoking and PA levels; this finding is consistent with our study. On the other hand, Savcı et al. (2006) found that total PA and walking scores of non-smoking students were higher than those of smokers. This finding is contradictory to our study.

In the studies conducted by Raustorp et al. (2004) and Hallal et al. (2003), no relationship was found between BMI and PA values measured by pedometer; this situation is similar to the findings of our study. On the other hand, Aktaş et al. (2015) stated that the PA levels of individuals with a high level of education were sufficient. On the other hand, Önemli (2020) observed a significant difference between the PA levels of women and their educational status. However, these findings do not coincide with the results of our study.

In our study, a negative, low-level statistically significant relationship was found between the participants' HLB scores and their ages ($p<.05$). In his study conducted in Isparta, Özçelik (2012) stated that the scores obtained from the self-actualization, health responsibility and interpersonal support sub-dimensions decreased with age, but this difference was not statistically significant. On the other hand, Thanavaro et al. (2006) did not find any relationship between persistent illness behaviors and age in their study conducted in the USA. These findings contradict the

results of our study. In our study, it was determined that the participants' HLB sub-dimensions PA, nutrition, stress management and total HLB scores exhibited statistically significant differences according to their marital status ($p<.05$). Our study revealed that single participants had higher scores than married individuals in certain sub-dimensions. In the literature, it was stated that the mean scores of married individuals in the HLB sub-dimension PA were lower than single individuals (Kolaç et al., 2018; Güner and Demir, 2006). In addition, Yanık and Noğay (2017) found that single individuals had higher PA, stress management, and total HLB scores than married individuals. These findings are consistent with the results of our study.

In our study, it was determined that the participants' health responsibility, spiritual development, interpersonal relations sub-dimensions, and HLB total scores did not show a significant difference according to marital status ($p<.05$). Similar studies have reached the same conclusion (Ahijevych and Bernhard, 1994; Sayan and Erci, 2001; Zincir et al., 2003). However, Yanık and Noğay (2017) stated that single individuals had higher health responsibility and spiritual development scores than married individuals. These findings contradict the results of our study.

In the study, it was determined that the participants' HLB sub-dimensions and total scores showed significant differences depending on the status of having children ($p<.05$). In the studies conducted, it was observed that the scores of individuals who did not have children were higher. In a study conducted on nurses, it was emphasized that those who did not have children had higher levels of stress management and spiritual development (Cürcani et al., 2010; Özkan and Yılmaz, 2008). Similarly, among factory workers, it was determined that individuals who did not have children had higher PA mean scores. These findings are consistent with our study. However, other studies on academic staff and elderly care homes provide different results (Güler et al., 2008; Tambağ, 2010).

According to the research findings, it was determined that the participants' PA and nutrition scores from the HLB sub-dimensions showed significant differences depending on their smoking and alcohol use status ($p<.05$). Studies have shown that smoking and alcohol usage harm individuals' nutrition scores. Vural and Bakır (2015) emphasized that individuals who do not smoke or drink alcohol have higher nutrition scores. Similarly, Özkan and Yılmaz (2008) and Ayaz et al. (2005) also found that non-smokers have higher nutrition scores. Although no significant relationship was found between certain sub-dimensions and smoking and alcohol use in our study, it is seen that healthy eating habits and PA direct individuals to be more careful in smoking and alcohol use.

According to the research findings, significant differences were observed in the participants' spiritual development and interpersonal communication sub-dimensions according to the type of residence ($p<.05$). In a study, it was determined that municipality employees living in apartments received higher scores in terms of spiritual development and inter-personal relations compared to those living in detached houses. However, no significant difference was found between the total

scores such as health responsibility PA, nutrition, stress management, and health management. Yuvakgil (2017) found a significant difference between the type of residence and health responsibility of elderly individuals, while Tambağ (2010) did not find a significant difference in terms of health management between individuals living in nursing homes and having children. The results of these studies partially overlap with the findings of our current study.

According to the research findings, significant differences were observed between the participants' health responsibility, stress management sub-dimensions, and general HLB scores according to their BMI status ($p<.05$), However, no significant difference was observed in the areas of PA, nutrition, spiritual development and interpersonal relations. The study conducted by Pasinlioğlu and Gözüm (1998) is also parallel to these results. In a study conducted by Cihangiroğlu and Deveci (2011), no relationship was found between the students' BMI and HLB total scores.

According to the research findings, significant differences were observed between the participants' scores in sub-dimensions such as health responsibility, nutrition, spiritual development and interpersonal relations according to their occupational groups ($p<.05$), However, no significant difference was found in the total scores of PA, stress management and HLB. The findings show that the contract personnel had higher health responsibility, nutrition and spiritual development scores, and the Personnel Inc. group performed better than permanent workers in interpersonal relations. These results were not found in the study conducted by Yanık and Noğay (2017).

According to the research findings, a significant difference was observed in terms of participants' spiritual development and stress management scores according to social security status ($p<.05$), but no difference was found between the total scores of health responsibility, PA, nutrition, interpersonal relations, and social competence skills. Polat and Kahraman (2013) also did not find a significant difference between social security status and social competence skills subgroups; this finding partially supports the results of our research.

According to the research findings, significant differences were found between the participants' nutrition, spiritual development, interpersonal relations, and HLB total scores depending on their educational status ($p<.05$). The studies conducted to shed light on the relationship between the participant's level of education and their healthy behaviors. Participants with high school, undergraduate, and postgraduate education levels obtained higher scores compared to participants with primary school levels. Studies conducted by Özkan and Yılmaz (2008) and Geçkil and Yıldız (2006) also reveal similar results. However, in a study conducted by Güner and Demir (2003), no relationship was found between education and support scores; this situation creates a contradiction with the current findings. As a result, it can be said that increasing the level of education has positive effects on nutrition, spiritual development, interpersonal relations, and healthy life behaviors.

The research findings show that there are positive moderately significant relationships between PA scores and HLB sub-dimensions ($p<.05$). It is observed that as the total MET score increases, the scores of all HLB sub-dimensions also increase. The results of Zhu et al. (2019), Toktaş et al. (2018), Şimşek (2020), and other studies have revealed similar positive relationships between PA and HLB. In addition, in the studies of Söyleyici (2018) and Özkan et al. (2013), significant differences were found in group means according to MET classes. However, Söyleyici (2018) did not find a significant difference with PA in personal relationships, which contradicts the findings of our study.

CONCLUSION

The research findings revealed that PA and HLB decrease with age. On the other hand, it was determined that PA and HLB levels of municipality personnel who are single, childless, and working under contract are higher. In addition, it was determined that PA levels are independent of smoking and alcohol use, housing type, BMI, and social security type. Increasing education level has a positive effect on HLB sub-dimensions such as nutrition, spiritual development, and interpersonal relationships. It was observed that the increase in PA levels has a positive effect on all sub-dimensions of the HLB scale; it especially improves stress management and eating habits. These findings show that increasing PA levels and encouraging HLB play a critical role in supporting the general health and quality of life of employees under extraordinary conditions such as pandemics.

Suggestions

In line with the findings obtained from this study, it is recommended that more comprehensive research be conducted on PA and HLB. During epidemic periods, interdisciplinary studies at the national level are important for the protection of PA and HLB. Corrective training programs should be established to improve the health of municipal employees and should be adapted to their working conditions. In addition, the opinions of employees should be taken into account in the projects, and sports centers and health support areas should be planned in the regions where employees live. Awareness studies should be carried out to increase PA levels in the municipality, and projects promoting sports and health should be increased.

Conflict of Interest: There is no personal or financial conflict of interest within the scope of the study.

Declaration of Contribution of Researchers: Research Design by M.G, and S.Ç; Statistical Analysis; Manuscript Preparation by M.G, M.M, F.S Data Collection by S.Ç.

Information on Ethics Committee Permission
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