ORIGINAL ARTICLE

Investigation of the effect of regular physical activities applied to housewives on healthy lifestyle behaviors (Kocaeli Mother City [Anne Sehir] Project)

MALKOC NAGEHAN[1], COLAK SERAP[1]
[1]*Kocaeli University Faculty of Sport Sciences Kocaeli/Turkey*
Correspondence to: Nagehan Malkoc, Kocaeli University, Faculty of Sport Sciences, Kocaeli, Turkey, E-Mail:malkocnagehan@gmail.com

ABSTRACT

Background: Healthy lifestyle behavior can be defined as controlling the behaviors that affect one's health throughout their life, organizing their daily activities and choosing behaviors favorable to their health status. It can also be defined as the totality of behaviors based on the preservation of health according to age, the maintenance of the health order, and the continuous improvement of health. However, when physical activities are added into lifestyle, the status of the view on health may change.

Aim: In this context, our study aims to investigate the effects of programmed physical activities applied to housewives (HWs) participating in the "Kocaeli Mother City (Anne Sehir)" project on mothers' healthy living behaviors.

Methods: 552 HWs (age: 41.69±8.704), who were part of the "Kocaeli Mother City" project participated in our study. The Healthy Lifestyle Behaviors Scale (HLBS) was applied before and after a Physical Activity Program (PAP) to HWs who voluntarily participated in our study. The 8-week PAP was performed 3 days a week with 2 hours each day. The scale consists of 52 questions and 6-item subscales. Health responsibility, physical activity, nutrition, interpersonal relationships, stress management, and self-realization (spiritual development) are the subscales. The effect of physical activity on the healthy lifestyle behaviors of HWs participating in the study was examined, and the results of the questionnaire were evaluated statistically.

Results: A significant difference was found in all subscales of the HLBS scores of the participants between the PAP pre-test and post-test measurements ($p<0.05$). When the HLBS scores of the participants were compared according to the weight variable before and after PAP, significant differences were found between some subscales ($p<0.05$).

Conclusion: Our study showed that although activities such as PAP, which can bring a difference to the lives of HWs, seem small, HWs participating in PAP increased their perception of healthy living. Considering that HWs will start to think that they are healthier after PAP and that they can reflect this to family members with whom they are in close communication, it is recommended that PAP-type activities should be performed especially by HWs.

Keywords: Housewife, Physical Activity, Healthy Living Behaviors

INTRODUCTION

Healthy living behavior is the totality of behaviors based on the preservation of health, the maintenance of health order, and the continuous improvement of health. A healthy lifestyle is defined as controlling all behaviors that affect an individual's health and choosing behaviors appropriate to his or her health status while regulating their daily activities. Healthy lifestyle behaviors of individuals at different socio-economic levels and with different status and professions will differ and include adequate and regular exercise, balanced diet, not smoking, health responsibility, stress management and hygienic measures[1]. Movement is essential for the continuation of human health. The mobility skills of a person who has an active nature and the qualities of these skills have an important effect on the balance of the integrity of development, prevention from diseases and during treatment. It has been determined with previous studies that regular physical activities have a positive effect on various systemic functions, help the cardiovascular structure of the elderly similarly to young people by 10%–30% and also reduce risk factors, improve body composition, and improve insulin resistance and blood pressure values of hypertensive individuals[2,3,4,5].

Studies have shown that regular physical activity reduces the risk of high blood pressure, cardiovascular diseases, contracting obesity, some types of cancer, and various chronic diseases, as well as death[6].

Recently, lifestyle and stress-induced self-overload have been found to be effective factors that play a role in the deterioration of physical, social, and psychological health, as well as decreased productivity[7]. Another benefit of participating in physical activities is that it increases self-esteem and decreases stress and depression[8].

An inactive life initially causes health problems and then related psychological problems, and this cycle affects people negatively. These problems are triggered by women's presently inactive roles, staying away from sports and exercise, hesitating, and viewing sports or exercise as unnecessary[3].

In social life, it has been observed that HWs have less housework that requires physical strength. Since the movements required by housework are repetitive and very monotonous, the expended energy also decreases, and it becomes difficult to maintain body posture[9]. In order to maintain the body posture, there is a need for a lifestyle that is maintained with regular exercise habits as well as a balanced and regular diet[10].

It is known that one of the most important ways to protect health in physical, emotional, and psychological terms is sports, as it has been proven many times by scientific data that it is possible to preserve health with

sports. It is necessary to show exercise as a necessity in order to avoid all adverse conditions and to keep the organism fit and healthy[11]. It can be thought that for HWs who meet the needs of their families at home all day, do housework and lead a monotonous life, participating in sports activities in society both sociologically and physically would contribute to their living standards. Based on this, we aim to investigate the effects of physical activities applied to housewife mothers (HWM) participating in the Kocaeli Mother City project on the healthy living behaviors of HWs.

MATERIALS AND METHODS

Subjects: The subject group of our research consists of 552 (age: 41.69 ± 8.704) HW's who regularly participate in physical activities organized within the scope of the "Mother City" project in Kocaeli Province. Weight, height, and BMI measurements were performed using Tanita (Model DC 360) body composition analyzer.

Data extraction: In order to determine healthy lifestyle behaviors for the HWMs participating in our study, the Healthy Lifestyle Behaviors Scale (HLBS II), which was developed by Walker et al. (1987) and whose validity and reliability in Turkish was provided by Bahar et al. (2008) was used. In addition, demographic information form for HWMs was filled out by the researcher in order to take the demographic characteristics of the housewives. Approval was obtained from the ethics committee of our university for our study[12,13].

Demographic information form: In order to determine the personal characteristics of women, a personal information form consisting of nine questions (age, marital status, number of children, family type, education status, number of individuals living at home, smoking, chronic illness, education status) was prepared by the researcher.

Healthy Lifestyle Behaviors Scale (HLBS II): HLBS was used to determine the healthy lifestyle behaviors of women, which was developed by Walker et al. (1987) and whose validity and reliability in Turkish was provided by Bahar et al. (2008) The scale consists of 52 questions and 6 sub-scales including health responsibility, physical activity, nutrition, interpersonal relationships, stress management and self-realization (spiritual development)[12,13]. The total score obtained from this scale gives the score for general healthy lifestyle behaviors. All items are positively scored. The scale is a 4-point likert type with the following values: never (1), sometimes (2), often (3), regularly (4). The lowest score that can be obtained from the scale is 52 and the highest score, 208. The Cronbach Alpha reliability coefficient of the scale is 0.94. In our study, the overall Cronbach Alpha coefficient of the scale was calculated as 0.853.

Research model and physical activity program: Quantitative research method was used in the study. Age and weight values of the participants in the study group were measured before and after the 8-week PAP application, and the Healthy Lifestyle Behaviors Questionnaire (HLBQ) was applied.

PAP, which is regularly applied to the HWMs participating in our study for 8 weeks, consists of 60-minute physical activities (step aerobics, Zumba, or Pilates) performed 3 days a week (Table-1). All sessions were started with a 10-minute warm-up before each PAP and completed with cool-down for 10 minutes after the activities. In addition, nature walks with an average length of 5 km were organized every two weekends, and approximately 45 minutes of walks were performed.

Table-1: Weekly Physical Activity Program

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Pilates	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00		
Zumba	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00		
Step - Aerobics	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00	Sessions every hour between 09:00-21:00		
Nature walks	Every two weekends;					11:00-12:00	11:00-12:00

Statistical Analysis: SPSS Statistics software (version 24.00) was used for the data analysis. Descriptive statistical calculations for the variables were performed. since the data showed normal distribution, two samples t test based on independent two population averages (two independent samples t test) and two samples t test based on the mean of the dependent two population differences (two related samples t test, paired t test) were applied. The data were analyzed at 95% confidence interval with 5% margin of error.

RESULTS

552 HWs (age: 41.69 ± 8.704) who regularly participated in physical activities organized within the scope of the "Mother City" project in Kocaeli province participated in our study. (Table-1).

Table-1. Descriptive statistics regarding the age and weight of women participating in physical activity

	N	Min	Max	$\bar{X}$	SS
Age(years)	552	23	70	41,69	8,704
Pre-test weight(kg)	552	47	116	71,07	12,244
Post-test weight(kg)	552	46	115	70,20	12,030

When the ages of the 552 women participating in the study are examined in Table-1, it is determined that the youngest is 23 and the oldest is 70 years old (41.69 ± 8.704). When the first measurement of weights before PAP are examined, the lowest is 47 kg and the highest is 116 kg (71.07 ± 12.224).

Table-2. Descriptive statistics and p value of pretest-posttest differences of healthy lifestyle behaviors scale scores according to the variable of under and over 60 kg.

	Weight	N	$\bar{X}$	SS	t	p
Health responsibility	Under 60 kg	117	1,6923	4,48842	-1,609	,046
	Over 60 kg	435	2,5609	5,35322	-1,780	
Physical activity	Under 60 kg	117	2,3333	4,94452	-2,346	,142
	Over 60 kg	435	3,6115	5,30441	-2,443	
Nutrition	Under 60 kg	117	,6752	3,75965	-1,599	,012
	Over 60 kg	435	1,4414	4,80045	-1,838	
Spiritual development	Under 60 kg	117	,2564	4,32944	-1,541	,395
	Over 60 kg	435	,9793	4,54948	-1,586	
Interpersonal relationships	Under 60 kg	117	,3590	4,32208	-1,341	,184
	Over 60 kg	435	1,0000	4,65986	-1,400	
Stress management	Under 60 kg	117	,6667	3,63650	-2,388	,045
	Over 60 kg	435	1,7310	4,43580	-2,676	
Total	Under 60 kg	117	5,9829	18,84235	-2,378	,043
	Over 60 kg	435	11,3241	22,23965	-2,615	

Table-3. Descriptive statistics and p values of the pre and post PAP scores of the Healthy Lifestyle Behaviors Scale-II subscales

	N	$\bar{X}$	Ss	t	p
Pre health responsibility	552	21,8768	5,03700	10,759	,000
Post health responsibility	552	24,2536	5,34245		
Pre physical activity	552	17,9692	4,84580	14,944	,000
Post physical activity	552	21,3098	4,76337		
Pre nutrition	552	22,6975	4,15806	-6,522	,000
Post nutrition	552	23,9764	4,27772		
Pre spiritual development	552	27,4891	4,38566	-,44906	,000
Post spiritual development	552	28,3152	4,43160		
Pre interpersonal relationships	552	26,5525	4,16067	-4,419	,000
Pre interpersonal relationships	552	27,4167	4,44367		
Pre stress management	552	19,8587	4,03815	-8,230	,000
Post stress management	552	21,3641	4,27881		
Pre total	552	136,4438	20,96407	-11,056	,000
Post total	552	146,6359	22,75259		

Table 3 shows a significant difference between the subscales of healthy lifestyle behaviors scale between pre-test and post-test ($p < 0.05$).

When Table 2 is examined, a difference was found between the variables under 60 kg and over 60 kg in the total scores, with the subscales of healthy lifestyle behaviors and health responsibility, nutrition, and stress management of women participating in physical activities ($p < 0.05$).

It was determined that women over 60 kg (11.32 ± 22.23) who participated in physical activities had a higher mean score of healthy lifestyle behaviors than women under 60 kg (5.98 ± 18.84) ($p < 0.05$)

According to the averages, it was determined that women over 60 kg (2.56 ± 5.35) have a higher mean score of health responsibilities than women under 60 kg (1.69 ± 4.48) ($p <0.05$).

There was no statistically significant difference between women under 60 kg and over 60 kg in the physical activity subscale ($p > 0.05$).

When the nutrition subscale was examined, it was found that women under 60 kilograms (.675 ± 3.75) had lower mean scores than women over 60 kilograms (1.44 ± 4.80) ($p < 0.05$).

In the spiritual development subscale, there was no statistically significant difference between women under 60 and over 60 kg ($p > 0.05$).

No statistically significant difference was found between women under 60 kg and over 60 kg in terms of interpersonal relationships scores ($p > 0.05$).

It was found that women over 60 kg (1.73 ± 4.43), who participated in physical activities, had a higher average score of stress management than women under 60 kg (.666 ± 3.63) ($p <0.05$).

Considering their reaction to physical activity from the point of view of the HLBS II, PAP increased the healthy lifestyle scores of the participants over 60 kg and contributed to their awareness.

It was found that the post health responsibility (24.25 ± 5.34) behaviors of women participating in physical activities had a higher mean score than pre health responsibility (21.87 ± 5.03) behaviors ($p <0.05$). The post physical activity (21.30 ± 4.76) behaviors had a higher mean score than the pre physical activity (17.96 ± 4.84) behaviors ($p < 0.05$).

It was found that the post nutrition (23.97 ± 4.27) behaviors had a higher mean score than the pre nutrition (22.69 ± 4.15) behaviors ($p < 0.05$).

It was found that the post spiritual development (28.31 ± 4.43) behaviors had a higher mean score than the

pre spiritual development (27.48 ± 4.38) behaviors ($p < 0.05$).

It was found that post stress management (21.36 ± 4.27) behaviors had a higher mean score than pre stress management (19.85 ± 4.03) behaviors ($p < 0.05$).

Lastly, it was determined that the total post-test (146.63 ± 22.75) scores of the scale have higher mean scores than the total pre-test total scores (136.44 ± 20.96) ($p < 0.05$).

DISCUSSION

According to Maslow's "hierarchy of needs" theory, human tries to provide the most important needs in order of priority. These requirements are as follows: physical needs (food, water, shelter), need for security (safety, protection, health), social needs (feeling of belonging to a community, love), need for respect (being counted in society, social status), and the need to put forward personal interests, ideas, and ideals. When it meets the requirement at each level, it moves on to the next requirement. We cannot expect a starving person to be interested in environmental health or the latest developments in classical music. However, in order to provide all these efficiently, a person must have a healthy and medically good quality of life. This is the reason why we studied the perception of the quality of life of HWs, who represent a high number in our society and have a direct impact on their children and other family members, in terms of health.

Chronologically, we see that the concept of "Quality of Life (QoL)," in terms of sociological and health, dates back to ancient times. Aristotle, one of the first known philosophers in the world, has focused in his writings on the nature of happiness in order to live a good life and mentioned many facts that are necessary for people in this regard[14,15]. According to many philosophers after Aristotle, the main purpose of living is to have the highest quality of life and to be in the most comfortable and healthy condition according to chronological age. In terms of medical history, even in Hippocrates era, the earliest days of QoL medicine, physicians were taught to take the initiative in treating patients and relieving their complaints, as well as maximizing good quality of life[14,16]. However, QoL as a phrase was first used in Priestley's play named "Daylight on Saturday" in 1943[14,17]. After the World Health Organization (WHO) defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" in 1946, interest in the concept of "QoL" has increased considerably in recent years[14,18,19]. However, considering the sources about health, the term QoL was found in Long's article "On the Quantity and Quality of Life," which was published in 1960[14,20]. If it is necessary to make a definition of healthy QoL, based on widely accepted, we can define it as "the evaluation of the effects of the disease and its treatment on the patient from the point of the patient". The most important point to be emphasized here again is that while obtaining these study data, our reference source must be the people themselves[14]. Therefore, in our study, in order to investigate the effects of physical activities on healthy living behaviors of mothers participating in the "Kocaeli Mother City" project, we applied the HLBS II to those mothers themselves with the idea that we will get the best information from them. We learned their healthy lifestyle habits and investigated the effect of physical activity on their (healthy) lifestyles with the second application.

A healthy lifestyle is defined as controlling all behaviors that affect an individual's health, and choosing behaviors appropriate to his or her health status in regulating their daily activities. Considering healthy lifestyle behaviors, they include regular active life and exercise, careful eating, avoiding habits such as smoking and alcohol, taking responsibility in case of illness, less stress, and hygiene-cleanliness measures[1,21]. This is valid for all ages[22]. One of the most important ways to preserve health in physical, emotional, and psychological terms is sports. It is a scientifically proven that it is possible to maintain good health with sports. It is necessary to show the need of exercising as a necessity in order to get rid of all adverse conditions and to keep the organism fit and healthy[11]. Based on this, we studied to investigate the effects of physical activities applied to mothers participating in the Kocaeli Mother City project on healthy living behaviors of mothers. Studies in both health and sociological fields have started to attach great importance to the evaluation and examination of QoL in humans.

Altay et al. (2016) used the World Health Organization's Quality of Life Scale (WHOQOL-OLD) to determine QoL in their study titled "Health perception of the elderly, quality of life and factors affecting health-related quality of life[22]." In our study, we also used WHO's quality-of-life scale (WHOQOL-OLD) to determine QoL. In the same study, the quality of life of the participants was evaluated especially with regard to the family relationships, sensory subscale, autonomy, past-present-future activities, social participation, and intimacy sub-dimensions, and the results that these parameters were effective in terms of the participants' life perspectives were found to be significant[22]. This result confirmed the choose housewives as the sample group in our study because their quality of life can be affected the most in terms of their family relationships, sensory subscale, autonomy, past-present-future activities, social participation and closeness sub-dimension. In our results, it is seen that PAP can make a positive difference in the healthy-living perceptions of housewives ($p<0.05$) (Table-3).

In the literature review, it was seen that HLBS studies were conducted for different age and education groups[23,24,25]. They showed that, as a result of their research to determine the healthy lifestyle attitudes of students studying in health departments, physical activity positively affected HLBS sub-scales. Considering that physical activity changes the perception of a healthy lifestyle even of university students studying in health departments, it has been ensured that the HLBS scores of participants of our study, HWs are affected positively ($p < 0.05$). As a result, it has been determined that activities such as PAP could increase HLBS scores of HWs who do not have much social environments. It has been determined that HWs can have psychologically healthier perspective on healthy living with weight loss and the contribution of exercise in physical and socialization terms.

As a result of the study in which Özer (2018) investigated the healthy lifestyle behaviors and physical activity status as well as weight-loss methods of adults, it

was found that as the level of participation in physical activity increased, the mean scores of healthy lifestyle behaviors also increased[26]. He emphasized that participation in physical activity is a part of healthy life. According to the results of the study of Sahin (2018) examining the frequency of obesity, healthy lifestyle behaviors and physical activity level of women aged between 15 and 49 in Adiyaman city center, 75.5% of women were found to be inactive, and 23.8% were at low activity level[27]. Moreover, it was found that education level and frequency of doing physical activity were directly proportional and that unmarried women had higher physical activity continuity than married women did. The same study also determined that women had the highest score in the interpersonal support sub-scale, which is among the subcomponents of healthy lifestyle behaviors of women, and the lowest score in the physical activity sub-scale. Analyzing the healthy lifestyle behaviors of high-school 12th-grade students, Atac M. et al. (2016) used a sampled personal information form and a HLBS with 160 people[28]. As a result, students' healthy lifestyles were found to be at a medium level, health responsibility sub-scale and physical activity sub-scale scores were determined as the the lowest. For students who have healthy lifestyle behaviors, it has been determined that their families have a good economic status, they live in the district, and have student friends with a health-related profession in their environment. Their study concluded that the healthy lifestyle behaviors of the students were not at the expected level. In order to raise the awareness of high-school students, it was emphasized that healthy lifestyle behaviors should be programmed as education and applied practically. As it is seen, there are studies stating that physical activity affects the perception of healthy lifestyle according to different variables. In our study, the perceptions of healthy lifestyle before and after PAP were compared by weight (over 60 kg and below 60 kg), which is one of the different variables in terms of HLBS scores compared. As a result, a statistically significant difference was found in some sub-scales of perceptions of healthy lifestyle before and after PAP according to the weight status of participants, which were different variables in terms of HLBS scores (Table-2). This has shown us that weight affects health both physically and psychologically.

Kocoğlu and Akın (2009) stated in their study titled "The Relationship of Socio-economic Inequalities with Healthy Lifestyle Behaviors and Quality of Life" that even small social differences have an effect on the perception of quality of life[29]. In the same study, the evaluation made for the summary scores of the physical and mental health components of the quality-of-life scale for the 54-65 age group, women, primary school graduates, widowed people, whose place of birth and the place where they lived most of their lives were villages, the number of people living in the household was 5-7 people, and the averages of those with 2-3 rooms in the house, are lower than the the summary scores of the scale of other groups[29]. When the relationship between the physical and mental health summary scores and their monthly income was evaluated, the difference was found to be statistically significant for all groups[29]. As seen in this study, it has been observed that, socioeconomically, even the number of rooms lived in affects the quality of healthy life[29]. The fact that small social differences change people's perception of quality of life has led us to conduct such a study on housewives, who constitute a very large population in our society.

CONCLUSION

In our study, although physical activities that can bring a difference to the lives of housewives seem small, a significant difference was found between the scores before and after PAP ($p<0.05$). This difference has shown that housewives participating in PAP improve their sense of healthy lifestyle towards life. It is thought that housewives will start to think that they are healthier after PAP and they can reflect this to their family members with whom they are in close communication. In addition, it has been observed that PAP-type activities specially applied to HWs can increase their ability to cope with health problems and enable them to adapt faster and be more inclined to healthy lifestyle changes.

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