

EVALUATION OF THE RELATION BETWEEN PHYSICAL ACTIVITY AND QUALITY OF LIFE IN TERMS OF THE SUSTAINABLE DEVELOPMENT: SAMPLE OF ANTALYA AND OSMANIYE PUBLIC EDUCATION CENTERS*

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ABSTRACT

Physical activity has positive impacts on the human health which leads to sustainable quality of life. This study aims to examine the relationship between the physical activity status of individuals and quality of life of people living in two different cities having different level of development. This research is designed with descriptive and quantitative basis and sampling of this research consists of a total of 1225 numbers of course attendees which were volunteers to attend to this research. Based on the results of this research, it is found out that there is no difference in the physical activity levels of the two cities and the individuals of both cities are having low level of physical activity. It is also revealed that the scores of quality of life in Antalya is higher in comparison with Osmaniye. In conclusion, in order to develop a sustainable human health, there should be established a physically more active society and a style of a physically active life should be adopted by the people. It should also be noted that the economical and social development can create a positive difference in the quality of life and accordingly, this will positively affect the future of sustainable development.

Keywords: Physical activity, quality of life, sustainable development.

FİZİKSEL AKTİVİTE VE YAŞAM KALİTESİ ARASINDAKİ İLİŞKİNİN SÜRDÜRÜLEBİLİR KALKINMA AÇISINDAN DEĞERLENDİRİLMESİ: ANTALYA VE OSMANIYE HALK EĞİTİMİ MERKEZLERİ ÖRNEĞİ

Öz

Fiziksel aktivitenin sürdürülebilir yaşam kalitesine yol açan insan sağlığı üzerinde olumlu etkileri vardır. Bu çalışma, gelişmişlik düzeyi iki farklı ilde yaşayanların fiziksel aktivite durumları ile yaşam kaliteleri arasındaki ilişkinin belirlenmesini amaçlamıştır. Betimsel olarak nicel tasarlanan bu çalışmanın örneklemini, Halk Eğitimi Merkezlerine devam eden ve çalışmaya gönüllü olarak katılan toplam 1225 kursiyer oluşturmuştur. Çalışmanın bulgularına göre; iller arasında fiziksel aktivite düzeylerinde fark olmadığı ancak, her iki ildeki bireylerin az aktif düzeyde fiziksel aktivite yaptıkları görülmüştür. Antalya ilindeki yaşam kalitesi puanlarının daha yüksek olduğu belirlenmiştir. Sonuç olarak, insan sağlığının sürdürülebilir olması için fiziksel olarak daha aktif bir toplum yaratılması ve insanlara aktif yaşam tarzının benimsenmesi gereklidir. Ekonomik ve sosyal gelişmişliğin yaşam kalitesinde fark yaratabileceği, dolayısıyla sürdürülebilir kalkınmanın geleceğine olumlu katkılar sunacağı ifade edilebilir.

Anahtar Kelimeler: Fiziksel aktivite, yaşam kalitesi, sürdürülebilir kalkınma.

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INTRODUCTION

Limitations of physical mobility that are stemmed from industrialization and urbanization are the basis for the emergence of the illnesses by adversely affecting human health. Sedentary lifestyle is a concept that describes the inactive life which also affects the quality of life expressed as the feeling that the life continues well in its entirety. In the societies which are formed by the people with inactive and low quality of life, not only the sustainability of human health is in danger but also that brings extra burden to the economy of the countries formed by subject societies.

Health status of individuals is determined by many factors which are thought to be either unalterable or alterable and avoidable. Factors which are alterable and avoidable effects on health are personal lifestyles, social and community networks, socio-economic, cultural and environmental conditions⁴⁷. Lifestyles of the people is one of the alterable factors and it can be arranged to increase physical activity, accordingly, it can make a healing effect on inactivity and hence quality of life.

According to the World Health Organization, one third of adults are insufficiently active and physical inactivity is the fourth leading risk for global mortality. Accordingly, WHO Member States agreed to reduce physical inactivity by 10% by 2025 in the framework of the "Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020"⁴⁹. Data in Turkey also reveals a deficiency of physical activity. According to "Chronic Diseases Risk Factors Survey" which was conducted by the Sustainable development is a process that generates the foreground to use today's resources, so as not to deprive future generations and has economic, social, ecological and political dimensions^{9,30,43,44}. In this regard, the United Nations Conference on the Human Environment held in Stockholm in 1972 is a milestone in terms of sustainable development^{11,18}.

Ministry of Health in 2011: 87% of women and 77% of men do not perform sufficient physical activity. This situation reveals that sedentary lifestyle is a serious issue for Turkey¹⁰.

Physical activity is defined as any voluntary movement of body that makes our muscles work and requires more energy than resting^{12,36,38,41}. Lack of physical activity strengthens the causes of becoming overweight and obesity. Sufficient physical activity is an effective form of health-related behavior for rehabilitation, treatment and prevention of chronic diseases³⁷. Regular physical activity is seen as a solution for society that is unhealthy, unhappy and has a low quality of life. Studies demonstrate that hypertension, obesity, chronic back pain^{2,6}, heart attack^{2,35}, diabetes^{2,28} and some types of cancer² are reduced by high level of physical activity in adults. Physical activity reduces the risk of obesity, type 2 diabetes, cardiovascular diseases, cancer and osteoporosis^{7,52} and preventive role of it from chronic diseases has been proven^{2,4,27,33}.

Physical activity is an important aspect affecting the quality of life that has been revealed by scientific researches^{13,16,23,25,26,29,39}. WHO defines Quality of Life, as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns⁴⁸.

All kinds of efforts to increase the quality of life is associated with development. The concept of development implies an increase in the quality of life³. However, the ultimate goal of development is to improve the human conditions universally⁴⁰.

Different indicators are used to determine to what extent sustainable development has been realized²⁴. One of these indicators is health. Health is not only the absence of disease or disability but also it is expressed as a complete wellbeing physically, mentally and socially⁵⁰, thus it has an important position in terms of sustainable development. Therefore

investing in health can be used as an important tool for accelerating development and health is seen as an economic development tool⁸. Whilst it is not possible to clearly measure, it is a fact that health has a very significant impact on amount of labor and labor productivity.

It is put forward by some authors that health is the most essential component for the creation of a developed society and sustainable development, is nothing other than a healthier society⁸. Health is seen as the fundamental component, looking at the conceptual framework of sustainable development³⁴.

We know today that physical inactivity is also an important determinant of poor quality of life as well as cardiovascular diseases, diabetes, obesity, some cancers, poor skeletal health, some aspects of mental health and natural death¹⁷. High level of health provides important contributions to operate the resources that were previously unused, shift the resources to be allocated from

MATERIALS AND METHODS

Materials

Survey form was used as data collection tool that has three sections and consists of a total of 52 questions. The first part is intended to define the personal characteristics of the participants. The second section contains IPAQ-Short Form evaluating the quality of life with particular emphasis on physical, social and spiritual components of health without focus on a specific age and disease group⁴⁶.

All of the α values belong to Antalya and Osmaniye province were calculated for the eight subscales and two summary scales of the SF-36 that have been found sufficiently reliable in the range of $0,60 \leq \alpha < 0,80$ and highly reliable in the range of $0,80 \leq \alpha < 1,00$.

Methods

Our research is a descriptive and quantitative study that aims to determine the physical activity level of individuals and quality of life of people living in two

health to other areas which produce goods and services, the accumulation of human capital and hence economic growth¹⁴.

This study aims to determine the quality of life and physical activity levels in two different provinces having different levels of development. This study was carried out to bring up the thought to agenda that the sustainability of human health may be associated with physical activity and quality of life and this situation can be addressed in the context of sustainable development. Under this purpose, it is thought that this study by analysing the information obtained from the data about the relationship between physical activity participation and quality of life of individuals who attend the courses of the public education center in Antalya province with a high level of prosperity and Osmaniye province with a lower level of prosperity can contribute to improve physical activity and quality of life and can help to associate the analysed data with sustainable development.

in which there are seven questions in order to find the types of physical activity that people do as part of their daily lives (International Physical Activity Questionnaire^{19,20,21}. In the third section, the form, SF-36 is used that is quality of life questionnaire short form

different cities having different level of development.

The population of the research consists of a total of 104473 individuals who participated in the courses of public education center (PEC) in the central districts of Osmaniye and Antalya province in 2015. The sample of the research consists of a total of 1225 numbers of course attendees of 916 numbers from Antalya and 309 numbers from Osmaniye Public Education Centers which were volunteers to attend to this research.

Normality tests which were done for physical activity and quality of life scales show that the data are not normally distributed. Because all test results are $p < 0.01$ and $p < 0.001$. These data requires nonparametric tests, therefore in order to compare two groups, Mann-Whitney U test was used and in order to compare more than two groups, the Kruskal-Wallis H test was used⁵¹. The results of the analysis have been interpreted in line with the medians. Chi-square analysis method was used in analysis to determine physical activity levels according to provinces.

Population and sample of this study have been identified as individuals who participated in courses in public education centers due to the importance of the PECs in the development. In relation to physical activity, special attention paid to the parameters of time that spent on vigorous physical activity, moderate physical activity and on foot are not more than 16 hours. The time that spent with sitting and physical activity at least 10 minutes at once has been evaluated. Answers were regarded as zero below this limit^{20,21}.

RESULTS

It was determined that 74.8% of the individuals participated from Antalya and 25.2% of the individuals participated from Osmaniye in the study.

Table 1. Comparison of physical activity levels between Antalya and Osmaniye provinces

Physical Activity	Antalya		Osmaniye	
	f	%	f	%
Inactive	214	23.4	56	18.1
Minimally Active	387	42.2	150	48.6
HEPA Active	315	34.4	103	33.3
TOTAL	916	100.0	309	100.0

($X^2=5,042$; $p=0,080$)

Chi-square test result analysis which was made to compare the values of physical activity by provinces shows that there is not a difference between physical activity levels by provinces ($p > 0,05$). 387 people

which constitute 42,2% of 916 participants in Antalya and 150 people which constitute 48,6% of 309 participants in Osmaniye do physical activity at minimum active level.

Table 2. Comparison of quality of life scores between Antalya and Osmaniye provinces (Mann-Whitney U test analysis results)

Quality of Life	Provinces	Mean Rank	Median	Z	p
Physical functioning	Antalya	627.46	80.00	-2.476	0.013 [*]
	Osmaniye	570.14	75.00		
Role limitations due to physical health	Antalya	637.12	87.50	-4.368	0.000 ^{***}
	Osmaniye	541.50	75.00		
Pain	Antalya	640.11	77.50	-4.647	0.000 ^{***}
	Osmaniye	532.64	65.00		
General health	Antalya	627.92	60.00	-2.548	0.011 [*]
	Osmaniye	568.78	60.00		
Physical Health	Antalya	642.04	73.75	-4.947	0.000 ^{***}
	Osmaniye	526.92	64.38		
Role limitations due to emotional problems	Antalya	632.06	100.00	-3.494	0.000 ^{***}
	Osmaniye	556.51	66.67		
Energy/ fatigue	Antalya	630.54	55.00	-2.999	0.003 ^{**}
	Osmaniye	561.01	55.00		
Emotional well being	Antalya	620.56	64.00	-1.291	0.197
	Osmaniye	590.58	64.00		
Social functioning	Antalya	637.57	75.00	-4.245	0.000 ^{***}
	Osmaniye	540.16	62.50		
Mental Health	Antalya	638.42	68.15	-4.331	0.000 ^{***}
	Osmaniye	537.64	61.71		

^{*}: $p < 0,05$; ^{**}: $p < 0,01$; ^{***}: $p < 0,001$

There is statistically no significant difference in terms of emotional well-being between Antalya and Osmaniye when the quality of life subscales and the summary scales were analyzed according to the provinces ($p>0,05$). There is statistically significant difference when Antalya and Osmaniye are compared in terms of quality of life;

physical functioning ($p<0,05$), role limitations due to physical health ($p<0,001$), pain ($p<0,001$), general health ($p<0,05$), physical health ($p<0,001$), role limitations due to emotional problems ($p<0,001$), energy/fatigue ($p<0,01$), social functioning ($p<0,001$), mental health ($p<0,001$) in Table 2.

Table 3. Comparison of physical activity levels and quality of life scores in Antalya (Kruskal-Wallis H test analysis results)

Quality of Life	Physical Activity Level	Mean Rank	Median	X ²	p
Physical functioning	Inactive	402.98	80.00	20.989	0.000***
	Minimally Active	449.46	80.00		
	HEPA Active	507.65	87.50		
Role limitations due to physical health	Inactive	427.13	75.00	5.394	0.067
	Minimally Active	475.75	100.00		
	HEPA Active	458.71	87.50		
Pain	Inactive	416.70	67.50	9.554	0.008**
	Minimally Active	457.37	77.50		
	HEPA Active	488.51	77.50		
General health	Inactive	391.11	55.00	24.005	0.000***
	Minimally Active	457.79	60.00		
	HEPA Active	505.51	65.00		
Physical Health	Inactive	395.90	70.95	20.023	0.000***
	Minimally Active	459.05	75.48		
	HEPA Active	500.68	78.21		
Role limitations due to emotional problems	Inactive	450.08	100.00	2.289	0.318
	Minimally Active	472.62	100.00		
	HEPA Active	446.86	100.00		
Energy/ fatigue	Inactive	390.46	50.00	21.951	0.000***
	Minimally Active	463.29	60.00		
	HEPA Active	499.18	60.00		
Emotional well being	Inactive	433.74	64.00	3.584	0.167
	Minimally Active	456.63	64.00		
	HEPA Active	477.76	68.00		
Social functioning	Inactive	434.09	75.00	3.268	0.195
	Minimally Active	473.92	75.00		
	HEPA Active	456.20	75.00		
Mental Health	Inactive	421.75	63.57	5.423	0.066
	Minimally Active	470.09	66.79		
	HEPA Active	469.38	66.07		

** : $p<0,01$; *** : $p<0,001$

There is statistically no significant difference in terms of role limitations due to physical health, role limitations due to emotional problems, emotional well being, social functioning and mental health according to physical activity level when the relationship between physical

activity levels and quality of life in Antalya is examined according to the Table 3 ($p>0,05$). There is statistically significant difference in terms of physical functioning ($p<0,001$), pain ($p<0,01$), general health ($p<0,001$), physical health ($p<0,001$) and energy/fatigue ($p<0,001$).

Table 4. Comparison of physical activity levels and quality of life scores in Osmaniye (Kruskal-Wallis H test analysis results)

Quality of Life	Physical Activity Level	Mean Rank	Median	X ²	p
Physical functioning	Inactive	129.87	62.50	5.727	0.057
	Minimally Active	158.15	75.00		
	HEPA Active	164.07	80.00		
Role limitations due to physical health	Inactive	149.26	50.00	6.835	0.033*
	Minimally Active	167.72	75.00		
	HEPA Active	139.60	50.00		
Pain	Inactive	167.91	67.50	2.822	0.244
	Minimally Active	157.58	67.50		
	HEPA Active	144.22	57.50		
General health	Inactive	128.32	50.00	7.981	0.018*
	Minimally Active	154.60	60.00		
	HEPA Active	170.08	60.00		
Physical Health	Inactive	135.59	60.71	3.473	0.176
	Minimally Active	161.60	68.33		
	HEPA Active	155.95	69.52		
Role limitations due to emotional problems	Inactive	148.30	50.00	0.707	0.702
	Minimally Active	158.84	66.67		
	HEPA Active	153.05	66.67		
Energy/ fatigue	Inactive	124.37	50.00	12.174	0.002**
	Minimally Active	152.42	55.00		
	HEPA Active	175.42	60.00		
Emotional well being	Inactive	128.60	54.00	6.310	0.043*
	Minimally Active	158.27	64.00		
	HEPA Active	164.59	64.00		
Social Functioning	Inactive	149.58	62.50	1.784	0.410
	Minimally Active	161.88	62.50		
	HEPA Active	147.93	62.50		
Mental Health	Inactive	133.22	53.93	4.087	0.130
	Minimally Active	159.10	62.14		
	HEPA Active	160.86	61.79		

*: p<0,05; **: p<0,01

There is statistically no significant difference in terms of physical functioning, pain, physical health, role limitations due to emotional problems, social functioning and mental health when the relation between physical activity levels and quality of life in Osmaniye is

DISCUSSION

Physical activity which is an integral part of human health and social life and albeit indirectly it can be considered as a factor affecting the country's economy. Health problems might be more in societies that have low physical activity and the reflection of this situation will be inevitable. According to certain criteria in the provincial development index Antalya is located in the front rows whereas Osmaniye is located in the back rows¹⁵.

examined according to the Table 4 (p>0,05). There is statistically significant difference in terms of role limitations due to physical health (p<0,05), general health (p<0,05), energy/fatigue (p<0,01), emotional well being (p<0,05).

on both health expenditures and work efficiency. Physical activity contributes in a good way to people with health problems and its effect on quality of life has been revealed by studies. In this context, it should constitute an important dimension of investments by the states in order to create a healthy society. Based on this information revealing the differences between Antalya and Osmaniye, it was estimated in the results of the analysis that this difference can

also lead to a difference between levels of physical activity. However this estimate is not statistically supported and it is revealed that there is no significant difference between the two provinces. It was found that minimally active group has the highest percentage and inactive group has the lowest percentage. The similarity between physical activity levels of Antalya and Osmaniye can be connected to works based on physical strength in the less developed places and to the quest for physical activity in more developed places. Many works/activities including transportation are fulfilled physically in less developed places and people can tend to the physical activity as a discharge means in environments that technological facilities are more intense and mental fatigue is more than physical fatigue. These may be the causes of the emergence of similar levels of physical activity between the two cities.

In our study, when the two provinces with different levels of development are compared, the differences have been identified in terms of quality of life for all sub-dimensions that form the physical health and all sub-dimensions that form the mental health except emotional well-being. When looked through quality of life scores of Antalya and Osmaniye, it was observed that Antalya's quality of life scores are higher than Osmaniye's quality of life scores.

Countries with high growth rates may not have high human development and high quality of life which means the improvement of the conditions to live longer, healthy and complete. And a human-centered mindset is necessary to carry out the sustainable development within the framework of a development concept that is understood as the improvement of people's lives for improvement of social, political and cultural conditions in development⁴². At this point, the lack of difference in terms of physical activity levels, whilst Antalya's quality of life is higher than Osmaniye's quality of life, does not change the truth that creating a physically active society

can be used for the realization of sustainable development in both developed and developing regions.

Differences were determined in other dimensions of physical health except role limitations due to physical health and in only energy/fatigue of the mental health dimensions when analyzing the quality of life subscales according to the level of physical activity in Antalya. Sufficient individuals of physical activity level have the highest quality of life in dimension of physical function of quality of life. Inactive individuals of physical activity level have the lowest quality of life in dimension of energy/fatigue of quality of life. Inactive individuals have the lowest quality of life in the dimension of pain of quality of life. It was determined that sufficient people of physical activity level have the highest quality of life whereas inactive people have the lowest quality of life in dimension of general health. Sufficient people of physical activity level have the highest quality of life whereas inactive people have the lowest quality of life in the physical health dimension. It can be expressed that having adequate physical activity levels leads to an increase in quality of life scores and not to be physically active reduces quality of life scores when considering statistically significant differences between physical activity level and quality of life dimensions.

When the quality of life subscales according to the level of physical activity in Osmaniye was analyzed, differences were found out; in role limitations due to physical health and general health of the physical health dimensions and in energy/fatigue and emotional well being of the mental health dimensions. Inactive and HEPA active people's quality of life were found to be low in role limitations due to physical health of the quality of life dimensions. Sufficient people of physical activity level have the highest quality of life whereas inactive individuals have the lowest quality of life in energy/fatigue dimension of quality of life. Inactive individuals have the lowest quality of life

in the dimension of emotional well being of quality of life. Inactive individuals have also the lowest quality of life in the dimension of general health of quality of life. It can be argued that physical inactivity reduces the quality of life when considering statistically significant differences between physical activity level and quality of life dimensions.

Papavassiliou (2010) suggested that exercise improves physical, emotional, mental and spiritual awareness and thus it contributes to maintaining a quality life. In the study examining the relationship between special fields of physical activity and health-related quality of life, Pedišić, Rakovac, Titze, Jurakić and Oja (2014) revealed that there is a positive relationship among health-related quality

CONCLUSION

To make the physical activity sustainable which has positive effects on human health and hence the quality of life, it is required to invest for people with these dimensions. Knowledge of the current facts and conditions will allow investment to be made more rational.

The findings of this study aiming to introduce the conditions in the provinces with different levels of development show

The aspect of sustainability in this study has not been achieved using a measurable tool by researchers. Researchers who have the opportunity to examine this subject are suggested that sustainable development investigation shall be carried out in a measurable manner together with all health components.

As the last word; it can be said that physical activity can be a positive

of life and leisure, domestic, and transport-related physical activity. İlhan (2011), in his study, investigated the relationship between quality of life and sports in individuals with vision loss and determined that all subscale scores of the SF-36 are higher for individuals who play sports. Birtane et al. (2000) has determined that activity levels have a decisive role in the quality of life in the study examining the factors affecting quality of life in Edirne Nursing Home. It was determined that the level of mobility affects quality of life and concluded that quality of life is also low if mobility level is low in another study examining the factors affecting quality of life in the elderly living at home¹.

us that people are minimally active in both provinces.

Another finding of the study is that Antalya's quality of life is higher than Osmaniye's quality of life. Recreation activities which is a tool in the creation of a high quality of life in society should be included in lifelong learning by disseminating through local governments, education, health and all kinds of private and state institutions.

contribution to health and being healthy can be a positive contribution to the quality of life and sustainable development. Physical activity and quality of life have mutually reinforcing effects with sustainable development. Because health is a precondition, an indicator and a consequence of sustainable development⁴⁵.

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