Changes in physical activity among adults in Türkiye

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Abstract

Background: Physical inactivity is a significant public health problem and a contributor to noncommunicable disease and worsening health status. It causes morbidity and an estimated 6–10% of premature deaths globally.

Aim: To investigate changes in physical activity among adults in Türkiye between 2014 and 2023 and the factors that influenced the changes.

Methods: Two cross-sectional studies were conducted in 2014 (N = 1228) and 2023 (N = 1517) on the same population of adults aged 25–64 years, using the same methodology. The data were analysed using SPSS 24.0. The relationship between variables believed to influence physical activity and the changes in variables within the groups over the years were assessed using the χ^2 test. $P < 0.005$ was considered significant.

Results: The mean age of participants was 41.25 ± 12.06 years, 51.4% of them were female, 70.8% were married, and 72.2% had children. The mean total metabolic equivalent of the task score was 2285 in 2014 and 2288 in 2023 ($P = 0.984$). There was no significant change in physical activity over the years and the inactivity rate had increased from 37.3% in 2014 to 39.9% by 2023 ($P = 0.222$). In 2023, men were 1.91 times more active than women ($P < 0.001$). There were differences in the level of physical activity across the age groups; older individuals were more inactive. The mean body mass index did not change over the years ($P = 0.09$).

Conclusion: The results show no significant change in the level of physical activity and prevalence of obesity among adults aged 25–64 years in Türkiye between 2014 and 2023. This indicates that the campaigns conducted by the Ministry of Health alone were not sufficient to increase physical activity among the study population. We recommend more intensive community level campaigns that could result in increased physical activity, with greater attention on women and older people.

Keywords: physical activity, exercise, sedentary behaviour, inactivity, body mass index, obesity, noncommunicable disease, Türkiye

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Introduction

Physical activity can be defined as any bodily movement that increases heart and respiratory rates, engages muscles and joints, and leads to energy dissipation. This encompasses sports activities, exercise and various movements performed throughout the day. Opportunities for physical activity are ubiquitous in daily life (*1*). According to WHO, health is not merely the absence of illness or disability but a state of complete physical, social and mental well-being, and physical activity is beneficial to all these aspects (*2*). Regular physical activity offers numerous health benefits, including reduced prevalence and mortality of various diseases, as well as opportunities for social interaction (*3,4*).

Physical inactivity is a major contributor to the etiology of noncommunicable diseases (NCDs), leading to > 36 million deaths annually, with 14 million of these occurring between 30 and 70 years of age (*5*). Evidence from the 2019 Global Burden of Disease study confirms that physical inactivity is a significant risk factor for NCDs worldwide (*6,7*). Physical inactivity is estimated to contribute to 6–10% of premature deaths (*8*).

Currently, human physical activity levels are inadequate due to several reasons, such as overpopulation; shifting population from rural to urban areas; increased poverty resulting from inequality in income distribution; decreasing air quality; increased number of desk jobs and screen exposure; and insufficient areas suitable for physical activity (*9*). Therefore, promotion of regular physical activity at all ages, particularly among young adults, is a crucial public health priority. To implement effective prevention programmes for NCDs, it is essential to assess people's physical activity levels and preferences. In 2011, heads of states and governments from around the world gathered at the United Nations and committed to establishing multisectoral policies and plans for the prevention and control of NCDs by 2013. To fulfil these commitments, the World Health Assembly approved the Global Action Plan for 2013–2020: a roadmap for 9 global NCD targets, including a 25% reduction in deaths from NCDs by 2025 (*5*).

In Türkiye, NCDs were not explicitly included in national development plans in previous years but they were included in the 10th National Development Plan (2019–2023) (*10*). On 27 June 2012, the Movement to Fight Obesity campaign was launched in Türkiye with 2 public service advertisements on television, posters and brochures (*11*). WHO designated 10 May 2002 as Move for Health Day to raise public awareness about the benefits of physical activity in preventing NCDs and to encourage increased participation in physical activity (*12*).

Population-based studies demonstrating the changes in physical activity patterns over time are essential for assessing the effectiveness of global and national campaigns. This study was conducted to assess the changes in community-based physical activity between 2014 and 2023 among adults in Türkiye, taking into account all the measures implemented and factors influencing this change.

Methods

Study design

After the physical activity campaigns, data were collected for the initial study in 2014 to evaluate the extent of physical activity and its influencing factors. In the second study in 2023, data were gathered using the same methodology to assess the influence of physical activity programmes on the population a decade after their initiation. These campaigns commenced in 2012 and were conducted through various channels such as television, posters and brochures. Additionally, the Turkish Ministry of Health organized activities in the form of walking campaigns, and published a physical activity guide in 2014. These programmes continued intermittently with comparable activities. The absence of recorded personal data in the initial study meant that subsequent data collection was not carried out on the identical cohort of participants. Instead, it was conducted within the same community, enlisting volunteers and using an identical methodology.

Study sample

Both studies were cross-sectional and involved adults aged 25–64 years. Ten family health centres in the Central Anatolian Province of Kayseri, selected through random sampling, were chosen as data collection sites. Kayseri is a significant city in Central Anatolia, where 84.3% of the population resides in urban areas. Despite the scarcity of green spaces and the influx of migrants from neighbouring provinces, public transport services are efficient, including a well-functioning rail system that spans the entire city. A bicycle loan network was initiated in 2010, to further enhance the transportation options available to residents (*13*). The proportion of adults with a high level of physical activity globally and in Turkey varied between 18.0% and 27.6% depending on the age and gender characteristics of the study group (*14, 15*).

In our study, we expected ~25% of adults to have a high level of physical activity; therefore, we calculated the sample size to be 1152, with a margin of error of 0.025 and confidence level of 95%. In both studies, all individuals who consented to participate within a 2-month period were included. The first study was conducted with 1228 participants and the second with 1517.

Data collection

The data collection tools consisted of 17 questions on some descriptive sociodemographic characteristics of adults, potential barriers to physical activity, smoking and alcohol consumption, and the short form of the International Physical Activity Questionnaire (IPAQ-SF). The questionnaire was completed by participants' self-report. After administering the questionnaire, researchers conducted weight and height measurements of the participants using a standard weight scale (Soehnle 7810, Backnang, Germany) and a standard stadiometer (Seca 217, Hamburg, Germany). Participants were asked to remove thick clothes, shoes and other accessories before the measurements were taken. Body mass index (BMI) was classified according to WHO criteria: < 18.5 underweight, 18.5–24.9 normal, 25–29.9 slightly obese, and ≥ 30 obese. The IPAQ-SF consisted of 7 questions about the length of time sitting, walking and engaged in moderately vigorous and vigorous activity. The total score was calculated by summing the duration (in minutes) and frequency (in days) of walking, moderately vigorous activity and vigorous activity. Sitting time was calculated separately from total score. For all physical activities, the criterion was that each activity was performed for ≥ 10 minutes, and the metabolic equivalent of task (MET-m/week) score was calculated from the time. Levels of physical activity were categorized as follows: (*1*) Health-enhancing physical activity (HEPA) active: performed ≥ 3 days of vigorous activity, totalling a minimum of 1500 MET-min/week, and ≥ 7 days of walking, moderately vigorous activity, or vigorous activity, totalling a minimum of 3000 MET-min/week. (*2*) Minimally active: ≥ 3 days of vigorous physical activity for ≥ 20 minutes, ≥ 5 days of moderately vigorous activity or walking for ≥ 30 minutes per day, and ≥ 5 days of walking and moderately vigorous activity, totalling a minimum of 600 MET-min/week. (*3*) Inactive: individuals outside the above classifications.

Ethical approval

Ethical approval was obtained from Erciyes University Ethics Committee (29.03.2023/219) and the procedures followed were in accordance with the Declaration of Helsinki. The participants were given detailed information about the study and were assured of the confidentiality of their responses. Verbal informed consent was obtained from the participants.

Statistical analysis

Data were analysed using SPSS 24.0. Frequency tables were presented as numbers and percentages. After physical activity classification, the relationship between variables believed to influence physical activity was assessed using the χ^2 test. The changes in the variables within the groups over the years

were re-evaluated using the χ^2 test. After identifying the variables that were significant in the χ^2 test, we constructed a multiple logistic regression model for further analysis, considering the variables that were believed to influence physical activity. For the model, the physical activity status was divided into active (HEPA active + minimal active) and inactive. The variables included in the multiple logistic regression model were: age; gender; marital status (married and other); educational status (> 12 years or ≤ 12 years of education); self-reported economic status (good, medium or low); BMI (< 25 or ≥ 25 kg/m2); smoking status (smokers or nonsmokers); having children or not; and presence or absence of chronic diseases. In the 2023 study, the same variables were added to the logistic regression model even if no significant results were obtained, to maintain the integrity of the model. Backward stepwise selection was used for the multiple logistic regression model, and variables with a significance level < 0.05 were eliminated from the model.

Results

The initial study conducted in 2014 involved 1228 participants, with a mean age of 41.25 ± 12.06 years; 51.4% were female, 70.8% were married and 72.2% had children (Table 1). The mean number of children per participant was 2.57 ± 1.19. The subsequent study in 2023 involved 1517 participants, with a mean age of 40.57 ± 12.03 years; 51.0% were female, 67.0% were married and 64.1% had children. The average number of children per participant was 2.32 ± 1.01.

In 2014, the prevalence of chronic diseases was 30.4%, with hypertension being the most common with 46.9% (Table 2). In 2023, the prevalence of chronic diseases was 25.6%, with hypertension still being the most common at 35.1%. The smoking rate was 29.6% in 2014 and remained similar at 30.0% in 2023. The mean screen time increased from 178.64 ± 131.66 minutes in 2014 to 190.14 ± 137.86 minutes in 2023. Mean BMI was 26.52 ± 4.11 in 2014 and remained similar at 26.31 ± 4.33 in 2023.

There was no significant change in physical activity categorization based on metabolic equivalent task (MET) score between the 2 studies (Table 3). The proportion of inactive participants was 37.3% in 2014 compared with 39.9% in 2023. The mean total MET score was 2285 in 2014 and 2288 in 2023.

In both 2014 and 2023, men consistently demonstrated significantly higher levels of physical activity than women (Table 4). However, a decline in physical activity was observed in both sexes between the 2 studies. In 2014, participants reported a propensity towards increased inactivity as age advanced. However, by 2023, both the 35–44 and 45–64 years age groups exhibited comparable levels of inactivity. In 2014, participants who

Table 1. Sociodemographic characteristics of the participants

Characteristic	2014 (n = 1228) n (%)	2023 (n = 1517) n (%)	Characteristic	2014 (n = 1228) n (%)	2023 (n = 1517) n (%)
Age group (yr)			***Occupation***		
25–34	445 (36.2)	561 (37.0)	Housewife	391 (31.9)	224 (14.8)
35–44	274 (22.3)	362 (23.9)	Civil servant	290 (23.6)	612 (40.3)
45–64	509 (41.5)	594 (39.1)	Employee	138 (11.2)	221 (14.6)
$\chi^2 = 1.694$, $P = 0.429$			Retired	118 (9.6)	115 (7.6)
Gender			Self-employed	143 (11.6)	178 (11.7)
Male	597 (48.6)	743 (49.0)	Other[a]	148 (12.1)	167 (11.0)
Female	631 (51.4)	774 (51.0)			
$\chi^2 = 0.036$, $P = 0.85$					
Marital status			***Economic status***[b]		
Single	256 (20.8)	432 (28.5)	Good	360 (29.3)	487 (32.1)
Married	869 (70.8)	1016 (67.0)	Moderate	714 (58.1)	905 (59.7)
Widowed/divorced	103 (8.4)	69 (4.5)	Bad	154 (12.6)	125 (8.2)
Education			***Residence***		
Illiterate	85 (6.9)	19 (1.2)	City centre	882 (71.8)	1312 (86.5)
Primary/secondary school	385 (31.4)	269 (17.7)	District	296 (24.1)	156 (10.3)
High school	376 (30.6)	318 (21.0)	Village	50 (4.1)	49 (3.2)
University	382 (31.1)	911 (60.1)	***No. of family members***		
Mean no. of children	*2.57 ± 1.19*	*2.32 ± 1.01*	≤ 4	909 (74.0)	1241 (81.8)
Mean age (years)	*41.25 ± 12.06*	*40.57 ± 12.03*	≥ 5	319 (26.0)	276 (18.2)

[a]*2014: unemployed (n = 36), work at home (with a regular salary) (n = 16), student (n = 96)*

[b]*2023: unemployed (n = 14), work at home (with a regular salary) (n = 13), student (n = 140).*

Table 2. Characteristics of participants related to lifestyle

Characteristic	2014 (n = 1228) n (%)	2023 (n = 1517) n (%)	Characteristic	2014 (n = 1228) n (%)	2023 (n = 1517) n (%)
Chronic disease existence			***Car ownership***		
Yes	373 (30.4)	388 (25.6)	Yes	761 (62.0)	1045 (86.9)
No	855 (69.6)	1129 (74.4)	No	467 (38.0)	472 (31.1)
Chronic disease			***Computer ownership***		
Hypertension	175(46.9)	136(35.1)	Yes	838 (68.2)	1126 (74.2)
Diabetes	120(32.2)	96(24.5)	No	390 (31.8)	391 (25.8)
Heart disease	71(19.0)	60(15.5)	***Disability for physical activity***		
COPD	48(12.9)	19(4.9)	Yes	130 (10.6)	136 (9.0)
Other	105(28.2)	213(14.0)	No	1098 (89.4)	1381 (91.0)
Smoking			*Mean daily time spent on TV and computer (min)*	*178.64 ± 131.66*	*190.14 ± 137.86*
Never	772 (62.9)	983 (64.8)	***BMI***		
Currently smoking	363 (29.6)	455 (30.0)	Weak	8 (0.7)	26 (1.7)
Quit	93 (7.5)	79 (5.2)	Normal weight	447 (36.4)	614 (40.5)
Mean years of smoking	16.72 ± 10.37	17.62 ± 11.32	Overweight	547 (44.5)	592 (39.0)
Daily no. of cigarettes	*n = 363*	*n = 455*	Obese	226 (18.4)	285 (18.8)
1–10	184(50.7)	180(39.6)	*BMI χ^2 = 14.135, P = 0.003[a]*		
11–20	126(34.7)	212(46.6)	*Mean BMI*	*26.52 ± 4.11*	*26.31 ± 4.33*
> 1 pack	53(14.6)	63(13.8)			

[a]*Comparison between 2014 and 2023. BMI = body mass index; COPD = chronic obstructive pulmonary disease.*

Table 3. Distribution and proportions of physical activity categorization based on MET score

Physical activity categorization	2014 (n = 1228) n	2014 (n = 1228) %	2023 (n = 1517) n	2023 (n = 1517) %	χ^2	P
Inactive	457	37.3	606	39.9	3.013	0.222
Minimally active	509	41.4	621	40.9		
Very active	262	21.3	290	19.2		
Total	1228	100	1517	100		

MET = metabolic equivalent of task.

Table 4. Comparative analysis of selected characteristics among individuals based on their physical activity status

Characteristics		HEPA active		Minimally active		Inactive		Total	
		n	%	n	%	n	%	χ^2	P
Gender (2014)	Male (597)	174	29.1	226	37.9	197	33.0	42.39	<0.001
	Female (631)	88	13.9	283	44.8	260	41.2		
Gender (2023)	Male (743)	183	24.6	319	42.9	241	32.4	45.14	<0.001
	Female (774)	107	13.8	302	39.0	365	47.2		
Male: χ^2 = 4.66, P = 0.097 Female: χ^2 = 5.61, P = 0.06**									
Age group, yr (2014)	25–34 (445)	112	25.2	190	42.7	143	32.1	19.02	<0.001
	35–44 (274)	69	25.2	103	37.6	102	37.2		
	45–64 (509)	81	15.9	216	42.4	212	41.7		
Age group, yr (2023)	25–34 (561)	129	23.0	252	44.9	180	32.1	24.36	<0.001
	35–44 (362)	63	17.4	138	38.1	161	44.5		
	45–64 (594)	98	16.5	231	38.9	265	44.6		
25–34: χ^2 = 0.769, P = 0.681 35–44: χ^2 = 6.54, P = 0.038* 45–64: χ^2 = 1.46, P = 0.481**									

Characteristics		HEPA active		Minimally active		Inactive		Total	
		n	%	n	%	n	%	χ^2	P
Education (2014)	< 12 yr (470)	167	19.7	362	42.8	317	37.5	4.47	0.107
	≥ 12 yr (758)	95	24.9	147	38.5	140	36.6		
Education (2023)	< 12 yr (288)	129	21.3	247	40.8	230	38.0	3.50	0.174
	≥ 12 yr (1229)	161	17.7	374	41.1	376	41.3		
< 12 yr: χ^2 = 0.784, P = 0.679 ≥ 12 yr: χ^2 = 8.92, P = 0.012**									
Marital status (2014)	Single (256)	74	28.9	116	45.3	66	25.8	23.36	<0.001
	Married (869)	173	19.9	352	40.5	344	39.6		
	Widowed/divorced (103)	15	14.6	41	39.8	47	45.6		
Marital status (2023)	Single (432)	100	23.1	201	46.5	131	30.3	24.42	<0.001
	Married (1016)	180	17.7	394	38.8	441	43.5		
	Widowed/divorced (69)	10	14.5	26	37.7	33	47.8		
Single: χ^2 = 3.31, P = 0.190 Married: χ^2 = 3.19, P= 0.202* Widowed/divorced: χ^2 = 0.91, P = 0.956**									
Economic status (2014)	Bad (360)	79	21.9	167	46.4	114	31.7	9.56	0.048
	Moderate (714)	154	21.6	286	40.1	274	38.4		
	Good (154)	29	18.8	56	36.4	69	44.8		
Economic status (2023)	Bad (125)	7	21.6	50	40.0	48	38.4	0.97	0.913
	Moderate (905)	171	18.9	366	40.4	368	40.7		
	Good (487)	92	18.9	205	42.1	190	39.0		
Bad: χ^2 = 14.89, P < 0.001 Moderate: χ^2 = 1.96, P = 0.375* Good: χ^2 = 1.91, P = 0.384**									
Smoking (2014)	Yes (363)	105	28.9	145	39.9	113	31.1	20.04	<0.001
	No (772)	137	17.7	326	42.2	309	40.0		
	Quit (93)	20	21.5	38	40.9	35	37.6		
Smoking (2023)	Yes (455)	113	24.8	168	36.9	174	38.2	29.21	<0.001
	No (983)	152	15.5	419	42.6	412	41.9		
	Quit (79)	25	31.6	34	43.0	20	25.3		
Yes: χ^2 = 4.66, P = 0.097 No: χ^2 = 1.76, P = 0.415* Quit: χ^2 = 3.75, P=0.153**									
Chronic disease (2014)	Yes (373)	53	14.2	152	40.8	168	45.0	21.63	<0.001
	No (855)	209	24.4	357	41.8	289	33.8		
Chronic disease (2023)	Yes (388)	70	18.0	152	39.2	166	42.8	1.76	0.415
	No (1129)	220	19.5	469	41.5	440	39.0		
Yes: χ^2 = 2.07, P = 0.356 No: χ^2 = 9.08, P = 0.011**									
BMI (kg/m²) (2014)	< 25 (455)	107	23.5	194	42.6	154	33.8	4.06	0.131
	≥ 25 (773)	155	20.1	315	40.8	303	39.2		
BMI (kg/m²) (2023)	< 25 (640)	128	20.0	270	42.2	242	37.8	2.14	0.343
	≥ 25 (877)	162	18.5	351	40.0	364	41.5		
BMI < 25: χ^2 = 2.70, P = 0.259 BMI ≥ 25: χ^2 = 1.13, P = 0.569**									
Being parent (2014)	Yes (887)	175	19.7	350	39.5	362	40.8	18.02	<0.001
	No (341)	87	25.5	159	46.6	95	27.9		
Being parent (2023)	Yes (972)	169	17.4	375	38.6	429	44.0	19.20	<0.001
	No (545)	121	22.2	246	45.1	178	32.7		
Yes: χ^2 = 2.672, P = 0.263 No: χ^2 = 2.65, P=0.266**									

**Change between 2014 and 2023 is compared. BMI = body mass index.*

were widowed or divorced (45.6%), those with chronic diseases (45%), those with children (40.8%), those with good economic status (44.8%), and those with BMI ≥ 25 kg/m2 (39.2%) were more physically inactive. In 2023, individuals who were widowed or divorced (47.8%), those with chronic diseases (42.8%), those with children (44%), those with moderate economic status (40.7%), and those with BMI ≥ 25 kg/m² (41.5%) were more likely to be physically inactive.

The results of the multiple logistic regression analysis for the variables influencing physical activity in the 2014 study indicated that men were 1.30 times more likely to be physically active (Table 5). Participants who were not parents were 1.79 times more likely to be physically active. Smokers were 1.36 times more likely to be physically active. Participants without chronic diseases were 1.38 times more likely to be physically active. In 2023, men were 1.91 times more likely to be physically active. Participants aged 25–34 years were 1.72 times more likely to be physically active than those aged 45–64 years. Participants with ≤ 12 years of education were 0.71 times less likely to be physically active.

Discussion

Harold W. Kohl III (University of Texas) declared physical inactivity a pandemic in 2012, and since then, there has been significant global progress on this issue. Many countries have initiated interventions aimed at increasing physical activity, prompting a thorough scientific review of the impact of these interventions within the research community (*16*). The Turkish Ministry of Health has organized campaigns to promote physical activity (*10*). However, there is currently insufficient scientific data

Table 5. Multiple logistic regression analysis of risk factors influencing physical activity

Characteristic	Multiple regression (2014)		*P*	Multiple regression (2023)		*P*
	OR	95% CI		OR	95% CI	
Gender						
Female	1			1		
Male	1.30	1.01–1.68	0.040	1.91	1.55–2.37	<0.001
Age groups (yr)						
45–64	1			1		
35–44	0.99	0.70–1.42	0.976	1.07	0.81–1.40	0.618
25–34	0.97	0.70–1.36	0.892	1.72	1.28-2.30	<0.001
Education						
> 12 yr	1			1		
≤ 12 yr	1.47	1.10–1.96	0.010	0.71	0.57–0.89	0.003
Marital status						
Married	1			1		
Single	1.06	0.75–1.51	0.730	1.29	0.99–1.69	0.059
Economic status						
Good	1			1		
Moderate	1.32	0.92–1.90	0.137	0.90	0.71–1.14	0.401
Bad	1.87	1.24–2.84	0.015	0.83	0.54–1.26	0.373
Smoking						
No	1			1		
Yes	1.36	1.03–1.80	0.031	1.08	0.85–1.37	0.540
Chronic disease						
Yes	1			1		
No	1.38	1.06–1.79	<0.001	0.93	0.72–1.21	0.599
BMI (kg/m²)						
≥ 25	1			1		
< 25	0.98	0.75–1.29	0.911	0.89	0.70–1.12	0.313
Being parent						
Yes	1			1		
No	1.79	1.33–2.40	<0.001	1.12	0.77–1.63	0.560
Hosmer & Lemeshow			***0.494***			***0.975***
Nagelkerke R²			***0.054***			***0.062***

BMI = body mass index; CI = confidence interval.

on how physical activity changes over time. Our study investigated changes in physical activity between 2014 and 2023 among people aged 25–64 years in Türkiye. There was no significant change in physical activity over the observed period, with inactivity rate of 39.9% in 2023 compared with 37.3% in 2014. While physical inactivity among men remained stable, there was a notable increase in physical inactivity among women, from 41.2% to 47.2%. In 2023, men were 1.91 times more active than women. Globally, the prevalence of physical inactivity is 27.5%, with the highest rates found in high-income countries at 36.8% (*17*). Globally, levels of physical inactivity among women are approximately 8% higher in all regions except for east and south-east Asia. A pooled analysis of 358 population-based studies has shown that the level of physical inactivity has remained unchanged over the years (*17*).

It has been observed that individuals tend to become less active with age, and many struggle to achieve sufficient levels of physical activity. This effect is particularly noticeable and gradually increases after the age of 45 years (*18*). Physical activity is recommended to promote healthy living across all age groups (*19*). In our study, the level of physical activity varied according to age, with older participants exhibiting higher levels of inactivity. An analysis of the change over the years based on age group, showed that physical activity decreased over time among those aged 35–44 years, with a higher level of inactivity. It is worth noting that this age group typically comprises individuals who are employed. Therefore, it is possible that the observed effects were influenced by differences in the composition of the study groups.

When we examined the occupational distribution, in 2023, more participants were civil servants; many of whom had desk-based jobs. There was a similar effect regarding the level of education. Individuals with ≥ 12 years of education had significantly lower physical activity. In 2014, the education level was more evenly distributed; however, in 2023, 60.1% of the participants had completed ≥ 12 years of education. Studies in other countries have consistently demonstrated an inverse relationship between education level and physical activity (*20, 21*).

Türkiye is recognized as having one of the highest obesity rates (*22*). High rates of physical inactivity and overweight/obesity pose a serious threat, particularly concerning NCDs (*8*). However, we found that mean BMI did not show any significant change over the years, and a previous meta-analysis similarly revealed that the prevalence of obesity remained stable over time (*23*). Our study demonstrated that public information activities such as public service announcements, posters and web postings had no significant effect on behaviour. A study conducted by Western et al. showed that digital interventions had a limited impact on physical activity and failed to reach people with low socioeconomic status, especially those most in need. Consequently, those interventions have the potential to exacerbate existing inequalities (*24*). Although there is limited evidence on the impact of campaign-style interventions in the community, it is well established that school-based and policy-supported interventions have the potential to increase physical activity (*25*). It is important to consider that during the period between the 2 studies, the world faced a pandemic that significantly affected many regions, leading to movement restrictions and a significant reduction in people's mobility (*26*). Some studies have indicated that government communication efforts, despite limitations, have proven effective in promoting physical activity (*27*). Although the effects of the COVID-19 pandemic were not considered in our study, the second study was carried out 2 years after the cessation of pandemic restrictions, during which time, some sort of normality had been restored. Consequently, we posit that any residual effects attributable to the pandemic would be minimal.

Given the significant effects of physical activity on health, societies should focus on supporting this through effective public health policies rather than solely relying on individuals' personal preferences (*28*). This requires support from all sectors of society as well as health services. Policymakers, municipalities and educational institutions should implement multisectoral behaviour change strategies and public policies to promote physical activity among all age groups. In addition, the impact of interventions should be closely monitored, evaluated and improved (*16*).

This study was not conducted with the same participants at both time periods; therefore, there may have been sampling bias. Although we did not show changes in personal behaviour over the years, the study remains important in terms of showing consistent results obtained using the same method in a similar population.

Conclusion

This study investigated the change in physical activity and the factors influencing it within the same community in Türkiye from 2014 to 2023. The results showed that information campaigns conducted by the Ministry of Health alone were not sufficient to increase physical activity. There is a need for more comprehensive socioecological changes locally, nationally and even internationally to increase physical activity. Physical inactivity was more prevalent among women and older people, highlighting the need to prioritize interventions targeting these groups.

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Évolution de l'activité physique chez les adultes en Türkiye

Résumé

Contexte : La sédentarité est un problème de santé publique important qui contribue à l'apparition de maladies non transmissibles et à l'aggravation de l'état de santé. Elle est à l'origine de morbidité et d'environ 6 à 10 % des décès prématurés dans le monde.

Objectif : Étudier l'évolution de l'activité physique chez les adultes en Türkiye entre 2014 et 2023, ainsi que les facteurs qui l'influencent.

Méthodes : Deux études transversales ont été menées en 2014 (N = 1228) et 2023 (N = 1517) sur la même population d'adultes âgés de 25 à 64 ans, en utilisant la même méthodologie. Les données ont été analysées à l'aide du logiciel SPSS 24,0. La relation entre les variables supposées influencer l'activité physique et les changements de variables au sein des groupes au fil des ans a été évaluée à l'aide du test χ^2. Un p supérieur à 0,005 était considéré comme significatif.

Résultats : L'âge moyen des participants était de 41,25 ans ± 12,06, 51,4 % d'entre eux étaient des femmes, 70,8 % étaient mariés et 72,2 % avaient des enfants. L'équivalent métabolique total moyen du score obtenu dans le cadre de la tâche était de 2285 en 2014 et de 2288 en 2023 (p = 0,984). Il n'y a pas eu de changement significatif dans l'activité physique au fil des ans et le taux de sédentarité est passé de 37,3 % en 2014 à 39,9 % en 2023 (p = 0,222). Cette même année, les hommes étaient 1,91 fois plus actifs que les femmes (p < 0,001). Il y avait des différences dans le niveau d'activité physique entre les groupes d'âge, les personnes âgées étant davantage sédentaires. L'indice de masse corporelle moyen n'a pas changé au fil des ans (p = 0,09).

Conclusion : Les résultats ne montrent aucun changement significatif pour le niveau d'activité physique et la prévalence de l'obésité chez les adultes âgés de 25 à 64 ans en Türkiye entre 2014 et 2023. Cela indique que les campagnes menées par le ministère de la Santé n'ont pas été suffisantes pour accroître l'activité physique au sein de la population d'étude. Nous recommandons de mener des campagnes plus intensives au niveau communautaire qui pourraient entraîner une augmentation de l'activité physique, en accordant une plus grande attention aux femmes et aux personnes âgées.

التغيرات في النشاط البدني بين البالغين في تركيا

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الخلاصة

الخلفية: الخمول البدني من مشكلات الصحة العامة الخطيرة التي تسهم في الإصابة بالأمراض غير السارية وتدهور الحالة الصحية، كما يسبب المراضة ونسبة تُقدر بنحو 6–10٪ من الوفيات المبكرة عالميًا.

الأهداف: هدفت هذه الدراسة الى استقصاء التغيرات التي طرأت على النشاط البدني بين البالغين في تركيا بين عامَي 2014 و2023، والعوامل المؤثرة في هذه التغيرات.

طرق البحث: أُجريت دراستان مقطعيتان في عام 2014 (عدد المشاركين = 1228) وعام 2023 (عدد المشاركين 1517) على الفئة السكانية نفسها من البالغين الذين تتراوح أعمارهم بين 25 و64 عامًا، وباستخدام منهجية واحدة. وخضعت البيانات للتحليل بالإصدار 24.0 من برنامج SPSS. وقد قيَّم الباحثون العلاقة بين المتغيرات التي يُعتقد أنها تؤثر على النشاط البدني والتغيرات في المتغيرات ضمن المجموعات على مر السنين باستخدام اختبار مربع كاي. وقد عُدت قيمة الاحتمال الأقل من 0.005 ذات دلالة إحصائية.

النتائج: كان متوسط عمر المشاركين 12.06 ± 41.25 سنة، وكانت نسبة 51.4٪ منهم من الإناث، و70.8٪ من المتزوجين، و72.2٪ لديهم أطفال. كما بلغ متوسط إجمالي درجات المكافئ الاستقلابي للعمل 2285 في عام 2014 و2288 في عام 2023 (قيمة الاحتمال = 0.984). ولم يطرأ تغيُّر كبير على النشاط البدني على مدى سنين المقارنة، وارتفع معدل الخمول من 37.3٪ في عام 2014 إلى 39.9٪ بحلول عام 2023 (قيمة الاحتمال = 0.222). وفي عام 2023، كان الرجال أكثر نشاطًا بمقدار 1.91 مرة من النساء (قيمة الاحتمال < 0.001). وتبيَّن وجود اختلافات

في مستوى النشاط البدني بين الفئات العمرية؛ حيث زاد الخمول بين الأكبر سنًّا. أما منسب كتلة الجسم، فلم يتغير متوسطه على مدى سنين المقارنة (قيمة الاحتمال = 0.09).

الاستنتاجات: لا تظهر النتائج أي تغيُّر ذي أهمية في مستوى النشاط البدني ومعدل انتشار البدانة بين البالغين في سن 25–64 عامًا في تركيا بين عامَي 2014 و2023. ويشير ذلك إلى أن الحملات التي أجرتها وزارة الصحة وحدها لم تكن كافية لزيادة النشاط البدني بين فئة السكان الذين شملتهم الدراسة. ونوصي بتنفيذ المزيد من الحملات المكثفة على مستوى المجتمع التي من شأنها زيادة النشاط البدني، مع الاهتمام أكثر بالنساء وكبار السن.

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