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THE EFFECT OF CURFEW ON OCCUPATIONAL AND HABITUAL PHYSICAL ACTIVITY IN HEALTH CARE WORKERS IN THE EASTERN PROVINCE DURING CORONAVIRUS DISEASE OF 2019: A CROSS-SECTIONAL STUDY

Running Title: Effect Of Curfew On Activity Of Workers

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Abstract:

Objectives: *We studied the prevalence of occupational and habitual physical activities among healthcare workers during the curfew imposed due to the SARS-CoV-2 virus pandemic.*

Methods: *A cross-sectional study using convenience sampling was conducted. The validated General Practice Physical Activity Questionnaire was distributed through an online survey to healthcare workers in the Eastern health cluster. The chi-square test was used to determine the association between categorical variables. The level of significance was set at $\alpha=0.05$ and $p< 0.05$. Simple logistic regression was used to identify the odds ratios and their 95% CI for significant variables.*

Results: *Among all 124 respondents, 30% were physically inactive and 28% were active. The chi-square test showed that being male ($p=0.019$), single ($p=0.003$), nurse ($p=0.045$), and overweight were significantly associated with being physically active ($p=0.011$). Multinomial logistic regression revealed that those who were single were less likely to be physically inactive (OR=0.666, 95% CI=0.011–0.409, $p=0.004$). Those in the age group 35–39 were more likely to be moderately active compared with those who were active (OR=59.330, 95% CI=2.328–1512.371, $p=0.013$. Physicians (OR=0.032, 95% CI=0.003–0.401, $p=0.008$) and overweight individuals (OR=0.133, 95% CI=0.022–0.824, $p=0.008$) were less likely to be moderately active compared with those who are active.*

Conclusions: *Workplace initiatives to promote physical activity are a necessity in the pandemic era.*

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INTRODUCTION:

The daily living routines have varied since March 2020 following the announcement of the pandemic due to COVID-19 disease caused by the SARS-CoV-2 virus. The WHO posted several preventive measures, including social distancing, hand and respiratory hygiene, and wearing masks (1). With the rapid increase in the number of infected people and high mortality rates (2), countries worldwide placed their residents under mandatory lockdown to prevent the further spread of the coronavirus (3). With the announcement of the first confirmed case of COVID-19 in Saudi Arabia in the eastern province, gymnasiums were temporarily suspended (4).

Most studies on physical activity in Saudi Arabia have been conducted in the general population (5). However, few studies have assessed the physical activity of healthcare workers (6,7). Studies in Saudi Arabia showed that physical activity among healthcare workers in primary healthcare centers varies from 21% to 65.2% (6,7). Studies in Saudi Arabia showed that physical activity among healthcare workers in primary healthcare centers varies from 21% to 65.2% (6,7). Studies in other Arab countries revealed that 84% of physicians are physically inactive (8). In Bahrain, a study conducted in 2015 observed that only 13 % exercised ≥ 5 days weekly, and 39 %, 33% of physicians were overweight and obese respectively (9). A cross-sectional study of 10,000 workers revealed that more than 10% of absenteeism and presentism was associated with obesity (10).

Physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure . (11). In contrast, sedentary behaviors are any waking behaviors characterized by an energy expenditure ≤ 1.5 METs, while in a sitting, reclining, or lying posture (12).

The World Health Organization (WHO) recommends that adults aged 18–64 years perform at least 150 min of moderate-intensity and at least 75 min of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity activity.
The aerobic activity should be performed in a minimum of 10 min periods. For additional health benefits, adults should increase their moderate-intensity aerobic physical activity to 300 minutes per week, engage in 150 minutes of vigorous-intensity aerobic physical activity per week, or undergo an equivalent combination of moderate- and vigorous-intensity activity (13).

The prevalence of physical activity and the determination to meet physical activity recommendations vary significantly between countries. A study reviewing the global prevalence of physical activity among adults showed that the countries with the lowest prevalence of physical activity were men in Brazil (4%), women in Saudi Arabia (2%), and Thailand (2%). While the highest reported prevalence of physical activity was in men in Sweden (77%) and women in Denmark (81%) (14).

According to WHO data, insufficient physical activity levels have not improved over the past 15 years. The lowest level of insufficient physical activity was in Western Pacific (19%), followed by the African Region (22%). In contrast, the highest prevalence of insufficient physical activity was in America (39%), followed by the Eastern Mediterranean Region (35%). In addition, the data showed that the prevalence of insufficient physical activity was high in high-income countries. For both men and women, the prevalence was more than double in high-income countries than in low-income countries. In high-income countries, sedentary occupations and motorized transport explain the high level of insufficient activity (15).

Physical activity reduces tension and anxiety and boost the immune system to prevent infections (16).

With the challenges that healthcare workers face from changing workplaces and shift hours, our novel study measures the level of physical inactivity involved during work in MOH institutes and physical exercise after working hours in the era of COVID-19. Furthermore, we investigated risk factors associated with physical inactivity among healthcare workers during the curfew.

METHODS:

Study setting and population

A cross-sectional design was used to study the prevalence of occupational and habitual physical activity among healthcare workers. This study was conducted in the Eastern Province of Saudi Arabia . Data collection started from June 2020 and continued until we reached sample size. Healthcare workers affiliated with the Ministry of Health were included.

Employees not working in MOH were excluded. STROBE statement was used to report the study.

According to the study conducted ins AlJouf (17), physical activities constituted 65.2% of the total number of physicians. The required sample size was calculated using the following formula:

Sample Size = N / (1 + N*e^2)

n = (Z2 x P [1 / P])/e2

Where:
Z=Confidence level (1.96)

p the estimated proportion of the event (taken from a previous study), q=1 – p.
e=margin of error (0.05)

The sample size of 124 was required to detect a significant result with 95% levels ofconfidence and 0.5 margin of error assuming a two-tailed statistical test.

The data were collected through online surveys. An invitation letter with a consent form was sent through email and WhatsApp mobile applications to all healthcare workers. The HCW database (emails/mobile numbers) was obtained from the E1–first health cluster. Convenience sampling was employed to obtain the sample size, including the first 121 responses. The questionnaire was self-administered.

The questionnaire comprised two sections. Section A describes the sociodemographic characteristics and Body mass index. Section B was adopted from a validated "General Practice Physical Activity Questionnaire (17).

We used the "General Practice Physical Activity Questionnaire" to calculate the prevalence of physical activity during working hours and physical exercise after working hours. This instrument subjectively assesses a simple, 4-level Physical Activity Index (PAI) of Active, Moderately Active, Moderately Inactive, and Inactive. Inactive are those who have a sedentary job and no physical exercise or cycling; moderately inactive are those with sedentary jobs with a little but < 1 hour of physical exercise and/or cycling per week or those with standing jobs and no physical exercise or cycling. Moderately active are those with a sedentary job and 1–2.9 hours of physical exercise and/or cycling per week or those with a standing job and a little but < 1 h of physical exercise and/or cycling per week or those with a physical job and no physical exercise or cycling. Active are those with a sedentary job and ≥ 3 hours of physical exercise and/or cycling per week or those with a standing job and 1–2.9 hours of physical exercise and/or cycling per week or those with a physical job and little but < 1 h of physical exercise and/or cycling per week or those performing heavy manual jobs (17).

Body mass index (BMI) was assessed by self-reported height and weight and was computed by dividing weight by height squared (kg/m^2). The participants were classified as normal weight (<25 kg/m^2), overweight (25–29 kg/m^2), or obese (≥30 kg/m^2) (18). Age, sex, nationality, monthly income, marital status, occupation, workplace, height, and weight were the independent variables. The level of physical activity based on the "General Practice Physical Activity Questionnaire "(active, moderately active, moderately inactive, and inactive) was the dependent variable.

A pilot study of 15 participants was conducted to test the questionnaire items to understand the time required to complete the questionnaire. Modifications were made based on the findings of the pilot study.

The IRB was requested from the King Fahad Specialist Hospital's Institute Research Board (E1-First Health cluster). The purpose of the study, as well as the conduct of the study and analysis of results, was explained to all participants. Participation in the study was voluntary. The participants were requested to provide an electronic participation agreement. Using a password-protected laptop and a single data analyst, all information collected for the research was kept strictly confidential. Privacy and anonymity were ensured during the collection, storage, and publication

of research materials.

Data entry and analyses were performed using IBM SPSS version 21. Descriptive and analytical inferential statistics were calculated. For descriptive analyses, we used frequency and percentage for qualitative variables, and measures of central tendency and dispersion for quantitative variables. A chi-square test was performed to determine the association between categorical variables. The level of significance was set at $\alpha = 0.05$. If $p < 0.05$, simple logistic regression was used to identify the odds ratios and their 95% CI for significant variables.

RESULTS:

One hundred and twenty-four healthcare workers agreed to participate in the study. The majority of participants were female (73%), approximately half were from the age group between 30–34 years (45%). Nearly all were Saudi (93.5) or married (81%). approximately half of them were physicians (51%) working in primary health care centers (50%). Regarding income, more than half of the participants (56%) had an income range of 10,000–20,000 Saudi Riyals.

Mean weight was (71%) +/- SD 16.04, Mean height (162) +/- SD 12.36. The mean BMI was (28) +/- SD = 16.7. Almost half of the participants were overweight (40%), followed by (31%) who were normal weight and approximately a quarter were obese (24%). Table 1 shows the sample demographics, including age, sex, nationality, marital status, workplace, city, income, job, and BMI. Table 1 reveals the sociodemographic characteristics of the healthcare workers affiliated with the Eastern Health Cluster.

Table 1 : Sociodemographic characteristics of health care workers affiliated to Eastern Health Cluster

Factor	Level	n	%
Current place of work	Hospital	53	43
	Primary Health care center	62	50
	Administrative Institute	9	7
City	al Khobar/Dhahran	33	27
	Dammam/Jubail	48	39
	Jubail	7	6
	Qatif	21	17
	others	15	12
Age	less than 30	28	23
	30-34	58	47
	35-39	16	13
	40 or more	22	18
Gender	male	33	27
	female	91	73
Nationality	Saudi	116	93.5
	non-Saudi	8	6.5
Marital Status	single	24	19
	married	100	81
Current job (more than one answer can be selected)	physician	63	51
	Nurse	35	28
	Medical Administration	7	6
	others	19	15
Monthly Income	less than 10,000SR	16	13
	10,000 - 20,000SR	70	56.5
	More than 20,000SR	38	31
BMI Category	Underweight	6	5
	Normal weight	38	31
	Overweight	50	40
	Obese	30	24

Prevalence of Physical inactivity

Among all respondents, (51%) were physically inactive, and (49%) were physically active. Among those who were classified as inactive, 30% and 21% were inactive and moderately inactive, respectively. Among those who were classified as active, 21% and 28% were moderately active and active, respectively. More than half of respondents spent most of their time at work sitting (53%), with no time spent on physical exercise such as swimming, jogging, or aerobics (52%). Regarding the time spent walking 29% walked less than one hour per week, and approximately half of respondents (41%) spent more than three hours per week on housework and childcare. More than half the respondents described their walking pace as slow (52%), with no time spent on gardening (57%). Table 2 shows the distribution of respondents by physical activity level and Table 3 indicates the types of habitual and occupational physical activity among respondents.

Table 2: Prevalence Of physical activity among health care workers affiliated to Eastern Health Cluster

Variable	Level	n	%
calculated prevalence of physical activity	inactive	37	30
	moderately inactive	26	21
	moderately active	26	21
	active	35	28

Table 3 : Types of habitual and occupational physical activity

Measurement variable	Level	n	%
Please tell us the type and amount of physical activity involved in your work.	I am not in employment	2	1.6
	I spend most of my time at work sitting	66	53.2
	I spend most of my time at work standing or walking	32	25.8
	My work involves definite physical effort including handling of heavy objects and use of tools	23	18.5
	My work involves vigorous physical activity including handling of very heavy objects	1	0.8
During the last week, how many hours did you spend on Physical exercise such as swimming, jogging, aerobics, football, tennis, gym workout etc.?	none	64	51.6
	Some but less than 1 hour	28	22.6
	1 hour but less than 3 hours	18	14.5
	3 hours or more	14	11.3
During the last week, how many hours did you spend on Cycling, including cycling to work and during leisure time?	none	107	86.3
	Some but less than 1 hour	11	8.9
	1 hour but less than 3 hours	5	4.0
	3 hours or more	1	0.8
During the last week, how many hours did you spend on Walking, including walking to work, shopping, for pleasure?	none	33	26.6
	Some but less than 1 hour	36	29.0
	1 hour but less than 3 hours	35	28.2
	3 hours or more	19	15.3
	1hour but less than 3 hours, 3 hours or more	1	0.8

During the last week, how many hours did you spend on Housework/Childcare?	none	15	12.1
	Some but less than 1 hour	13	10.5
	1 hour but less than 3 hours	43	34.7
	3 hours or more	51	41.1
	1hour but less than 3 hours, 3 hours or more	2	1.6
During the last week, how many hours did you spend on Gardening/Doing It Yourself?	none	71	57.3
	Some but less than 1 hour	29	23.4
	1 hour but less than 3 hours	17	13.7
	3 hours or more	6	4.8
	1hour but less than 3 hours, 3 hours or more	1	0.8
How would you describe your usual walking pace?	Brisk pace	36	29.0
	fast pace	19	15.3
	slow pace	65	52.4
	steady average pace	3	2.4
	steady average pace / brisk pace	1	0.8

Association between variables and Physical activity

The chi-square test was used to evaluate the association between variables and physical activity (Table 4). The results indicated that physical activity was significantly higher in males than in females (p=0.019), and in those who were single than in those who were married (p=0.003). Physicians were more likely to be physically inactive whereas nurses were more physically active (p=0.045). Being overweight was significantly associated with being physical inactivity (p=0.011). There were no significant associations between physical activity and city, age, nationality, income, workplace, or monthly income.

TABLE 4: Predictors of physical activity among health care workers affiliated to Ministry of health in eastern province, Chi square analysis.

Factor	Levels	calculated level of activity								Ch-sq P-value
		inactive		moderately inactive		moderately active		active		
		n	%	n	%	n	%	n	%	
Current place of work`	Hospital	15	28%	12	23%	9	17%	17	32%	0.378
	Primary Health care center	17	27%	14	23%	16	256%	15	24%	
	Administrative Institute	5	56%	0	0%	1	11%	3	33%	
City	al Khobar/Dhahran	11	33%	8	24%	7	21%	7	21%	0.780
	Dammam/Jubail	12	25%	9	19%	11	23%	16	33%	
	Jubail	1	14%	2	29%	2	29%	2	29%	
	Qatif	10	48%	3	14%	4	19%	4	19%	
	others	3	20%	4	27%	2	13%	6	40%	
Age	Less than 30	6	21%	7	25%	5	18%	10	36%	0.327
	30-34	20	34.5%	9	15.5%	13	22%	16	28%	

	35-39	5	31%	4	25%	6	37.5%	1	6%	
	40 or more	6	27%	6	27%	2	9%	8	36%	
Nationality	Saudi	33	28%	25	22%	26	22%	32	28%	0.319
	non-Saudi	4	50%	1	12.5%	0	0%	3	37.5%	
Gender	male	9	27%	4	12%	4	12%	16	48.5%	**0.019**
	female	28	31%	22	24%	22	24%	19	21%	
Marital Status	single	2	8%	8	33%	2	8%	12	50%	**0.003**
	married	35	35%	18	18%	24	24%	23	23%	
Monthly Income	less than 10,000SR	2	12.5%	3	19%	3	19%	8	50%	0.154
	10,000 - 20,000SR	22	31%	13	19%	19	27%	16	23%	
	More than 20,000SR	13	34%	10	26%	4	10.5%	11	29%	
Current job	physician	24	38%	15	24%	6	9.5%	18	29%	**0.045**
	Nurse	5	14%	9	27%	12	34%	9	26%	
	Medical Administration	3	43%	1	14%	1	14%	2	29%	
	others	5	26%	1	5%	7	37%	6	32%	
BMI Category	Underweight	0	0%	3	50%	3	50%	0	0%	**0.011**
	Normal weight	14	37%	6	16%	8	21%	10	26%	
	Overweight:	14	28%	14	28%	4	8%	18	36%	
	Obese	9	30%	3	10%	11	37%	7	23%	

Multinomial logistic regression

Multinomial logistic regression was performed to assess the impact of independent variables on physical activity (Table 5). Those who were single were less likely to be physically inactive (OR=0.666, 95% CI=0.011–0.409, *p*=0.004) or moderately active (OR =0.063, 95% CI=0.007–0.535, *p*=0.013). Those who were in the age group 35–39 were more likely to be moderately active compared to those who were active (OR=59.330, 95% CI=2.328–1512.371, *p*=0.013**.** Physicians (OR=0.032, 95% CI=0.003–0.401, *p*=0.008) and overweight (OR =0.133, 95% CI = 0.022–0.824, *p*=0.008) were less likely to be moderately active compared with those who are active.

Table 5: Predictors of physical activity among health care workers affiliated to Ministry of health in eastern province, Multilogistic Regression .

Parameter Estimates									
calculated level of activity		B	Std. Error	Wald	df	P-Value	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
inactive	Intercept	2.297	1.728	1.767	1	0.184			
	Less than 30	0.949	1.097	0.748	1	0.387	2.583	0.301	22.174
	30-34	0.872	0.808	1.164	1	0.281	2.392	0.490	11.666
	35-39	2.623	1.459	3.232	1	0.072	13.775	0.789	240.396
	40 or more	Reference							
	Saudi	-1.051	1.308	0.645	1	0.422	0.350	0.027	4.541
	non-Saudi	Reference							
	male	-0.761	0.663	1.316	1	0.251	0.467	0.127	1.715
	female	Reference							
	single	-2.720	0.932	8.523	1	**0.004**	0.066	0.011	0.409
	married	Reference							
	less than 10,000SR	-1.626	1.354	1.443	1	0.230	0.197	0.014	2.794
	10,000 - 20,000SR	0.135	0.703	0.037	1	0.847	1.145	0.289	4.543
	More than 20,000SR	Reference							
	physician	-0.969	0.998	0.941	1	0.332	0.380	0.054	2.686
	Nurse	-1.841	1.029	3.202	1	0.074	0.159	0.021	1.192
	Medical Administration	-0.721	1.274	0.320	1	0.571	0.486	0.040	5.903
	others	Reference							
	Underweight	0.273	4599.072	0.000	1	1.000	1.314	0.000	.[c]
	Normal weight	0.127	0.826	0.024	1	0.877	1.136	0.225	5.733
	Overweight:	-0.735	0.773	0.904	1	0.342	0.479	0.105	2.181
	Obese	Reference							
moderately inactive	Intercept	-1.826	2.223	0.675	1	0.411			
	Less than 30	-0.244	1.131	0.046	1	0.829	0.784	0.085	7.192
	30-34	-0.468	0.836	0.313	1	0.576	0.626	0.122	3.224
	35-39	1.395	1.394	1.002	1	0.317	4.036	0.263	62.038
	40 or more	Reference							
	Saudi	1.002	1.515	0.437	1	0.508	2.724	0.140	53.111
	non-Saudi	Reference							
	male	-1.163	0.754	2.379	1	0.123	0.313	0.071	1.370
	female	Reference							
	single	-0.606	0.778	0.606	1	0.436	0.545	0.119	2.508
	married	Reference							
	less than 10,000SR	-0.181	1.331	0.019	1	0.892	0.834	0.061	11.325
	10,000 - 20,000SR	-0.180	0.762	0.056	1	0.813	0.835	0.188	3.719
	More than 20,000SR	Reference							
	physician	0.993	1.383	0.516	1	0.473	2.701	0.180	40.605
	Nurse	1.101	1.283	0.737	1	0.391	3.007	0.243	37.142
	Medical Administration	0.682	1.783	0.146	1	0.702	1.978	0.060	65.156
	others	Reference							
	Underweight	17.984	3225.752	0.000	1	0.996	64639003.183	0.000	.[c]
	Normal weight	0.134	0.997	0.018	1	0.893	1.144	0.162	8.075
	Overweight:	0.532	0.891	0.356	1	0.551	1.702	0.297	9.764
	Obese	Reference							
Moderately active	Intercept	-13.776	1.584	75.649	1	0.000			
	Less than 30	1.858	1.418	1.716	1	0.190	6.409	0.398	103.229
	30-34	1.711	1.117	2.345	1	0.126	5.533	0.620	49.409
	35-39	4.083	1.652	6.107	1	**0.013**	59.330	2.328	1512.371
	40 or more	Reference							
	Saudi	15.449	0.000		1		5123566.580	5123566.580	5123566.580
	non-Saudi	0[b]			0				
	male	-0.919	0.912	1.015	1	0.314	0.399	0.067	2.384
	female	Reference							
	single	-2.764	1.091	6.422	1	**0.011**	0.063	0.007	0.535
	married	Reference							
	less than 10,000SR	-1.299	1.604	0.656	1	0.418	0.273	0.012	6.327
	10,000 - 20,000SR	-0.154	1.047	0.022	1	0.883	0.857	0.110	6.674
	More than 20,000SR	Reference							
	physician	-3.431	1.284	7.137	1	**0.008**	0.032	0.003	0.401
	Nurse	-1.902	1.099	2.997	1	0.083	0.149	0.017	1.286
	Medical Administration	-2.162	1.585	1.860	1	0.173	0.115	0.005	2.573
	others	Reference							
	Underweight	18.260	3225.752	0.000	1	0.995	85156694.141	0.000	.[c]
	Normal weight	0.151	0.913	0.027	1	0.869	1.163	0.194	6.956
	Overweight:	-2.014	0.929	4.700	1	**0.030**	0.133	0.022	0.824
	Obese	Reference							

DISCUSSION:

In 2017, the WHO designed the Global Action Plan on Physical Activity 2018–2030 (GAPPA) to increase awareness of the importance of physical activity. After the COVID-19 pandemic began in March 2020, many countries faced low levels of physical activity because of lockdowns (20).

In this study, we examined both occupational and habitual physical activities among healthcare workers during the pandemic era. Our results indicated that (50.8%) of healthcare workers were occupationally and habitually physically inactive during the curfew.

In this study, we observed a clinically significant rate of inactivity among Saudi HCWs. Nevertheless, another Saudi study including 3492 physicians reported a confirmatory low physical activity (63.55%) (21). Other studies that targeted the general population reported a decrease in the time spent performing physical activity before and during the COVID-19 lockdown (57.1%) (22–24). Similarly, the prevalence of daily walking significantly decreased during the pandemic (before vs during, 30.5% vs. 29.1%) (24).

A systematic review of changes in physical activity and sedentary behaviors from before to during the COVID-19 lockdown showed similar results of a reduction in physical activity and an increase in sedentary behaviors (25). In Japan, a cross-sectional study showed that workers who telecommuted were less physically active and had longer sedentary activities during work time than those who worked in the workplace (26). In contrast, a study in England showed little change over time in physical activity (62.4%), decreased physical activity (28.6%), and increased physical activity over time (9%) (27).

The authors demonstrated that physical activity was significantly higher in single individuals than in married individuals (p=0.003). In addition, single participants were less likely to be moderately active than active participants. These results were similar to a study that investigated major factors influencing exercise during COVID-19 which reported that being male (odds ratio [OR] = 1.26; 95% confidence interval [CI] 1.03–1.53), single (OR = 1.37; 95% CI 1.12–1.67), completing higher education and being resilient were more likely to be active (28).

The authors found mixed results regarding marital status and its relationship with physical activity. A study conducted in the US demonstrated that singles, when compared with their married counterparts, were more involved in leisure-time physical activities, while married individuals were more involved in other types of activities, such as gardening and home activities (29). Another study concluded that non-married mothers and married mothers had greater levels of leisure time physical activity when compared with unmarried mothers (p = .004) (30). Furthermore, analyzing the relationship of physical activity to marital status, a Greek study demonstrated that individuals who never married were more likely to be active compared with married, divorced, or widowed individuals, regardless of the sex and age of the participants (57% vs. 44%, p< 0.001) (31). In contrast, a study conducted among hospital workers showed that participants who raised children had significantly higher calorie expenditure per hour than other participants (1088.30 vs. 849.63 kcal/hour, p=0.037), which may be explained by their additional housework (32). Nevertheless, the present study confirms that previously reported associations, such as single individuals, had higher physical activity levels than married individuals.

Many institutions promote employee wellness by designing and implementing workplace wellness initiatives. WHO published a manual promoting physical activity in the workplace (33). The new Saudi care model includes workplace wellness. A study evaluating the impact of a workplace wellness program in Saudi Arabia in a hospital setting in Riyadh showed significant improvement in the physical functioning of employees, with a significant increase in the average intake of water and fruit and a significant decrease in the average number of soft drinks consumed per week as well as a significant decrease in days of absence in the last 3 months (34).

We recommend that Saudi institutes encourage HCWs to adopt healthy habits by applying such initiatives in the workplace, with a positive feedback system such as daybacks and free coffee.

The study has a limitation. This cross-sectional study was conducted during the COVID-19 pandemic. A comparison between the level of activity before and after the curfew provides a good indication of physical activity changes in each study.

In conclusion, the physical activity level of HCWs was low during the COVID-19 pandemic. Several factors are associated with this low activity level. Workplace initiatives to promote physical activity are necessary during the pandemic. Continuous assessment of the BMI and physical activity of healthcare workers should be part of a physical

examination of employees. Community programs to support working married females are necessary for them to adopt healthy lifestyles. The current results warrant consideration of preventive measures by physicians.

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