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HEALTHY LIFESTYLE AMONG GOVERNMENTAL PRIMARY HEALTH CARE CENTER WORKERS IN JEDDAH, 2018

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Abstract:

Background: *A healthy lifestyle has become related to health status to a great extent, and it's the mainstay of preventive medicine. Unhealthy lifestyle habits can be modified, usually starting in youth and continuing throughout adulthood. Health professionals are presumed to have healthier lifestyle options and therefore their health outcomes are better due to higher health education and awareness, but what is actually known about their health outcomes in comparison to the overall population is little. Also, studies are limited regarding the healthy lifestyle among non-health professionals such as administrators and social workers in primary health care centers. Therefore, to address these health issues, this research aims to determine the prevalence of a healthy lifestyle as well as to identify the determinants affecting the adherence of a healthy lifestyle among governmental primary health care center workers in Jeddah, 2018.*

Methods: *This research was a cross-sectional study conducted from October 2018 to June 2019 in Jeddah, Kingdom of Saudi Arabia. All workers except sanitary, security and pregnant workers from different governmental primary health care centers were chosen by stratified simple random sampling technique, participated by the use of a validated self-administered questionnaire. The dependent variables of the study included the four healthy lifestyle elements (smoking, diet, BMI and physical activity), while the independent variables included the socio-demographic data and the presence of any lifestyle-related chronic medical problem.*

Results: *This research has included 200 participants from different governmental primary health care centers. The prevalence of smoking was 26.6%. The majority of the participants (75%) scored toward a healthy diet. Only 32% of the study population had a normal body mass index, and the mean physical activity score was 9.2*

Conclusion: *Governmental primary health care workers do not practice healthy lifestyle habits. Health promotion programs need to target workers in governmental primary healthcare centers in order to benefit their own health which ultimately lead to better role modeling and patient counseling, and therefore a better society.*

Keywords: *smoking, diet, physical activity, BMI, workers.*

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INTRODUCTION:

A healthy lifestyle is exercising regularly, eating prudently, maintaining a healthy weight and not smoking[1]. It has become increasingly related to health status and it's the mainstay of preventive medicine[2]. Unhealthy lifestyle habits can be modified, usually beginning in youth and continuing throughout one's adulthood[3,4]. Increased income and wealth have contributed to marked lifestyle changes such as transportation convenience, availability of fast food and effort-saving appliances [5,6,7] which appear to encourage physical inactivity, sedentary lifestyle and obesity that are much responsible for the development of cardiovascular diseases, diabetes mellitus and cancer [8,9]. Furthermore, Stressors can significantly affect one's healthy lifestyle decisions[10]. Tobacco smoking is a significant preventable health issue and it's a direct cause of raised morbidity and mortality all over the world[11]. A study carried out in Jeddah, Saudi Arabia in 2012 found that the smoking prevalence among physicians in primary health care centers was 21.8%, with higher prevalence among general practitioners than family physicians[12]. In Riyadh, Saudi Arabia, the prevalence of smoking among primary health care professionals from different professions in King Abdulaziz Medical City, National Guard Health Affairs, was only 8.4%[2]. Both physicians as well as nurses had dietary habits better than other professionals, but unstratified data shows physicians had a higher BMI than nurses and pharmacists[2]. In Cordoba, Spain, smoking prevalence among resident physicians from different specialties in a regional university hospital was 6.5% with 5.2% were former smokers[13]. In Aljouf region, Saudi Arabia, physicians involved in moderate to vigorous physical activities account for 65.2% out of the total number of physicians in governmental primary health care centers as well as two general hospitals, where the prevalence of physical inactivity was 34.8%[14]. In England, obesity prevalence was higher among nurses than other healthcare professionals, 25.1% and 14.4%, respectively[15]. Lifestyle-related chronic illnesses such as hypertension and diabetes are similarly increasing among health professionals and all other occupations, suggesting that health habits leading to these illnesses have remained unchanged[16]. Although health professionals are assumed to have healthier lifestyle choices and better health outcomes due to greater health education and literacy, what is known about their actual health outcomes compared to the overall population is little[16]. An extensive literature search showed limited studies conducted on healthy lifestyle among non-health professionals such as administrators and social workers in primary health care centers.

METHODS:

This cross-sectional study was carried out between October 2018 and June 2019. The study was conducted in Jeddah, Kingdom of Saudi Arabia and involved governmental primary health care centers in Jeddah. The criteria of inclusion included participants who are primary health care professionals (physicians, nurses, pharmacists, laboratory workers, health educators, radiology workers, dietitians and dentists), non-health professionals (administrators and social workers) working in governmental primary health care centers in Jeddah. The exclusion criteria comprised sanitary, security and pregnant workers. The size of the sample was 200 participants assuming a prevalence of 20%. The first stage of sampling technique was stratification of the different governmental sectors in Jeddah, Saudi Arabia. Followed by simple random sampling of the primary health care centers from each sector and then taking all the health workers within the center. Data were assembled by the distribution of a validated self-administered questionnaire by the researcher to all the workers in the randomly selected health care centers out of the total governmental health care centers in Jeddah. The questionnaire consisted of six major parts: Part one included the main demographic information (age, profession, gender and duration of current job). Part two assessed the existence of any lifestyle-related chronic medical illnesses, such hypertension, diabetes mellitus, osteoarthritis, dyslipidemia, and irritable bowel syndrome. Part three assessed the smoking status smoker, non-smoker, and ex-smoker. Part four assessed dietary habits. We adopted the "How healthy is your diet questionnaire" 2009 for this part. This questionnaire involves six major diet categories as well as twenty-four items. Every question has two possible answers, either "yes" or "no". In the first three categories, "yes" means need to consider change, while in the remaining categories, "No" means no need to consider change. To make the analysis process easier, the answers have been standardized as "need to change" or "no need to change." Those who yielded a score greater than 50% were considered as in need to change their diet to be healthier. Part five assessed the physical activity level. We used the "How physically active are you" questionnaire from the University of Washington Health Promotion Research Center, 2006 for this part. We categorized the population into suboptimal and physically active according to the cut of point score of 5, those who scored less than 5 were considered suboptimal, the remaining were considered physically active.

Part six assessed the BMI. Normal BMI was considered from 18.5-24.9 kg/m^2, overweight 25-29.9

kg/m^2, obese ≥30 kg/m^2. Height and weight were taken for all participants by the researcher in each primary health care center. A digital scale was used to measure the weight. Height and weight were measured without shoes. We used (*SPSS*) statistical program for social sciences version 23 for data entry and analysis. P – value of 0.05 and less will be considered statistically significant. Ethical approval has been obtained from medical research and studies department Jeddah. Each questionnaire given to all participants had a written consent attached to it. All information assembled were kept confidential. The research was done according to the principles of the Helsinki Declaration.

RESULTS:

The total number of the study population was 200 workers in the primary healthcare. The mean age was 37±7 years, and the median body mass index was 27, and it ranges from 16.9 up to 68. Sixty-three percent were females, the majority were Saudi nationality, and more than two third 67% were non-smokers. Regarding the educational levels and job categories, 63% were holding university degree followed by 30% who were holding diploma degree, nurses represent more than one third 34% followed by administrators and others workers 30%, physicians and dentists represent 21%. Sixty-five percent of the study population do not suffer from any chronic illnesses. Regarding the physical activity score, the mean was 9.2 and the median was 7, the minimum was 0 and the maximum was 28 (Table 1).

Nutrition-wise, 57% of the study population need to consider making some change about eating at least five portions of fruits and/or vegetables every day, 52% need to consider making some change regarding eating more than 4 different varieties of fruits each week, and only 25% need to consider making some change regarding eating more than 4 different varieties of vegetables each week. Seventy-nine percent do not need to consider change about removing visible fat from meat or chicken, 71% do not need to consider change regarding choosing baked, steamed or grilled options when available rather than fried foods, 63% do not need to consider change about choosing low-fat products when available, and only 31% do not need to consider change regarding eating oily fish last week. Eighty-five percent do not need to consider change regarding basing their main meals around starchy foods, 59% do not need to consider change regarding regularly choosing wholegrain bread or rolls rather than white, 57% do not need to consider change about regularly eating wholegrain cereals with no added sugar, 53% do not need to consider change about regularly including pulses in their diet (Table 2).

Sixty-nine percent do not need to consider change regarding regularly drinking sweet drinks, 68% do not need to consider change regarding regularly eating sugar-coated breakfast cereals or adding sugar to their breakfast, 57% do not need to consider change about eating regularly cakes, sweets, chocolate or biscuits at work or home and the least 38% do not need to consider change regarding adding sugar to their drinks. The majority of the study population 78% need to consider making some change regarding regularly adding salt to food during cooking, followed by 47% need to consider making some change about regularly eating savory snacks, 36% need to consider making some change about regularly adding salt to food at the table, and 33% need to consider making some change regarding regularly eating pre-prepared meals, and the least 27% need to consider making some change about regularly eating processed meats. Sixty-five percent need to consider making some change about skipping evening meals more than once a week, 55% need to consider making some change regarding skipping meals or snack on most days, followed by 42% need to consider making some change about skipping breakfast more than once a week, and the least 38% need to consider making some change about skipping lunch more than once a week (Table 3). Seventy-five percent of the study population do not need to consider change to a healthier diet.

Regarding factors that are associated with nutritional habits: sex and profession are associated with nutritional habits. In contrast, the following factors: smoking, body mass index have no association with nutritional habits and years in job as well as age have no significant effect on nutritional habits. Thirty-five percent of males need to consider making some change to nutritional habits, and only 19% of females need to consider making some change to nutritional habits (Table 4).

Regarding factors that may affect the physical activity: chronic illness, sex, and educational level have a significant effect on physical activity. The mean score of participants with chronic illness was 7.1±6.6 in contrast to 10.3±8.5, (t test; 2.9; df 173; p value equals 0.005). The mean score for males and females were 10.7±9 and 8.2±7 respectively (t test; 2.03; df 124; p value equals 0.044). In contrast, the following factors: job profession, body mass index, age and smoking have no significant effect on physical activity (Table 5).

The following factor: sex is associated with smoking and age as well as years in job have a significant effect on smoking. The prevalence of smoking among males 49% and among females 14%. The mean age of smokers 35±4.6 (t test; 3.1; df 157; p value equals 0.000). The mean number of years in job 10.5±5.3 (t test; 2.5; df 132; p value equals 0.002). In contrast, physical activity has no significant effect on smoking and BMI, educational level, profession and diet have no association with smoking (Table 6).

Regarding BMI, 32% of the total population had normal BMI, while 29.4% were obese. Chronic illness has association with BMI. Nineteen percent of participants of chronic illness have normal BMI in contrast to 41.2% of obese participants with chronic illness. Factors that have no association with BMI include: sex, smoking, level of education and profession have no association with BMI. There is no correlation between BMI and physical activity score (Table 7).

Table 1: Characteristics of workers in governmental primary healthcare centers according to a study conducted in Jeddah, Saudi Arabia (N=200).

Characteristics	Frequency (%)	
Gender	200	
Male		74 (37)
Female		126 (63)
Type of profession	200	
Physicians and dentists		42 (21)
Nurses		67 (33.5)
Pharmacists and technicians		32 (16)
Admin and others		59 (29.5)
Chronic illness	199	
Yes		70 (35.2)
No		129 (64.8)
Nationality	200	
Saudi		199 (99.5)
Non Saudi		1 (0.5)
Smoking	199	
Smokers		53 (26.6)
Non smokers		134 (67.3)
Ex smokers		12 (6.0)
Educational level	200	
Diploma		59 (29.5)
Secondary		15 (7.5)
University		126 (63)
Diet score	200	
≤12 (≤50%)		150 (75)
>12 (>50%)		50 (25)
BMI	200	
Normal		63 (32)
Overweight		72 (36.5)
Obese		58 (29.4)
Age		

Mean ±SD	37.2 ±7.2
Median	35
Minimum	21
Maximum	60
Years in job	
Mean ±SD	12.3 ±7.3
Median	10
Minimum	1
Maximum	35
Physical activity score	
Mean ±SD	9.2 ±7.9
Median	7
Minimum	0.00
Maximum	28

Table 2: Frequency of healthy eating habits.

Healthy Eating Habits Elements	**consider making some change N (%)**	**No need to consider change N (%)**
Fruits and vegetables		
Eat at least five portions of fruits and/or vegetables every day	114 (57)	86 (43)
Eat more than 4 different varieties of fruits each week	104 (52)	96 (48)
Eat more than 4 different varieties of vegetables each week	49 (24.5)	151 (75.5)
Fats		
Choose low-fat products when available	74 (37)	126 (63)
Choose baked, steamed or grilled options when available rather than fried foods	58 (29)	142 (71)
Remove visible fat from meat or chicken	42 (21)	158 (79)
Eat any oily fish last week	138 (69)	62 (31)
Starchy food		
Base main meals around starchy foods	31 (15.5)	169 (84.5)
Regularly choose wholegrain bread or rolls rather than white	83 (41.5)	117 (58.5)
Regularly eat wholegrain cereals with no added sugar	87 (43.5)	113 (56.5)
Regularly include pulses in diet	95 (47.5)	105 (52.5)

Table 3: Frequency of unhealthy eating habits.

Unhealthy Eating Habits Elements	consider making some change N (%)	No need to consider change N (%)
Sugar		
Regularly eat sugar-coated breakfast cereals or add sugar to breakfast	64 (32)	136 (68)
Add sugar to drinks	125 (62.5)	75 (37.5)
Regularly drink sweet drinks	62 (31)	138 (69)
Eat regularly cakes, sweets, chocolate or biscuits at work or home	86 (43)	114 (57)
Salt	156 (78)	44 (22)
Regularly add salt to food during cooking	71 (35.5)	129 (64.5)
Regularly add salt to food at the table	93 (46.5)	107 (53.5)
Regularly eat savory snacks	66 (33)	134 (67)
Regularly eat pre-prepared meals	53 (26.5)	147 (73.5)
Regularly eat processed meats		
Eating habits	83 (41.5)	117 (58.5)
Skip breakfast more than once a week	75 (37.5)	125 (62.5)
Skip lunch more than once a week	129 (64.5)	71 (35.5)
Skip evening meals more than once a week	110 (55)	90 (45)
Skip meals or snack on most days		

Table 4: comparison of nutritional habits among workers in governmental primary health care centers, Jeddah, Saudi Arabia.

Variable	Nutritional habits changes		Statistical test
	No need to consider change N (%)	Consider making some change N (%)	
BMI groups			
Normal	48 (76)	15 (24)	
Overweight	55 (76)	17 (24)	χ^2 0.67; 3; p 0.88
Obese	41 (71)	17 (29)	
Smoking			
Smoker	37 (25)	16 (32)	
Non smoker	112 (75)	34 (68)	χ^2 0.9; 1; p 0.32
Sex			
Male	48 (65)	26 (35)	
Female	102 (81)	24 (19)	χ^2 6.43; 1; p 0.01
Profession			
Physicians and	37 (88)	5 (12)	
dentists	52 (78)	15 (22)	
Nurses	19 (59)	13 (41)	χ^2 8.7; 3; 0.03
Pharmacists and technicians	42 (71)	17 (29)	
Admin and other			

Age			
N, Mean ±SD	150, 37.5 ±7.5	50, 36.4 ±6.5	t-test 0.9; df 198; p 0.35
Years in job			
N, Mean ±SD	147, 12.5±7.4	48, 11.5 ±6.8	t-test 0.9; df 193; p 0.38

Table 5: Comparison between physical activity score among workers in governmental primary health care centers, Jeddah, Saudi Arabia.

Variable	N, Mean ±SD	Statistical test
Chronic illness		
Yes	70, 7.1 ±6.6	
No	129, 10.3 ±8.5	t-test 2.9; 173; p 0.005
Sex		
Male	74, 10.7 ±9.2	
Female	126, 8.2 ±7.1	t-test 2; 124; p 0.04
Level of education		
Diploma	59, 6.9 ±7.2	
Secondary	15, 14.7 ±9.4	F-test 6.3; 197; 2; p 0.002
University	126, 9.5 ±7.8	
Profession		
Physicians and dentists	42, 7.7 ±7.2	
Nurses	67, 9.1 ±8.2	F-test 0.8; 196; 3; p 0.45
Pharmacists and technicians	32, 10.6 ±9.5	
Admin and others	59, 9.5 ±7.3	
Smoking		
Smokers	53, 10.5 ±9.3	
Non smokers	134, 8.4 ±7.2	F-test 1.4; 196; 2; p 0.24
Ex smokers	12, 10.3 ±8.9	

Table 6: Comparison between smoking among workers in governmental primary health care centers, Jeddah, Saudi Arabia.

Variable	Smoking habit		Statistical test
	Smoker N (%)	**Non smoker N (%)**	
BMI			
Normal	15 (24)	48 (76)	
Overweight	18 (25)	53 (75)	χ^2 0.9; 3; p 0.83
Obese	18 (31)	40 (69)	
Sex			
Male	36 (49)	38 (51)	
Female	17 (14)	108 (86)	χ^2 29.2; 1; p 0.000
Level of education			
Diploma	13 (22)	46 (78)	
Secondary	6 (40)	9 (60)	χ^2 2; 2; p 0.36
University	34 (27)	91 (73)	
Profession			
Physicians and dentists	7 (17)	35 (83)	
Nurses	18 (27)	49 (73)	χ^2 3.2; 3; p 0.37
Pharmacists and technicians	9 (29)	22 (71)	
Admin and others	19 (32)	40 (68)	
Nutritional habits			
No need to consider change	37 (25)	112 (75)	
Consider making some change	16 (32)	34 (68)	χ^2 0.9; 1; p 0.32
Age			
N, Mean ±SD	53, 35 ±4.6	146, 38± 7.9	t-test 3.1; 157; p 0.000
Years in job			
N, Mean ±SD	52, 10.5 ±5.3	142, 13 ±7.8	t-test 2.5; 132; p 0.002

Table 7: Comparison between BMI among workers in governmental primary health care centers, Jeddah, Saudi Arabia.

Variable	BMI			Statistical test
	Normal N (%)	**Over-weight N (%)**	**obese N (%)**	
Profession				
Physicians and dentists	17 (40.5)	13 (31)	12 (28.6)	
Nurses	15 (23.4)	22 (34.4)	25 (39.1)	
Pharmacists and technicians	15 (46.9)	14 (43.8)	2 (6.3)	χ^2 15.5; 9; p 0.08
Admin and others	16 (27.1)	23 (39)	19 (32.2)	
Sex				
Male	22 (30.1)	32 (43.8)	17 (23.3)	
Female	41 (33.1)	40 (32.3)	41 (33.1)	χ^2 3.6; 3; p 0.31
Level of education				
Diploma	19 (33.9)	18 (32.1)	17 (30.4)	
Secondary	5 (33.3)	5 (33.3)	5 (33.3)	χ^2 1.9; 6; p 0.93
University	39 (31)	49 (38.9)	36 (28.6)	
Chronic illness				
Yes	13 (19.1)	27 (39.7)	28 (41.2)	
No	49 (38.3)	45 (35.2)	30 (23.4)	χ^2 12.3; 3; p 0.007
Smoking				
Smoker	15 (28.8)	18 (34.6)	18 (34.6)	
Non smoker	48 (33.3)	53 (36.8)	40 (27.8)	χ^2 0.9; 3; p 0.8

DISCUSSION:

Many researches were done on healthcare professionals, and the majority of them only involved one or two lifestyle factors, whereas in our research we evaluated the four major lifestyle habits between various professions in the primary health care centers. Alcohol has not been evaluated in this research since it is forbidden to use in the area of the study. This study aimed to find the prevalence of physical activity, smoking, BMI and dietary habits among workers in governmental primary health care centers in Jeddah, Saudi Arabia and to identify the determinants affecting the adherence to these major healthy lifestyle factors. Most of the studied lifestyle habits can be compared to previous studies. The overall prevalence of smoking (26.6%) was higher than reported rates in previous studies. In a study conducted by AlAteeq and AlArawi[2], smoking prevalence among primary health care professionals was (8.4%). This could be due to lower awareness of the harms of smoking among governmental primary health care centers workers. The smoking prevalence was higher among nurses, in comparison to physicians; this could be due to the larger population of nurses involved in this study. In this study, the mean physical activity was highest among pharmacists and technicians and lower among nurses and the least was among physicians, this could be due to less spare time and more job-related demands among physicians. Regarding weight, 40.5% of physicians had normal BMI, in contrast to 63% of Estonian physicians by Sujia et al[17]. This could be due to better health-promoting practices among physicians in Estonia. The mean BMI in our study 27 is higher than the mean reported in Al Alwan et al.[18] in which the mean BMI among physicians was 25.6 and non-physicians 24.7, this can be interpreted by the fact that the previous study was held among workers in a tertiary center and therefore their job is more active. The obesity prevalence in our study among nurses was 39.1% higher than the reported rates by Kyle RG. et al.[15] which was 25.1%. No previous studies were found to compare dietary habits with, since it is considered hard to estimate accurately a healthy from a non-healthy diet. The majority of this study population scored toward a healthy diet. It was noted that more than half of our population skipped dinner as compared to a study done by Al-Gelban KS.[19] in which half of the students ate dinner regularly. Dinner was the most skipped meal among our population compared with breakfast which was the most skipped meal by Al-Gelban KS[19]. This could be due to the exhausting work and more work hours of our population compared to school students. It was also noted in our study that lifestyle parameters in females were better in regards to smoking and diet. This can be explained by females usually being more concerned and aware about their body shapes and their health status than males. We noted no significant effect of educational level on major healthy lifestyle factors except on physical activity. In which graduates from secondary school had higher physical activity score than university and diploma graduates. This can be due to the fact that graduates from secondary school usually have less occupational positions than university and diploma graduates and therefore less job-related demands and more spare time. This finding can confirm that having more knowledge and awareness does not mean having a better lifestyle. Of interest, participants who have chronic illnesses did not have better lifestyle parameters. This may be explained that non-compliance is as well a concern among workers in healthcare. Physicians had better dietary score than nurses with a significant difference. Both had dietary habits that were better compared to other professionals. This could be due to having better knowledge and awareness from their interaction and exposure with their patients. The mean physical activity score was lower among physicians and dentists than the other professions but were noted to have an overall lower BMI than nurses. This could be due to the smaller sample size of physicians and dentists than nurses. Pharmacists and technicians were noted to be physically more active than nurses and other health professionals but had a higher smoking prevalence. Approximately one-third of our study participants were nurses and most nurses were females. Most of the nurses and other participants were Saudis, which reflects how culture influences our lifestyle. Even though healthcare professionals have higher awareness of the advantages of a healthy lifestyle, the results of this study improve that recognition and awareness are not sufficient to maintain a healthy lifestyle. In our study, multiple factors contribute to the overall non-healthy lifestyle. A major contributing factor is the lack of a healthier environment in the form of healthy food vending machines or catering among others. The long working hours and increased workload and therefore stress are also very important factors. It has been observed that as the number of working years and age increase, the dietary habits improve. This study was done in only one city and its results cannot be generalized to all governmental primary care workers. Convenient, short and simple questionnaires were used for physical activity and dietary assessment, which may not reflect an accurate comprehensive evaluation. The probability of recall bias cannot be ruled out since our results are based on a self-administered questionnaire.

CONCLUSION:

This study proved that governmental primary health care workers do not practice healthy lifestyle habits. This means that even though working in primary care centers which provide most preventive services and being aware and knowledgeable of a healthy lifestyle does not necessarily mean practicing it. Health promotion programs need to target workers in governmental primary healthcare centers for their own health benefits and therefore for better patient counseling and role modeling which ultimately lead to a better society. Obstacles to a healthier lifestyle need to be determined and assessed properly, particularly for physicians. It is recommended that health-promoting modifications in the work environment by applied. Future researches with a larger population and more governmental primary healthcare centers throughout the country should be considered.

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