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Research Article

Public Awareness of Healthy Lifestyle among Iraqi Population

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Abstract

Background: A healthy lifestyle is a way of life that lowers the risk of being seriously ill or dying early. It includes making wise choices that can help people thrive as they move through their life's journey, like eating a healthy diet and being physically active. ***Objective***: This study aims to assess public knowledge and awareness regarding healthy lifestyles. ***Methods***: A cross-sectional study was conducted among 128 people relative to primary healthcare center visitors in Wasit province in Iraq. The data was collected using a self-administered questionnaire derived from a previously published article consisting of two parts. ***Results***: In this study, around 66.4% of the sample knew about the food pyramid, and about 44.5% of them used it in their daily lives. The majority (60.6%) were eating three meals during the day, and only 44.6% skipped some meals during the day. Only one (0.8%) mentioned drinking alcohol, and 46.1% have a smoking habit. The majority (64.8%) of the sample never exercised for at least 30 minutes a day. A significant association was detected between gender and knowledge about the food pyramid (p=0.001), and a significant association was also found between smoking and the presence of chronic disease (p=0.029). ***Conclusion***: It is important for the public to be aware of healthy lifestyles. Iraqi people still need to increase their knowledge and awareness by implementing health education.

Keywords: Healthy food, Knowledge, Lifestyle, Physical activity, Smoking.

الوعي العام بنمط الحياة الصحي بين السكان العراقيين

الخلاصة

الخلفية: نمط الحياة الصحي هو أسلوب حياة يقلل من خطر الإصابة بمرض خطير أو الموت المبكر. ويشمل ذلك اتخاذ خيارات حكيمة يمكن أن تساعد الناس على الازدهار خلال رحلة حياتهم، مثل تناول نظام غذائي صحي وممارسة النشاط البدني. **الهدف**: تهدف هذه الدراسة إلى تقييم المعرفة العامة والوعي فيما يتعلق بأنماط الحياة الصحية. **الطريقة**: أجريت دراسة مقطعية على 128 شخصا من مراجعي مركز الرعاية الصحية الأولية في محافظة واسط في العراق. تم جمع البيانات باستخدام استبيان ذاتي الإدارة مشتق من مقال منشور سابقا يتكون من جزأين. **النتائج**: كان حوالي 66.4٪ من العينة يعرفون عن الهرم الغذائي، وحوالي 44.5٪ منهم استخدموه في حياتهم اليومية. الغالبية (60.6٪) كانوا يتناولون ثلاث وجبات خلال اليوم، و 6.44٪ فقط تخطوا بعض الوجبات خلال اليوم. شخص واحد فقط (0.8٪) شرب الكحول، و 46.1٪ لديهم عادة التدخين. 64.8٪ من العينة لم يمارسوا الرياضة لمدة 30 دقيقة على الأقل في اليوم. تم الكشف عن ارتباط كبير بين الجنس والمعرفة حول الهرم الغذائي (p= 0.001) ، كما تم العثور على ارتباط كبير بين التدخين ووجود مرض مزمن. **الأستنتاج**: من المهم أن يكون الجمهور على دراية بأنماط الحياة الصحية. لا يزال الشعب العراقي بحاجة إلى زيادة معرفته ووعيه من خلال تنفيذ التثقيف الصحي.

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INTRODUCTION

Health is "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" [1,2]. So, for health to be complete, it is necessary to follow a healthy style of life, like eating a diet that contains the main vital ingredients essential for body growth and health maintenance [3,4]. A healthy lifestyle is defined as a way of life that lessens the risk of being extremely ill or dying prematurely. There are a lot of benefits to following such a lifestyle for the prevention of disease occurrence, especially for preventable diseases with modifiable risk factors [5]. Cardiovascular diseases (CVD), type 2 Diabetes Mellitus (DM), and cancers can be reduced with regular exercise and consuming healthy foods like vegetables and fruits. Saving money for doctor visits and investigations is another benefit of a healthy lifestyle [6]. Studies found that people who exercised regularly, ate healthy food, and did not smoke lived longer than those who did not. The benefits of a healthy lifestyle go beyond the individual level and can help to make the environment better by decreasing the production of ultra-processed foods, which impacts greenhouse gas emissions, water insufficiency, reduced biodiversity, plastic discarded, and deforestation [7]. There are many things people can do to live a healthy lifestyle. To start with, they need to be aware of the importance of living a healthy lifestyle, monitoring their food intake, getting enough exercise, and learning to manage their stress properly [8]. In Iraq, no recent study was published regarding the assessment of healthy lifestyle behaviors. However, some studies mention the prevalence of non-communicable diseases (NCDs) in Iraq, which are often caused by poor diet, physical inactivity, tobacco use, and harmful alcohol use, leading to metabolic and physical changes including hypertension, diabetes, and overweight and obesity [9]. Other studies have focused on the importance of healthy lifestyle behaviors in promoting weight loss, preventing weight gain, and enhancing overall health [10]. Some studies have evaluated physical activity, eating behavior, quality of life, general health, and mood states during COVID-19 confinement in Iraq [7,11]. Additionally, a study has been conducted to determine factors associated with healthy lifestyle behaviors among high school students in Iraq [12]. However, there are no recent studies that specifically assess healthy lifestyle behaviors in the adult population of Iraq. So, the present study aimed to assess the Iraqi people's awareness of a healthy lifestyle and the associated factors. The results will help the Ministry of Health (MOH) plan awareness campaigns for the Iraqi population, especially for those with a deficit in knowledge. Increasing population knowledge may lead to increased practices that help prevent serious conditions like chronic diseases.

METHODS

Study design and setting

An analytical cross-sectional study was conducted during the period of March 1–April 1, 2023. Data were collected from 128 sequential samples of different sociodemographic features in Wasit province (southeast Iraq). People visiting Primary Health Care Centers (PHCCs) who were relatives of patients and had no complaints were included in the study. Those who can read and write, speak Arabic, and are aged 15 years old and above; exclusion criteria include those who refused to participate or were in a hurry to get away.

Sample size and sampling technique

Sample size was calculated according to the sample size equation for a cross-sectional study ($n = Z^2P (1-P)/d^2$). The minimum required sample size was 83 considering the prevalence of healthy exercise (5.7%) in the adult Iraqi population [13]. A convenient sample was collected from people visiting PHCCs.

Data collection

The data collection tool was designed by translating a questionnaire from a previously published article [14]. An expert in English did the translation. The questionnaire was pretested on five eligible people visiting PHCCs to test the suitability of filling time, clarity of questions, and understandability by them. This self-administrated questionnaire consisted of two parts. Part one contains the socio-demographic characteristics (gender, age, weight, height, place of living, educational level, occupation, number of family members, marital status, and perceived socioeconomic status) and history of chronic diseases (hypertension, diabetes mellitus, heart diseases, and the option "other" for diseases not mentioned in the list). Part two contains questions related to awareness of lifestyle and personal health behaviors (food habits, drinking caffeinated drinks, smoking habits, alcohol drinking, and exercise practice). The Body Mass Index (BMI) was calculated from the given weight and height according to the formula: BMI=Weight (kg)/Height (m^2). All participants were classified according to their BMI as underweight, normal, overweight, or obese according to the World Health Organization (WHO) classification. People with a BMI less than 18.5 kg/m^2 were considered underweight, those between 18.5 and 24.4 kg/m^2 were of normal weight, 25–29.9 kg/m^2 were overweight, and ≥30 kg/m^2 were considered obese [9].

Ethical consideration

The study protocol was evaluated and approved by the local research ethics committee of the College of Medicine at Wasit University. All participants

consented before answering the questions, and they were informed that the obtained data would be used for research purposes only with no mention of their identification information like names or addresses.

Statistical analysis

Data in this study were analyzed by SPSS version 26 (Statistical Package for Social Sciences). The numerical variables were represented by mean and Standard Deviation (SD) while categorical variables by frequency and percentage. The association between two categorical variables was assessed by using the Chi-square test considering a p-value < 0.05 a significant.

RESULTS

In this study, data were collected from 128 Iraqi participants with a mean±SD age (38.79±11.47) years old. The age ranges from 15 to 62 years. Table 1 shows the sociodemographic features of the study sample. Males represented about 80.5% of the total sample, and around three-quarters (75.8%) lived in the city centers. The majority of the sample (93%) had college or higher education. Most of the participants (67.2%) were engaged in government jobs, while only 6.3% had free jobs; the remaining 26.6% were either students or unemployed.

Table 1: Socio-demographic features of 128 study participants.

Variables		Frequency *n*(%)
Gender	Male	103(80.5)
	Female	25(19.5)
Place of living	City center	97(75.8)
	District and subdistrict	23(18.0)
	Village and periphery	8(6.3)
Educational level	Secondary school	9(7.0)
	College and higher education	119(93.0)
Occupation	Governmental job	86(67.2)
	Free employer	8(6.3
	Not working or student	34(26.6)
Socioeconomic status	Excellent	11(8.6)
	Very good	31(24.2)
	Good	65(50.8)
	Acceptable	19(14.8)
	Poor	2(1.6)
Marital status	Married	81(63.3)
	Unmarried	47(36.7)
Number of family members	Less than 5	63(49.2)
	More than 5	65(50.8)

Around half of the sample (50.8%) mentioned that they had a good economic status, while only 2 out of 128 (1.6%) were from the poor economic class. More than half (50.8%) belonged to large families with more than five family members, and 63.3% were married. According to the BMI values, the largest percentage of the sample (43%) complained of being overweight, followed by obesity at about 28.1%. Those participants with normal BMI were represented (27.3%), as shown in Figure 1.

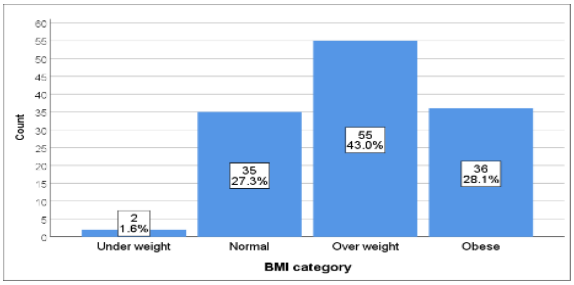

Figure 1: Body mass index category among 128 study participants.

Figure 2 shows the presence of any chronic disease among the study sample. More than half of the sample (56.3%) has no chronic conditions. The largest percentage (18%) of the sample had been previously diagnosed with hypertension, followed by 7.8% who had diabetes mellitus (DM).

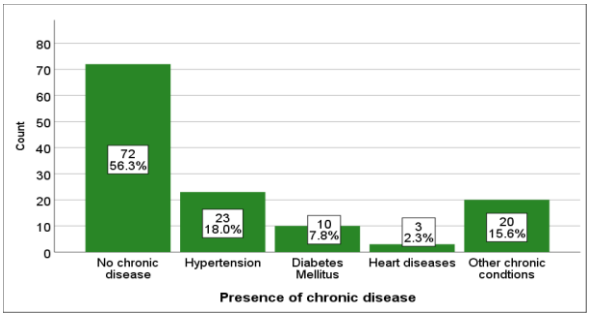

Figure 2: Distribution of the history of chronic disease among the study participants.

Table 2 found that 85/127 (66.4%) of people said that they know about the food pyramid, and around 44.5% use it in their daily lives. Most of the sample (60.2%) was eating the regular three main meals per day as usual, and about 44.5% stated escaping some meals during the day. The mean number of skipped meals was 2.72 per week. The majority of the people (85.9%) preferred homemade food to food made outside the home, like in restaurants. The treated filter water was the source of drinking water for 62.5% of the sample, and only 2 (1.6%) used tap water for drinking and food preparation. The largest percentage of the sample (43%) used to drink caffeinated drinks like coffee every day, and only one person mentioned drinking alcohol during the last month. Regarding smoking habits, more than half (53.9%) of the sample were not smokers. When participants were asked about their regular exercise of at least 30 minutes per day, about 64.8 percent never exercised routinely, while one quarter (25%) exercised less than three times per day.

Table 2: Answers to questions related to a healthy lifestyle among 128 study participants

Questions		Frequency *n*(%)
Do you know the food pyramid	Yes	85(66.4)
	No	43(33.6)
Did you use it in your daily routine of food preparing	Yes	57(44.5)
	No	34(26.6)
	Maybe	37(28.9)
What are your usual daily meal numbers?	2	37(28.9)
	3	77(60.2)
	4	11(8.6)
	5	3(2.3)
Did you skip some meals?	Yes	57(44.5)
	No	34(26.6)
	Maybe	37(28.9)
What is the preferable type of food?	Homemade	110(85.9)
	Restaurant made	18(14.1)
What is the source of drinking water?	Bottles	46(35.9)
	Filter	80(62.5)
	Tap water	2(1.6)
Do you consume caffeinated drinks (like coffee, tea, and soda)?	Never	24(18.8)
	Less than 3/week	27(21.1)
	More than 3/week	22(17.2)
	Every day	55(43.0)
Did you drink alcohol during the last month?	Yes	1(0.8)
	No	127(99.2)
Smoking habits	Yes	59(46.1)
	No	69(53.9)
Did you exercise regularly for 30 min/ day?	Never	83(64.8)
	< 3 weeks	32(25.0
	> 3 weeks	11(8.6)
	Daily	2(1.6)
Questions	Min-Max values	Mean±SD
Number of skipped meals/ week	0-10	2.72±2.34
Number of eating fast food/ week	0-7	1.97±1.74
Number of eating vegetables/week	0-33	5.74±3.90

Only two people maintained a routine of healthy exercise every day. The mean frequency of eating fast food was 2.97 times per week, while vegetables were consumed a mean of 5.74 times per week among the study sample. Table 3 showed a significant association between gender and knowledge of the food pyramid with a p=0.001. Most males (73.8%) mentioned that they knew about food pyramids, compared to only 36% of females. 64% of females didn't know anything about the food pyramid.

Table 3: Association of gender with knowledge of the food pyramid

Gender	Knowledge about the food pyramid		*p*-value
	Yes *n*(%)	No *n*(%)	
Male	76(73.8)	27(26.2)	0.001
Female	9(36.0)	16(64.0)	

Although a higher percentage (74.7%) of those who didn't practice regular exercise complained of overweight and obesity compared to 64.5% of those who regularly exercised, this difference was statistically not significant with a p=0.053 as shown in Table 4.

Table 4: Association of regular exercise with body weight

Regular exercise	Weight according to BMI *n*(%)				*p*-value
	Underweight	Normal	Overweight	Obese	
yes	0(0.0)	16(35.6)	22(48.9)	7(15.6)	0.053
No	2(2.4)	19(22.9)	33(39.8)	29(34.9)	

In this study, Table 5 shows that the presence of chronic disease wasn't associated with the weight category of the participants (p=0.739). All underweight people have no chronic diseases. More than half (57.1%) of normal-weight people also don't have any chronic diseases. Even the highest percentage of people with overweight and obesity don't have chronic diseases, with percentages of 60% and 47.2%, respectively.

Table 5: Association between weight category and the presence of chronic disease among the study participants

BMI category	Chronic diseases *n*(%)					*p*-value
	No	HT	DM	Heart disease	Other	
Underweight	2(100)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0.739
Normal	20(57.1)	5(14.3)	3(8.6)	0(0.0)	7(20)	
Overweight	33(60)	11(20)	5(9.1)	1(1.8)	5(9.1)	
Obese	17(47.2)	7(19.4)	2(5.6)	2(5.6)	8(22.2)	

Table 6 demonstrates the association between smoking and having a chronic disease. A significant association was present between smoking and having a chronic disease, with a P-value of 0.029. Around 66.7% of those who were non-smokers mentioned having no chronic diseases at all, while 44.1% of the smokers didn't have any chronic conditions. Hypertension was diagnosed in nearly one-quarter (25.4%) of smokers, compared to only 11.6% of non-smokers.

Table 6: Association between smoking habits and the presence of chronic disease among the study participants

Smoking	Chronic diseases *n*(%)					*p*-value
	No	HT	DM	Heart disease	Other	
Yes	26(44.1)	15(25.4)	4(6.8)	3(5.1)	11(18.6)	0.029
No	46(66.7)	8(11.6)	6(8.7)	0(0.0)	9(13.0)	

DISCUSSION

The majority of the study samples were male, married, living in city centers, with higher educational degrees, and working in government jobs. Nearly half of them

were of good socio-economic class and had fewer than five family members living in the same house. The majority of the participants were overweight or obese, and nearly half mentioned no chronic diseases. The food pyramid is a visual representation of the recommended daily intake of different food groups [15]. Different countries and organizations have used the food pyramid as a tool to promote healthy eating habits. In this study, more than half of the participants (66%) mentioned knowing about the food pyramid, while only 44% stated they use it in their daily lives. This result was lower than Americans with (80%) recognition of the food pyramid [16]. A study conducted among adolescent students in London and Canada found that knowledge scores about healthy nutrients were, on average, relatively low, with an average total knowledge score of 54.6% [17]. In Arabic countries, a study conducted in 2020 on samples from Syria, the Kingdom of Saudi Arabia, Jordan, and Egypt, found that 73.1% have inadequate knowledge about healthy nutritional food [18]. Having good knowledge of the food pyramid is important for several reasons, including building healthy eating habits, developing a balanced diet, maintaining good health, and reducing the risk of chronic disease [19]. The usual number of meals per day was three in most of the samples, even though about 44% skipped some meals. Escaping meals was associated with decreasing body weight in previous studies. It was found that eating 1–2 meals a day was better for losing weight than eating more frequent meals [20-22]. The majority of the study sample prefers eating homemade food to eating at a restaurant. It may be due to its healthy ingredients, lower cost, and less exposure to microorganisms, in addition to gathering family members [23]. Although the previous study found people prefer to eat outside the home for many reasons, like trying new dishes, enjoying being away from routine, or feeling exhausted from work and unable to cook at home [24], a higher percentage of the participants mentioned consuming caffeinated drinks every day. This may be related to the higher percentage of participants with higher educational degrees and those with government jobs who may need to be more alert and improve their mental status. A study conducted on university students in Bahrain found that caffeine, in any form, was consumed by 98% of students [25]. Even consuming a small amount of caffeine can lead to some side effects in some people, like sleep disturbances and irritability. High amounts of caffeine can lead to rapid or irregular heartbeats, breathing problems, osteoporosis, and rarely death [26, 27]. A cross-sectional study conducted on active-duty United States military personnel examined the prevalence of caffeine consumers, daily caffeine consumption, and factors associated with caffeine use. The study found that 87% of participants reported using products containing caffeine ≥1 least once per week, with coffee and soda being the most frequently employed [28]. Nearly two-thirds of this study sample never exercised (even for at least 30 minutes per day). In a study of a multi-ethnic Asian population, 83.4% of respondents met recommendations for sufficient physical activity [29]. A pooled analysis of 358 population-based surveys with 1.9 million participants found that the global age-standardized prevalence of insufficient physical activity was 27.5% in 2016 [30]. A population-based cross-sectional study of urban adults found that the proportion of physically inactive adults in the study setting was 45.1% [31]. Being in a high socioeconomic status, which indicates using cars for traveling, and engaging in office work may all lead to a sedentary lifestyle and decreased healthy exercise. Even many previous studies found a positive association between physical activity and socioeconomic class in different age groups [32-34]. A sedentary lifestyle can lead to many health problems related to weight gain, increased cholesterol levels, increased blood pressure, and metabolic diseases. It can be a risk factor for chronic conditions like diabetes, cardiovascular diseases, cancer, and early mortality [35]. A significant association was found between gender and knowledge about the food pyramid; males were more knowledgeable about this pyramid. This may appear due to 80% of the sample being male. There may be differences in how men and women use the Food Guide Pyramid to make healthy food choices. This result conflicted with a previous study conducted among Urban food purchasers for homes, which found that men on average have lower nutrition knowledge compared to women because men in that study were less likely to purchase food for their homes than females [36]. There is no significant association between body weight class with exercise, and the presence of chronic diseases. This may be related to reverse causality, as many people may lose weight and be active after they are diagnosed with a chronic disease [37]. These results were contrary to what was discovered by previous studies, which found a significant association between body weight and the mentioned two variables [38-40]. Smoking was significantly associated with the presence of chronic disease among study samples. Well-established evidence shows that the incidence of cancer, cardiovascular disease, chronic respiratory disease, and diabetes share modifiable risk factors such as cigarette smoking [41]. It was found that patients with chronic conditions were ten times more exposed to cigarette smoking than non-patients, and the effects of smoking can occur through different mechanisms like inflammation, oxidation, endothelial dysfunction, and DNA distraction [42,43]. The practical implication of this study includes the benefit of the results for policymakers in MOH to assess the current situation of population awareness in order to focus their programs toward those lifestyles that need more knowledge. The

main strength of this study is the baseline data for different healthy lifestyles, including diet, physical activity, smoking, and alcohol drinking, among the population in Iraq from different socio-economic classes. One of the most important limitations of this study was the higher percentage of males relative to females, which may be considered bias. The BMI was calculated depending on the respondents' memory, which can affect the BMI results. The sample was collected from only one province in Iraq, which makes it difficult to generalize the results to the Iraqi population. So, we suggested further studies with samples from different provinces and equal numbers of both genders.

Conclusion

Healthy lifestyles are an essential public issue that everyone should be aware of. Despite the fact that the majority of the sample was aware of the food pyramid, many of them did not use it in their daily life. They were unaware of the necessity of exercise for their health and continued to smoke. Their smoking behaviors were linked to the occurrence of chronic illnesses.

Recommendations

Iraqis still need to improve their knowledge and awareness by including health education into the school curriculum and providing scientific evidence of its usefulness in assisting pupils to adopt healthy eating and physical activity practices. It is also encouraged to use social media and healthcare personnel to distribute knowledge throughout the community in order to expand research and clarify the population's precise food habits and exercise habits.

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Conflicts of interest

There are no conflicts of interest.

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Data sharing statement

Supplementary data can be shared with the corresponding author upon reasonable request.

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