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Role of Primary Healthcare Centers in Prevention of Overweight and Obesity, Baghdad, 2025.

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Abstract

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Background: About two-thirds of the population worldwide is obese or overweight, and if the current trajectory continues, 50% of the population will be obese by 2030. Community health centers and primary care providers are leading the charge against this epidemic.
Aim of study: To report on sharing primary healthcare centers in the prevention of obesity via knowledge, attitude, and practice of primary healthcare physicians.
Methods: A cross-sectional study with analytical components was conducted, involving a total of 224 primary healthcare physicians for the period from November 1, 2024, to April 1, 2025. In addition to demographic data, knowledge, attitude, and practice were obtained using Likert scales. Scores of knowledge and attitude out of scope, good and poor for knowledge, and positive and negative attitudes were not included in the analysis.
Results: In this study, 43.8% of eligible participants showed a good level of knowledge of preventing and managing obesity, 67.9% showed a positive attitude, and 38.8% showed a good practice level. Higher qualifications were significantly associated with good knowledge, but not with attitude or good practice.
Conclusion: Low figures of good knowledge, positive attitude, and good practice were observed in this study. Reforms in training for undergraduates and postgraduates in medical schools are of importance.

1. Introduction

A national STEP survey (Stepwise approach to non-communicable diseases risk factor surveillance) found that 31.8% and 33.9% of Iraqi adults were overweight (BMI 25-29.9 kg/m2) and obese (BMI ≥30 kg/m2), respectively.1 The reported figures, i.e., 65.7% for overweight and obesity, are of extreme obesity prevalent in the Middle East region. It reflects an obesity epidemic.2 The situation is due to rapid urbanization, sedentary lifestyle, increasing calorie-dense food (oil, sugar, and processed food), and cultural norms, e.g., heavy body type is favored. Low physical activity, dependency on cars, and limited public health exercise infrastructure are additional factors that increase obesity.3 Recently, it was reported that the type of dressing affects the body weight of females by multiple mechanisms.4 The high prevalence of overweight and obesity is deeply intertwined with rising hypertension, diabetes, and cardiovascular disease (CVD). Obesity is directly associated with the risk of developing dyslipidemia, type 2 diabetes mellitus (T2DM), hypertension, and sleep disorders, which are well-known CVDs 5 Many studies worldwide have declared the significant association between obesity and mortality, with a decrease in the life expectancy of 5-10 years.6 - 8 Obesity can be prevented and treated in the community through health education and behavior interventions for achieving and maintaining healthy body weight and suggesting some remedial measures at the appropriate time and during the first level contact at PHCCs.9, 10 A well-documented barrier to obesity care is weight bias and stigma in primary healthcare settings where negative outcomes have included intervention avoidance, shorter visits, fewer screenings, missed diagnoses, and patient reports of feeling disrespected, unheard, and unwelcome. 11, 12 Iraq has adopted

primary health care (PHC) as a central health policy. However, primary healthcare centers (PHCCs) in Iraq lack structured obesity prevention programs and community outreach. 13 This study was carried out to report on the sharing of PHCCs in the prevention of obesity via knowledge, attitude, and practice of primary healthcare physicians in PHCCs.

2. Materials and methods

A total of 224 physicians in PHCCs participated in this cross-sectional study conducted from November 1, 2024, to April 1, 2025. They were chosen through a multistage random sampling method. The Al-Rusafa area of Baghdad was randomly selected. Six out of 11 health districts were chosen, and five PHCCs were selected from each district. All physicians in the chosen PHCCs took part in the study.

The sampling technique was done as follows:

369 healthcare physicians were working in the PHCCs belonging to Al-Rusafa Health Directorate.

To calculate the sample size for a cross-sectional study with a finite population, we used the following formula 14: n =

$$\frac{e^2 * (N-1) + Z^2 * P * (1-P)}{}$$

where:

N: It's the total population (369 physicians); Z: It's the Z-value belonging to the desired confidence level (for confidence of 95%, Z=1.96); P: It's the estimated proportion of the population with the characteristic of interest (unknown), we used P = 0.5; e: It's the margin of error (commonly 5%, or 0.05).

According to this calculation, the initial sample size was determined to be 187 physicians. To account for a 20% non-response rate and to increase the power of the study, the final sample size was adjusted to 224 physicians.

Data collection: A questionnaire from prior materials [5] was used. In addition to demographic data (age, sex, experience, etc.), knowledge, attitude, and practice were obtained using Likert scales. Knowledge was categorized into poor and good. Attitude and practice were dichotomized into positive, negative, poor, and good practice, respectively. Scores of knowledge and attitude out of scope, good and poor for knowledge, and positive and negative for attitude, were not included in the analysis.

Ethical considerations: The research was executed in compliance with the ethical norms established by the Scientific Committee in the Department of Community and Family Medicine, subsequently endorsed by the Council of the College of Medicine at Baghdad University, and in line with the Helsinki Declaration of 1975, as amended in 2013. A facilitation letter was acquired from the College of Medicine and delivered to the Al-Rusafa Health Directorate, which was thereafter provided to the management of each designated PHCC. All participants were verbally informed of the study and requested to grant consent to partake in it. All personal information was kept anonymous. Data was utilized solely for this investigation.

Statistical analysis: Chi-square test was used to examine the impact of independent factors (sex, marital status, specialty, qualification) on knowledge, attitude, and practice. Student's t-test was done to examine differences in knowledge, attitude, and practice due to age, years since graduation, and experience in PHCCs. $P < 0.05$ was considered significant.

3. Results

In this study, 43.8% of eligible participants showed a good level of knowledge of preventing and managing obesity, 67.9% showed a positive attitude, and 38.8% showed a good practice level, as shown in Table 1.

Table 1: Distribution of knowledge, attitude, and practice among primary care physicians

Variable	No.	%
Knowledge		
Good	98	43.8
Poor	22	9.8
Attitude		
Positive	152	67.9
Negative	21	9.3
Practice		
Good	87	38.8
Poor	137	61.2

As shown in Table 2, the mean of knowledge level was significantly higher in younger physicians (33.5 versus 38.3 years, P= 0.01) and in those who had more experience in PHCCs (8.5 versus 5.4 years, P= 0.001). Negative attitude was seen significantly higher among those who graduated earlier (11.9 versus 10.7 years, P= 0.02) and those who had more experience in PHCCs (7.9 versus 6.9 years, P= 0.009). Regarding practice, younger physicians experience a better practice level than others (32.2 versus 39.4 years, P = 0.001).

Table 2: Impact of age, years after graduation, and experience in PHCCs on knowledge, attitude, and practice

Variable	Knowledge		Attitude		Practice	
		Mean (SD)		Mean (SD)		Mean (SD)
Age	good	33.5 (8.6)	Positive	36.1 (4.1)	Good	32.2 (7.2)
	poor	38.3 (6.2)	negative	37.6 (4.3)	poor	39.4 (5.5)
	t= 2.6, d.f.=118, p=0.01		t= -1.5, d.f.=171, p=0.9		t= 8.4, d.f.=222, p=0.001	
Years after graduation	good	11.5 (3.7)	positive	10.7 (2.2)	Good	11.7 (3.2)
	poor	12.4 (3.4)	Negative	11.9 (2.8)	poor	12.2 (3.1)
	t= 1.9, d.f.=222, p=0.05		t= 2.2, d.f.=171, p=0.02		t= 1.6, d.f.=222, p=0.2	
Experience in PHCCs	good	8.5 (1.8)	Positive	7.9 (1.2)	Good	7.7 (2.3)
	poor	5.4 (1.5)	Negative	6.9 (1.7)	poor	7.1 (2.5)
	t= 14.5, d.f.=222, p=0.001		t= 3.4, d.f.=222, p=0.009		t= 1.8, d.f.=222, p=0.07	

Higher prevalence of good knowledge was seen significantly among family medicine practitioners (61.7%, P= 0.001), those who completed higher education (56.6%, P= 0.001), physicians who had private work (55.5%, P= 0.001), and those who depended on academic sources for knowledge (49.4%, P= 0.004). Higher prevalence of positive attitude was seen significantly among family physicians (80.9%, P= 0.001), and those who completed a bachelor's degree (62.2%, P= 0.03). Higher prevalence of good practice level was seen significantly among general practitioners (58%, P= 0.001), and those who completed higher education (48.7%, P= 0.03).

Table 3: Distribution of independent variables on knowledge, attitude, and practice

Variable	Knowledge (good)		Attitude (positive)		Practice (good)	
	No. (%)	P value	No. (%)	P value	No. (%)	P value
Sex						
Male	25 (35.7)	0.1	40 (57.1)	0.1	22 (31.3)	**0.1**
female	73 (47.4)		112 (68.8)		65 (42.2)	
Marital status						
Single	13 (40.6)	0.1	19 (59.4)	0.5	12 (0.3)	**0.3**
Specialty						
FM	58 (61.7)	0.001	76 (80.9)	0.001	49 (42)	**0.001**
GP	40 (30.8)		76 (58.5)		130 (58)	
Qualification						
Bachelor	55 (37.2)	0.001	92 (62.2)	0.03	50 (33.8)	**0.03**
Higher education	43 (56.6)		60 (33.9)		37 (48.7)	
Private sector						
Yes	66 (55.5)	0.001				
Source						
Academic	81 (49.4)	0.004				

4. Discussion

Pillars of PHC are 1st one is Appropriate Technology (using simple, cost-effective, culturally accepted tools and methods suitable for the local community), e.g., BMI, waist measurement, locally adapted dietary guidance, mobile health, and school-based growth monitoring. 2nd one is Community Participation (involving individuals and communities in identifying problems, planning, and implementation), e.g., health education campaigns, community working groups, exercise events, and nutrition education workshops. 3rd one is intersectoral cooperation (collaboration among multiple sectors beyond health education), e.g., the education sector, the agricultural and food industry, urban planning, media, and religious institutions. 15

This study showed that 43.8% of physicians in PHCCs got good knowledge of preventing and managing obesity. It is higher than that reported in Saudi Arabia (36%).16 The observed figure (43.8%) reflects a prominent advance in Iraq as knowledge of preventing and managing obesity, as reported findings of no composite good knowledge percentage among primary care physicians a decade ago.17 This progress (prominent rate of good knowledge) might be explained by of efforts of the Ministry of Health in training courses for physicians in PHCCs. However, still College of Medicine still runs training students by specialties other than family medicine.

Positive attitude toward preventing and managing obesity was noticed among 67.9% of primary care physicians, i.e., identifying obesity as a chronic disease. It is lower than that reported in Sweden (91%) 18 and in Saudi Arabia (100%) [16]. This difference might be attributed to neglecting the continuity of learning and activities within PHCCs. Good practice (early identification, patient education and counselling, and community and family engagement) was 38.8%. It is lower than reported in the world (87%). 19

The difference might be attributed to training deficiency, data coverage is uneven, and quantitative data e.g., exact percentage for prevention and counselling, remains limited. Higher qualifications were significantly associated with good knowledge (p=0.001) and were not associated with attitude (p=0.03) and good practice (p=0.03). This finding might be explained by the fact that postgraduate curricula concentrate on classical health problems in Iraq, and obesity has become a prominent and growing public health problem in Iraq. 1,20,21

In some medical schools, undergraduate rotations in PHCCs are supervised by pediatricians and gynecologists. Pediatricians and gynecologists' specialists contribute valuable discipline-specific expertise, and the lack of supervision by trained family physicians can limit students' exposure to the holistic, comprehensive, and continuity-based approach that defines high-quality primary care.

5. Conclusions

Low figures of good knowledge, positive attitude, and good practice were observed in this study. Reforms in training for undergraduates and postgraduates in medical schools are of importance.

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Conflicting Interest

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