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AWARENESS OF HEALTH CARE WORKERS TOWARDS ANTI-OBESITY MEDICATIONS IN A SAMPLE OF HOSPITALS IN AL-DIWANIYAH PROVINCE, IRAQ

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Abstract: Background: The most common medical condition in low-, middle-, and high-income countries is obesity. Thus, diet, lifestyle, and anti-obesity drugs are becoming popular adjuvant treatments for this medical condition. Knowing the community's opinion and awareness is crucial. Materials and methods: This cross-sectional study was conducted at Al-Diwaniyah province hospitals. A convenience sample of 200 health care workers in Al-Diwaniyah province hospitals who are enrolled in the three hospitals (Al-Diwaniyah teaching, the general Al-Hamiza, and the general Al-Shamia). This study includes health care workers (HCWs) of both genders and ages over 20 years of morning shift. While this study excludes those with an educational level below secondary school, administrative staff were excluded from the study. The data collect started from the 3rd of November 2023 till the 13th of February 2024. Results: The results of this study indicate that 52.5% of health workers have a moderate awareness score, followed by 24.5% of the participants have a poor awareness score, and only 23.0% of HCWs have a good awareness score. the results of this study reveal that there is significant relationship between demographic characteristics and overall awareness score (P. value <0.05), except for residence. Conclusions: The study report that most HCWs have a moderate awareness about anti-obesity drugs. These results explain that old age, males' gender, high education and physician have good assessment scores for awareness about anti-obesity drugs. The study recommends developing and focusing on community-based educational programs and campaigns on anti-obesity medications to improve their views on obesity management.

Keywords: Obesity, medications, health care workers

Introduction

Overweight and obesity are becoming more commonplace globally; around one-third of all people are now considered overweight or obese. Obesity negatively impacts almost all bodily functions and is linked to a number of disease states, including diabetes, heart disease, cancer, a variety of musculoskeletal conditions, and poor mental health [1].

In 2016, it was projected that 39% of individuals worldwide were obese, and this percentage has been steadily rising in recent years [2]. The health effects of obesity follow the rise

in obesity prevalence since obesity is a significant risk factor for non-communicable illnesses including diabetes, musculoskeletal disorders, cardiovascular disease, and even certain types of cancer [3].

For over a millennium, the impact of obesity on both morbidity and death has been recognized. Hippocrates noted that "naturally fat people are more likely than lean people to die suddenly." Over the last 30 years, there has been a significant rise in the incidence of obesity and overweight. According to recent statistics, 650 million persons worldwide are fat and over 1.9 billion adults are overweight. Obesity and excess weight are linked to almost 2.8 million deaths annually. Between 1998 and 2018, there was a sharp increase in the incidence of obesity because to sedentary lifestyles and high calorie diets [4].

Consequently, reducing obesity has the potential to improve patient quality of life while also easing the financial and social burden on the healthcare system [5]. The basis for weight reduction is the lifestyle change strategy. Furthermore, in the event that this method fails to produce a suitable reduction in weight, other methods such as medication, medical devices, and/or bariatric surgery may be taken into consideration [6]. With the advancement of pharmacotherapy in recent years, several FDA-approved medications may be employed. Clinically, the safety and tolerability of medications may be used to assess their selection and long-term usage [7]. The five medications licensed to treat obesity are liraglutide, orlistat, phentermine-topiramate, semaglutide, and naltrexone-bupropion. Semaglutide produced the highest percentage of weight reduction (10% body weight decrease) when compared to a placebo: With semaglutide, 75.3% compared to 27.0% with the latter [8].

Methods

Study design and setting:

This cross-sectional study was conducted at Al-Diwaniyah province hospitals (Al-Diwaniyah teaching, the general Al-Hamiza, and the general Al-Shamia). The data collect started from the 3rd of November 2023 till the 13th of February 2024.

Sampling Technique

A convenience sample (Non-random sampling technique) of 200 health care workers in Al-Diwaniyah province hospitals who are enrolled in the three hospitals formations mentioned previously. Of 200 HCWs, 123 HCWs belonging to Al-Diwaniyah teaching hospital, 54 HCWs belonging to the general Al-Hamiza hospital, and 23 HCWs belonging to the general Al-Shamia hospital).

Inclusion and exclusion criteria:

This study includes health care workers of both genders and ages over 20 years of morning shift. While this study excludes those with an educational level below secondary school, administrative staff were excluded from the study.

Ethical consideration:

The study was conducted with the ethical principles. It was carried out with health care workers' verbal approval before sample was taken. The study protocol and the subject information and consent form were reviewed and approved by the ethics committee in Southern Technical University according to the document number 7/27/2087 (including the number and the date in 31/10/2023) to get this approval.

Data collection technique:

After acquiring an official agreement. After converting the questionnaire into Arabic, the local language, and employing closed-ended questions, the data was gathered through in-person interviews with every healthcare worker. following an explanation of the study's goals and an assurance that the information collected will be kept confidential. The researcher filled out a structured questionnaire, which was used to interview participants and gather data. The questions were asked in plain Arabic. Every interview lasted between fifteen and twenty minutes.

Variables and measurement:

- Dependent variable: Total awareness score.
- Independent variables: demographic variables (age, gender, educational level, and residence), and occupational variables (Career title, health facility, and experience years)

Scoring Criteria

The scale of the two levels was rated on the 2 points (Likert respondent scale) it was scored as a scoring of agreed about by assigning a score of (2) for "correct answer", (1) for "incorrect answer". Regarding overall assessment score for awareness of healthcare workers, were 27 items so the Minimum Score= 27, Maximum Score= 54, and the Median Score = 41. A score of more than 75% was considered good awareness (>=47 score), 50-75% moderate (41-46.5 score), and less than 50% was taken as poor awareness (<41 score) [9].

Statistical Analysis:

The data through the questionnaire, the information for each question was transferred to code sheets, the data was entered into the personal computer, and then the data was analyzed by the statistical package available from IBM-SPSS-27 (Software company). Data were showed in simple measures of frequency, percentage, mean, standard deviation, and range (minimum and maximum values). The significance of the difference for different percentages (qualitative data) was tested using the Pearson Chi-square test (χ^2-test). Statistical significance was taken into account when the P-value was equal to or less than 0.05.

Result and Discussion

In table 1, the results of this study indicate that most health care workers are aged <=25 (44.0%), followed by those aged 26-30 (25.5%), while lowest percentage (6.0%) of HCWs are aged >45 years. The mean of age 29.9±8.7 years. The gender ratio is 51.5% female to 48.5% male. Most HCWs live in cities (84.5%) compared to rural (15.5%). The highest proportion has a diploma (40.5%), followed by secondary (20.0%), bachelor's (28.5%), and higher (11.0%).

Table (1): The distribution of health care workers according to demographic characteristics

Demographic characteristics of HCWs		**No.**	**%**
Age groups	<=25 years	88	44.0
	26-30 years	51	25.5
	31-35 years	17	8.5
	36-40 years	16	8.0
	41-45 years	16	8.0
	>45 years	12	6.0
	Mean ± SD (Range)	**29.9±8.7 (21-59)**	
Gender	Male	97	48.5
	Female	103	51.5
Residency	Rural	31	15.5
	Urban	169	84.5
Educational level	Secondary	40	20.0
	Diploma	81	40.5
	Bachelors	57	28.5
	Higher Education (Higher Diploma, Master, and PhD)	22	11.0

In table 2, the present results reveal that the majority of workers are nurses (54.0%), followed by physicians (16.5%), pharmacists (12.0%), medical assistants (10.5%), medical technicians

(3.5%), and pharmacist assistants (3.5%). Regarding health facility, the results report that counselling clinics make up 39.5%, followed by 18.5% emergency unit, 15.0% Medical wards, 12.0% Pharmaceutical departments, 10.0% ICUs, and 5.0% operations halls. Most HCWs (66.5%) have less than 5 years of experience, followed by 6-10 years (11.0%), over 20 years (8.0%), 11-15 years (7.5%), and 16-20 years (7.0%).

Table (2): The distribution of health care workers according to occupational characteristics

Occupational characteristics of HCWs		**No.**	**%**
Career title	Physician	33	16.5
	Pharmacist	24	12.0
	Nurse	108	54.0
	Medical technician	7	3.5
	Medical assistant	21	10.5
	Pharmacist assistant	7	3.5
Health facility	Medical wards	30	15.0
	Operations Hall	10	5.0
	ICU	20	10.0
	Emergency unit	37	18.5
	Counselling clinics	79	39.5
	Pharmacy departments	24	12.0
Experience years	<=5 years	133	66.5
	6-10 years	22	11.0
	11-15 years	15	7.5
	16-20 years	14	7.0
	>20 years	16	8.0
	Mean ± SD (Range)	**6.9±8.4 (1-39)**	

Table 3 shows the results found that 11.0% have used such medications, while 89.0% have not. Also, 55.0% of HCWs aware about anti-obesity drugs previously. It appears that awareness dissemination may be lacking since only 27.0% reported formal training or education on these medications. Interestingly, 58.5% of respondents thought anyone could lose weight with anti-obesity medications, and the same percentage thought they could lose 3-8 kilograms per month. Only 5.0% of HCWs believed that that anti-obesity medications are more effective without diet and exercise. More than half (58.5%) of HCWs aware a BMI that allows the use of such medications. An estimated 41.5% are unaware of this. A lowest percentage (43.5%) believed think that a drug designed to combat obesity may be the only effective way to control a person's weight. More than half (54.5%) believed taking anti-obesity medicine help achieve good outcomes in terms of losing weight at short period. Most alarming is that only 10.0% of HCWs trust these drugs' safety, while 90.0% doubt it. Long-term use of these drugs causes side effects, according to 63.0%, while 37.0% are unaware. Regarding anti-obesity drugs work on the human body, the results found that decreased appetite was the most well-known mechanism of action, with 78.0% of HCWs identifying it. Following closely, 69.5% understood fat absorption reduction and 68.0% understood satiety enhancement. Anti-obesity drugs can increase fat burning, but only 65.5% aware. HCWs aware little about increased energy expenditure, with only 46.0% correctly identifying it. A significant percentage of healthcare workers (HCWs) were aware of anti-obesity medication side effects, with varying levels of awareness across symptoms. Nausea and vomiting were identified by 63.5%, diarrhea and constipation by 73.0%, and depression and mood swings

by 65.0%. Drowsiness/headache and hair loss were acknowledged by 60.0% and 51.0% of HCWs, respectively. Joint and muscle pain was reported by 63.5% of HCWs. The current study found that Healthcare Workers (HCWs) awareness of anti-obesity medication risks varied across parameters. Pancreatitis risk was known by 67.0% of HCWs, but not 33.0%. Similarly, 58.0% were aware of thyroid tumor risk, while 42.0% were not. 57.5% of HCWs aware about fertility effects, while 42.5% did not. Compared to 21.5% who were unaware, 78.5% were aware of the heart impact. Also, 77.5% were informed about kidney effects, while 22.5% were not.

Table (3): The distribution of healthcare workers responses according to their awareness about anti-obesity medications

Awareness of HCWs	Yes		No	
	No.	%	No.	%
Have you ever used anti-obesity medications?	22	11.0	178	89.0
Are you aware of anti-obesity medications before?	108	54.0	92	46.0
Have you received formal training or education on anti-obesity medications?	54	27.0	146	73.0
Do you think anyone can use anti-obesity medications to lose weight?	117	58.5	83	41.5
Do you think that these medications can help you lose 3-8 kilograms of weight per month?	117	58.5	83	41.5
Do you think that anti-obesity medications are more effective without diet and exercise?	10	5.0	190	95.0
Do you think there is a specific body mass index (BMI) that allows the use of anti-obesity medications?	117	58.5	83	41.5
Do you think that a drug designed to combat obesity may be the only effective way to control a person's weight?	87	43.5	113	56.5
Are you believe taking anti-obesity medicine help achieve good outcomes in terms of losing weight at short period?	109	54.5	91	45.5
Do you have complete faith that all anti-obesity medicine is completely safe?	20	10.0	180	90.0
Do you think that continuous long-term taking of the drug does not cause any effects?	74	37.0	126	63.0
How do anti-obesity drugs work on the human body?				
Decreased appetite	156	78.0	44	22.0
Enhancing satiety	136	68.0	64	32.0

Reducing fat absorption	139	69.5	61	30.5
Increases fat burning	131	65.5	69	34.5
Increased Energy Expenditure	92	46.0	108	54.0
Side effects of anti-obesity medications				
Nausea and vomiting	127	63.5	73	36.5
Diarrhea and constipation	146	73.0	54	27.0
Depression and mood swings	130	65.0	70	35.0
Drowsiness/headache	120	60.0	80	40.0
Hair loss	102	51.0	98	49.0
Pain in joints and muscles	127	63.5	73	36.5
Do you think anti-obesity medications may increase your risk of pancreatitis?	134	67.0	66	33.0
Do you think anti-obesity medications may increase your risk of developing thyroid tumours?	116	58.0	84	42.0
Do you think that anti-obesity medications may affect fertility, that is, affect the ovaries or reproductive system of men?	115	57.5	85	42.5
Do you think that anti-obesity medications affect the heart?	157	78.5	43	21.5
Do you think that anti-obesity medications affect the work of the kidneys?	155	77.5	45	22.5

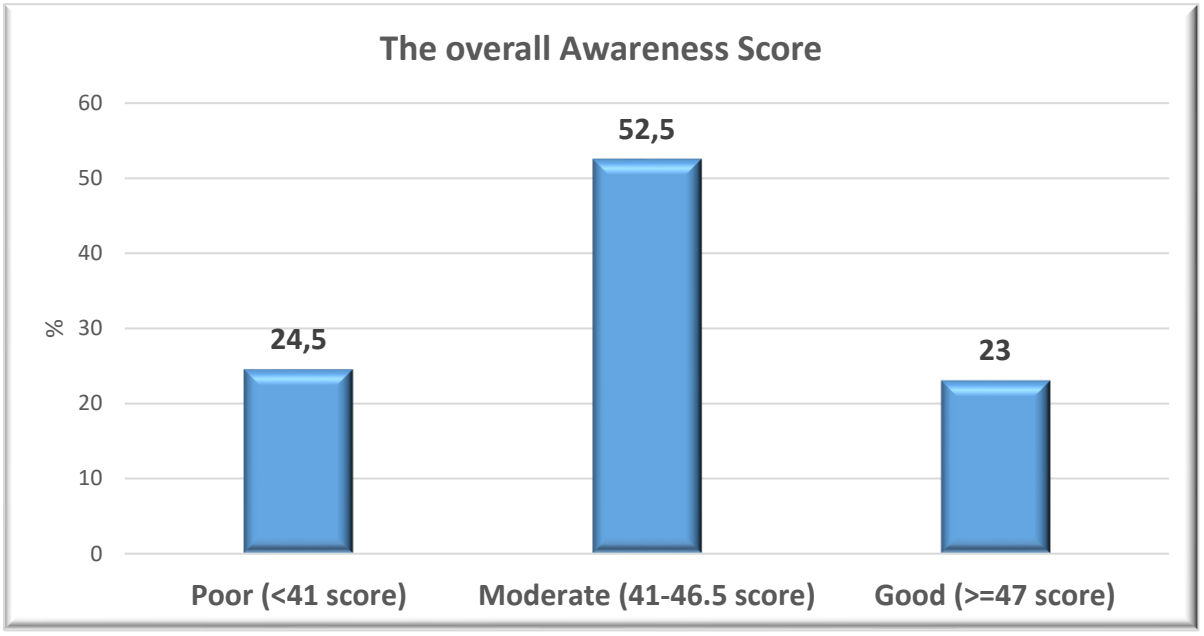

Figure (1): Illustrate the overall awareness score of healthcare workers

In figure 1, the results of this study indicate that 52.5% of health workers have a moderate awareness score, followed by 24.5% of the participants have a poor awareness score, and only 23.0% of HCWs have a good awareness score.

In table 4, the results of this study reveal that there is significant relationship between demographic characteristics and overall awareness score (P. value <0.05), except for residence. These results explain that old age, males' gender, and high education have good assessment scores for awareness about anti-obesity drugs.

Table (4): The relationship between demographic characteristics and overall awareness score

		Overall Awareness Score						P. value
		Poor (<41 score)		Moderate (41-46.5 score)		Good (>=47 score)		
		No.	%	No.	%	No.	%	
Age groups	<=25 years	27	30.7	55	62.5	6	6.8	**<0.001**
	26-30 years	11	21.6	29	56.9	11	21.6	
	31-35 years	5	29.4	5	29.4	7	41.2	
	36-40 years	2	12.5	7	43.8	7	43.8	
	41-45 years	2	12.5	8	50.0	6	37.5	
	>45 years	2	16.7	1	8.3	9	75.0	
Gender	Male	28	28.9	41	42.3	28	28.9	**0.018**
	Female	21	20.4	64	62.1	18	17.5	
Residency	Rural	7	22.6	19	61.3	5	16.1	0.510
	Urban	42	24.9	86	50.9	41	24.3	

Educational level	Secondary	12	30.0	24	60.0	4	10.0	**<0.001**
	Diploma	26	32.1	43	53.1	12	14.8	
	Bachelors	9	15.8	36	63.2	12	21.1	
	Higher Education (Higher Diploma, Master, and PhD)	2	9.1	2	9.1	18	81.8	

In Table 5, the results of this study reveal that there is a significant relationship between occupational characteristics and overall awareness score (P. value <0.05), regarding career title and experience years. These results explain that 66.7% of Physician have good assessment scores for awareness about anti-obesity drugs. While 62.5% of HWCs who had experience >20 years have good assessment scores for awareness about anti-obesity drugs compared to other categories.

Table (5): The relationship between occupational characteristics and overall awareness score

		Overall Awareness Score						**P. value**
		Poor (<41 score)		**Moderate (41-46.5 score)**		**Good (>=47 score)**		
		No.	**%**	**No.**	**%**	**No.**	**%**	
Name of health institutions	Al-Diwanyia Teaching Hospital	29	23.6	69	56.1	25	20.3	0.443
	General Al-Hamza hospital	13	24.1	24	44.4	17	31.5	
	General AL-Shamia hospital	7	30.4	12	52.2	4	17.4	
Health facility	Medical wards	8	26.7	15	50.0	7	23.3	0.173
	Operations Hall	2	20.0	8	80.0	0	.0	
	ICU	3	15.0	14	70.0	3	15.0	
	Emergency unit	13	35.1	19	51.4	5	13.5	
	counseling clinics	17	21.5	36	45.6	26	32.9	
	Pharmacy departments	6	25.0	13	54.2	5	20.8	
Career title	Physician	3	9.1	8	24.2	22	66.7	**<0.001**
	Pharmacist	6	25.0	12	50.0	6	25.0	
	nurse	30	27.8	67	62.0	11	10.2	

	medical technician	3	42.9	3	42.9	1	14.3	
	medical assistant	5	23.8	13	61.9	3	14.3	
	Pharmacist assistant	2	28.6	2	28.6	3	42.9	
Experience years	<=5 years	36	27.1	81	60.9	16	12.0	**<0.001**
	6-10 years	5	22.7	11	50.0	6	27.3	
	11-15 years	2	13.3	4	26.7	9	60.0	
	16-20 years	3	21.4	6	42.9	5	35.7	
	>20 years	3	18.8	3	18.8	10	62.5	

Discussion:

The study found that the majority of health care workers (HCWs) are aged <=25 (44.0%), followed by those aged 26-30 (25.5%). These results agreed with the recent study findings which found that the age group with the most the participants was 20-39 years [10]. There cause may explain this tendency for these age groups. owing to improved employment opportunities, younger HCWs may be more drawn to healthcare.

The results of this study reveal that the most participants were females 51.5% compared to 48.5% males. These results are consistent with the study findings conducted in Saudi Arabia [11] which found that 55.4% of participants were females. Several factors may explain why healthcare workers (HCWs) were mostly women in our research. First, historically, nursing and other caring occupations have attracted more women. Gender norms and job choices may have led to more women in healthcare. Due to prejudices or culture, female HCWs may have less impediments to admission or progression in healthcare than males. Caregiving jobs may also fit traditional femininity, bringing more women to healthcare occupations.

In this study, the majority of health care workers were university graduates (Diploma and Bachelors). These results are consistent with the study findings conducted by [12] who revealed that most of the participants were university graduates. In our study, multiple reasons explain why university graduates dominate healthcare jobs. Healthcare demands sophisticated knowledge and abilities, which are usually gained via higher education. Medical sciences, healthcare management, and patient care are taught at universities, preparing graduates for healthcare careers. Healthcare professions including medicine, nursing, and allied health have strict academic requirements, favoring university graduates. To remain current, healthcare professionals must continue to learn and improve, thus they should seek higher education.

The results found that 11.0% have used such medications, while 89.0% have not. These results agreed with the study findings done by [13] which found that the majority of the participants used anti-obesity drugs especially females.

In this study, 55.0% of HCWs aware about anti-obesity drugs previously. It appears that awareness dissemination may be lacking since only 27.0% reported formal training or education on these medications. Interestingly, 58.5% of respondents thought anyone could lose weight with anti-obesity medications, and the same percentage thought they could lose 3-8 kilograms per month. Only 5.0% of HCWs believed that that anti-obesity medications are more effective without diet and exercise. These results are consistent with the study findings conducted in Saudi Arabia [11]

which found that same results.

The results found that a lowest percentage (43.5%) believed think that a drug designed to combat obesity may be the only effective way to control a person's weight. These results agreed with the study findings done by [14] which revealed that participants believe that anti-obesity medications are less effective.

Many HCWs knew anti-obesity medication side effects by symptom. 65% reported depression and mood swings, 63.5% nausea and vomiting, and 73.0% diarrhea and constipation. Drowsiness/headache was 60.0% and hair loss 51.0% for HCWs. 63.5 percent HCWs had joint/muscle pain. This study found healthcare workers' anti-obesity medication risk awareness varied. HCWs aware 67.0% pancreatitis risk but not 33.0%. 58% knew thyroid tumor risk, 42% didn't. 57.5 percent of HCWs knew fertility effects, 42.5% didn't. Compared to 21.5% unaware, 78.5% knew heart impact. 22.5 percent were unaware of kidney effects, 77.5% were. These results are consistent with previous studies [15] [16] which reported that respondents who refused anti-obesity medication were concerned with side effects and complications.

The results reveal that most HCWs (32.5%) use personal studies or books, followed by physicians (20.5%) and mass/social media (19.5%). These results disagreed with the study findings done in Iraq by [17] found that most participants got information from social media or a physician. Several variables explain why Healthcare Workers (HCWs) choose personal studies or books for anti-obesity medicine knowledge. First, to inform their work, HCWs typically seek precise knowledge from personal studies or publications, which may not be accessible elsewhere. Second, since they are educated to critically examine and interpret scientific material, healthcare practitioners prefer academic sources for information. Personal studies or books provide HCWs control and autonomy in learning, allowing them to personalize their education to their needs and interests.

The results of this study indicate that 52.5% of health workers have a moderate awareness score. These results corroborated research findings that showed a lack of awareness regarding anti-obesity medications and the need to educate healthcare professionals in order to lessen prejudices that could harm obese patients [18]. While these results are inconsistent with the study findings conducted in Saudi Arabia [11] which found that 55.6% of the participants had the total good awareness level about anti-obesity drugs. Our study found moderate anti-obesity medication awareness among healthcare professionals (HCWs), which contradicts earlier research for numerous reasons. HCWs' expertise may alter when treatment techniques and standards change in the healthcare environment. Second, HCWs' geographical location and occupational backgrounds may affect awareness levels. Changing medical education and information transmission may have affected HCWs' comprehension of anti-obesity drugs differentially among trials.

This study found that high-educated people are aware of anti-obesity medicines. This supported a recent study that found post-graduates were more drug-aware than those with less education [11]. Education increased knowledge, attitudes, and behaviors in another study [12]. This result has several causes. First, HCWs with higher education may have more comprehensive training, which helps them comprehend medical concepts and procedures like obesity management. Second, education may increase critical thinking and information analysis, helping patients understand anti-obesity medications. Healthcare professionals with higher degrees may be more likely to keep up with new findings and suggestions, boosting their knowledge and skills.

This study found that older men tend to be aware of anti-obesity medicines. The study found that older, male, and fat friends and family had less implicit anti-obesity bias [18]. Numerous reasons may explain this tendency. Elder health care workers may grasp anti-obesity medications better due to their experience and exposure to various medical therapies. Male healthcare workers may perform higher on examinations due to their educational, career, or medical education backgrounds. Cultural norms and gender prejudices may impair male healthcare providers' engagement and confidence.

These results found that 66.7% of physician have good assessment scores for awareness about

anti-obesity drugs. These results agreed with [19] which found that awareness among healthcare workers regarding obesity was found doctors, and followed by other health personnel. This result has several causes. Physicians are trained in several pharmacological therapies, including anti-obesity drugs. Their professional skills and access to current medical literature and resources may increase their understanding in this area. Doctors also do continue medical education to learn about new treatments for obesity. Doctors often treat obese patients; therefore, they must be updated about treatment choices.

In this study, 62.5% of HWCs who had experience >20 years have good assessment scores for awareness about anti-obesity drugs compared to other categories. These results supported by the findings of study done by [20] reported that HCWs have long working years associated with good knowledge regarding obesity management. Several variables explain this association. First, experienced HCWs have seen more patient situations and treatment methods, which improves their knowledge of pharmacological treatments, including anti-obesity medications. Their lengthy exposure to ongoing education and professional development may also improve their obesity management knowledge.

Conclusion

The study concludes that most health care workers have a moderate awareness about anti-obesity drugs. These results explain that old age, males' gender, high education, experience more than 20 years and physician have good assessment scores for awareness about anti-obesity drugs. The study recommends developing and focusing on community-based educational programs and campaigns on anti-obesity medications to improve their views on obesity management.

Competing interests

The authors declare no competing interest.

Authors' contributions

All authors coordinated in the preparation of data, and participated in the preparation and writing of the manuscript. The author read and approved the final version of the manuscript.

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