

Primary care physicians' knowledge and attitudes about obesity, adherence to treatment guidelines and its' association with confidence to treat obesity at the Saudi Ministry of Interior primary health care centers

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ABSTRACT

Background and Aim: Many primary care physicians (PCPs) believed that managing overweight and obesity is essential to their jobs, however, many believe that they were doing it ineffectively, unsatisfying, and had negative attitudes. We conducted this study to explore the knowledge, attitudes and adherence to obesity management guidelines, identify potential barriers that may prevent adherence of PCPs to obesity treatment guidelines. **Methods:** We conducted this cross-sectional study and conducted a questionnaire sent via email to all PCPs in the Ministry of Interior centers in Riyadh, Al-Kharj, AlQassim, Wadi Ad Dawasir, Hail and Tabuk in Saudi Arabia. **Results:** A total of 119 PCPs participated in the survey, 61 (51.3%) males and 58 (48.7%) females. All respondents ($n = 119$, 100%) answered correctly that obesity is a disease. Of PCPs surveyed, genetics accounted for 75.6% of the responses as the cause of obesity. 79.8% believed that the best way for patients with obesity to lose weight was to engage in regular physical activity. The majority of PCPs (87.4%) thought that treating obesity should be a top priority, and 88.2% would typically recommend obesity therapy to their patients. Around 68.9% of PCPs thought that it's their patients' responsibility to lose weight. The majority will recommend obesity treatment and 75.6% would talk to their patients about weight concerns, while 60.5% would refer their patients to obesity surgery. There was a positive significant association between higher knowledge and better attitude and better adherence to treatment guidelines. More experienced PCPs were more confident. The most common perceived barrier was the patients' lack of desire to follow obesity treatment. **Conclusion:** Primary care clinics and PCPs play a crucial role in diagnosing and treating patients with obesity, according to Ministry of Health guidelines on the prevention and management of obesity. PCPs must not only acknowledge obesity as a chronic illness and the possible long-term consequences it may cause, but also provide comprehensive, multi-component interventions that include lifestyle changes, medication, and appropriate referrals for bariatric surgery when needed. Healthcare professionals must form a cooperative relationship with obese patients to ensure that the patients follow treatment protocols.

Keywords: Attitude, knowledge, obesity, primary care physician, treatment

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Introduction

One of the most significant issues with global health is the rising incidence of obesity.^[1] The prevalence of obesity has increased

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significantly in the Gulf region, especially Saudi Arabia.^[2] The prevalence of overweight and obesity in Saudi Arabia was projected by the Ministry of Health to be 38% and 20%, respectively, in 2019.^[3] In 2022, the prevalence of obesity in Saudi Arabia has been assessed to be up to 36%.^[4]

As a chronic condition, obesity increases the risk of developing major comorbidities like type 2 diabetes, hypertension, obstructive sleep apnea, cardiovascular disease, liver disease, dyslipidemia, joint pain, various cancers, depression, and infertility.^[5-7] People with obesity consult their doctors for assistance in addressing their weight problems. Management and guidance algorithms to manage people with obesity were created which include recommendations to modify eating patterns and increase physical activity as part of counseling patients with obesity.^[8,9]

Based on BMI and other obesity-related comorbidities, there were numerous recognized treatment options, including lifestyle interventions in primary healthcare, medication, referrals to obesity clinics, and bariatric surgery.^[10]

Several studies that evaluated the knowledge, attitudes, and practices used by primary care physicians (PCPs) to treat obesity. A study showed a significant correlation between better awareness of and adherence to obesity standards its associated health concerns, and feeling secure enough to recommend medication or bariatric surgery.^[11,12] Despite having negative opinions about the success rates of weight management, around 60% of PCPs felt they were capable of their significant role in the fight against obesity and were also aware that obesity is a global problem.^[13] Many PCPs believed that managing overweight and obesity is central to their jobs and 3 of 4 PCPs claimed that they discussed weight with their patients.^[14] Although the majority of doctors stated that they view obesity as a chronic illness, few of them treat obesity using a multifaceted chronic illness paradigm, which combines lifestyle modifications with psychological, medicinal, and/or surgical therapies. Even with the abundance of best practice standards, there is still a low level of integration of these techniques into regular practice.^[15]

In Saudi Arabia, research on PCPs basic understanding of obesity showed high rates, although majority of the PCPs had not had any specialist training or courses in the subject.^[16] Several identified barriers to effective management of obesity included disparities in perceptions and attitudes toward obesity, lack of knowledge and specialty training, low prioritization and lack of follow-up care, lack of time and resources, and time restraints.^[11,17-22] We conducted this study to explore the knowledge and attitudes on obesity of PCPs and investigate their adherence to obesity management guidelines and its association with their attitudes and knowledge of obesity. We also explored to identify potential barriers that may prevent adherence of PCPs to obesity treatment guidelines. The findings of this study will help health authorities to address and institute continuing medical education and training to enhance and update practitioners on obesity guidelines and management. Enhanced knowledge and attitudes of practitioners may significantly

improve their practice on the management of obesity which will eventually benefit their patients.

Materials and Methods

We conducted this cross-sectional study at Security Forces Hospital and we collected the data from PCPs in the Ministry of Interior centers in Riyadh, Al-Kharj, AlQassim, Wadi Ad Dawasir, Hail and Tabuk in Saudi Arabia. All PCPs were invited through emails to participate in the study. The sample size was calculated using the formula for cross-sectional studies: $n = Z^2P(1-P)/d^2$. Using this formula and assuming a confidence of 95% (i.e., 1.96), an expected family physician population prevalence of 10%,^[23] and a precision of 5%, the calculated sample size was 138. Research approval was granted by the Institutional Review Board of Security Forces Hospital, Riyadh, Saudi Arabia (No. 23-662-26) dated 26 July 2023.

The questionnaire was sent to all participants through a Google document via e-mails of PCPs. A brief explanation of obesity and the goals of the study were given to participants. Participation was optional, and responses were gathered anonymously with no way to identify individual responders. Participants were made aware that they have the option to withdraw at any moment. Responses counted as their consent to participate in the study. The questionnaire included questions on attitudes and knowledge about obesity, confidence in managing obesity, adherence to obesity treatment guidelines, barriers to optimal care, and respondents' demographics. It was based on a validated survey.^[11] Two weeks following the initial email, PCPs who didn't reply were notified via email. One month was allotted for the data collection.

Items 13, 17, 17-option 1 to 7, and 10 to 20, 22 to 29 were the knowledge index items that received 1-2 points each. High marks were awarded to those who effectively responded to these questions. Regarding item 18, the participants were awarded one point for choosing options one or two, two points for choosing option three, and no points for choosing option four. Regarding issue 20, the participants were awarded one point if they chose alternatives four or five for every section; if they did not, they were awarded zero points. The attitude index score consisted of items 7 through 10, 12, and 17 (options 8 and 9). For every item or option, PCPs were awarded one point. For example, higher-scoring attitudes questions resulted in a higher index score for positive attitudes. The index score (items 31 to 34) for compliance with obesity treatment recommendations was comprised of items 11 and case vignettes 1 through 3. The respondents receive one point for each accurate answer to questions 11, 31, 32, and 34. Regarding issue number 33, the respondents scored between 0 and 3.

Results

Demographic characteristics

A total of 119 PCPs participated in the survey, 61 (51.3%) males and 58 (48.7%) females. Fifty-five respondents (46.2%) were <35 years old, half of them ($n = 60$, 50.4%) were registrars,

and 107 (89.9%) worked full-time. Table 1 shows the detailed demographic profile of 119 PCPs.

Knowledge about obesity

All respondents ($n = 119$, 100%) answered correctly that obesity is a disease. Of PCPs surveyed, genetics accounted for 75.6% of the responses, followed by lifestyle modifications ($n = 88$, 73.9%) and societal changes ($n = 86$, 72.3%) regarding the fast-food sector and the availability of inexpensive food. Of the 64 respondents, 53.8% correctly stated that the hypothalamus regulates hunger and fullness rather than the brain cortex, and 76 respondents, or 64.9%, thought that issues related to appetite regulation—such as persistent hunger pangs or delayed satiety—were the cause of obesity. Nonetheless, 95 PCPs (79.8%) said that the best way for patients with obesity to lose weight was to engage in regular physical activity. According to 45 people (37.8%), changing one's lifestyle is the best way to lose weight if one has severe and complex obesity [Figure 1].

Perception of obesity treatment

Seventy-six PCPs (63.9%) claimed that patients who were obese experienced late satiety and were always hungry. For those with moderate obesity (BMI 30 to 39.9 kg/m²), 79 PCPs (66.4%) thought that obesity treatment medications were an effective way to lose weight. For those with severe and complex obesity, 45 PCPs (37.8%) thought that changing one's lifestyle was the best way to lose weight. [Figure 2] Nevertheless, none of the PCPs thought that after five years, 20% of people with extreme obesity were able to permanently lose 10% of their body weight with dietary and behavioral modifications.

Attitudes about obesity

The majority of PCPs ($n = 104$, 87.4%) thought that treating obesity should be a top priority, and 105 respondents (88.2%) said

Table 1: Demographic characteristics of 119 primary care physicians who participated in the survey

Demographic characteristics	n (%)
Gender	
Male	61 (51.3%)
Female	58 (48.7%)
Age groups in years	
<35 years	55 (46.2%)
35-49 years	48 (40.3%)
50 and above	16 (13.4%)
Professional levels	
Resident	35 (29.4%)
Registrar	60 (50.4%)
Consultant	24 (20.2%)
Number of years working as PCP	
0-5 years	47 (39.5%)
6-10 years	32 (26.9%)
>10 years	40 (33.6%)
Working clinically as	
Part time	12 (10.1%)
Full-time	1107 (89.9%)

that they typically recommend obesity therapy to their patients when they visit them because of health issues associated with obesity. A significant number of PCPs ($n = 103$, 86.6%) said they could assist obese patients in reaching a healthier weight. Eighty-two PCPs (68.9%) thought that patients should bear the primary responsibility for decreasing weight. In their everyday practice, one hundred PCPs (84.0%) evaluated obesity using BMI as a metric. However, 82 PCPs (68.9%) stated that patients should bear the primary responsibility for decreasing weight [Figure 3].

Adherence to obesity treatment guidelines

When consulted for obesity-related comorbidities, the majority of respondents ($n = 105$, 88.2%) stated that they recommended obesity treatment to their patients. Ninety respondents (75.6%) said there was a strong chance they would talk to their patients about weight concerns, and 72 (60.5%) said they would refer their patients to obesity surgery if they were suitable. However, the majority of respondents ($n = 88$, 73.9%) said that additional evaluations of their patients' health were necessary (lipid profile, sugar or glucose tolerance, sleep assessment, blood pressure monitoring), while 14 (11.8%) thought otherwise. 42 (35.3%) will recommend bariatric surgery for a patient with morbid obesity, type 2 diabetes, and sleep apnea, while 37 (31.1%) will not make this referral.

Knowledge and its association with respondents' demographic characteristics, attitudes and adherence

The mean value for knowledge index was 11.85 ± 3.6 . By linear regression using knowledge as the dependent variable, there was a positive significant association between higher knowledge and better attitude ($B = 0.561$, 95%CI = 0.194 to 0.928, $P = 0.003$), and better adherence ($B = 0.473$, 95%CI = 0.144 to 0.801, $P = 0.005$). There were no significant associations between knowledge and gender ($B = -0.450$, OR = 0.638, 95%CI = 0.302 to 1.346, $P = 0.238$), age groups ($B = 0.086$, OR = 1.090, 95%CI = 0.538 to 2.207, $P = 0.811$), professional level ($B = -0.406$, OR = 0.666, 95%CI = 0.374 to 1.186, $P = 0.167$), number of years working as PCP ($B = 0.318$, OR = 1.374, 95%CI = 0.749 to 2.521, $P = 0.304$) and whether they worked full time or part-time ($B = -0.016$, OR = 0.984, 95%CI = 0.269 to 3.602, $P = 0.981$). However, higher knowledge was significantly associated with better attitude ($B = 1.182$, OR = 3.260, 95%CI = 1.337 to

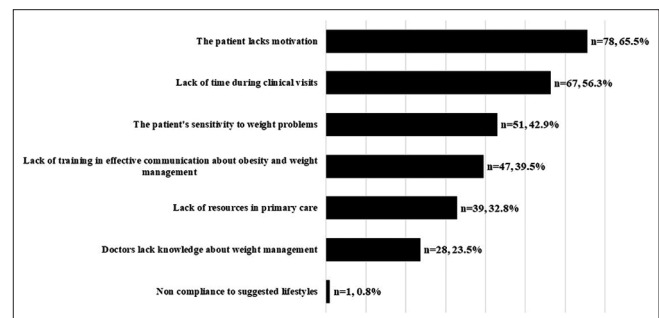


Figure 1: Perceived causes of obesity and what PCPs suggest to their patients

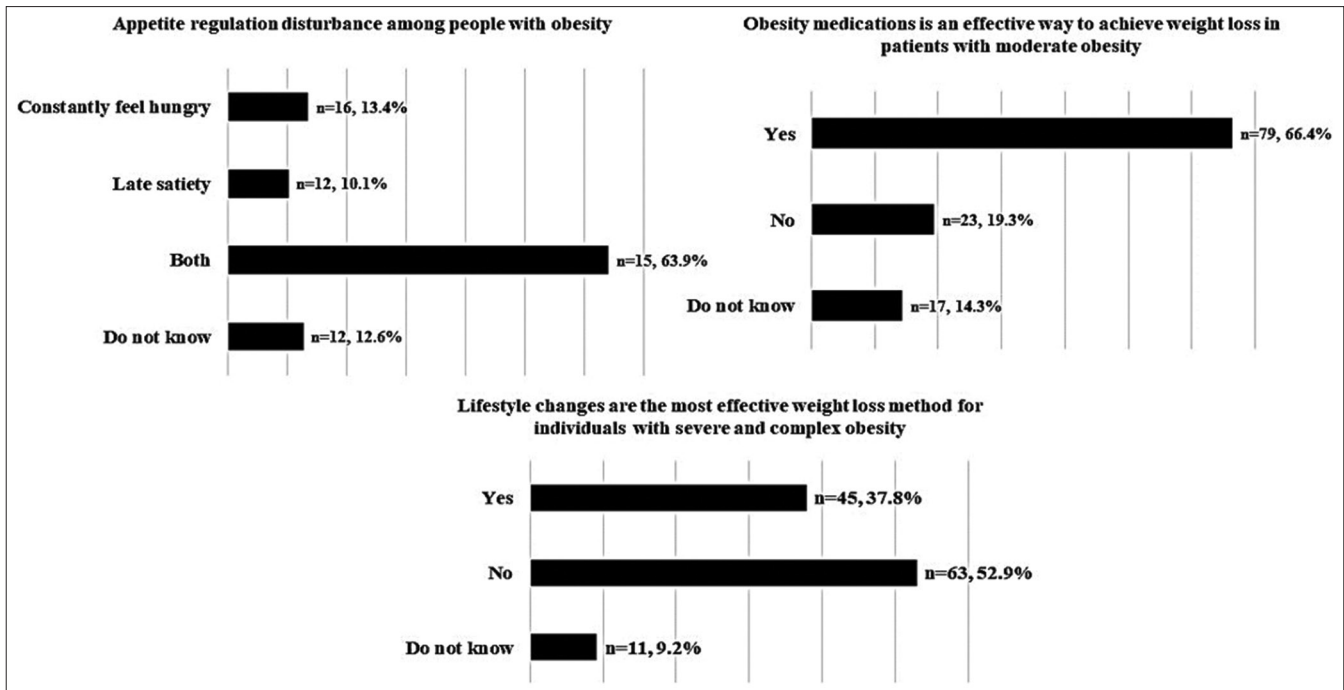


Figure 2: Perception of 119 PCPs on the appetite regulation disturbance and management of patients with obesity

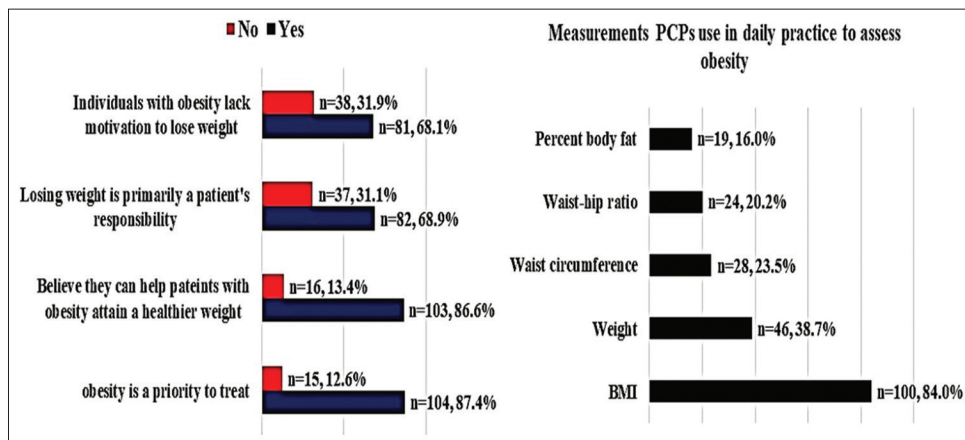


Figure 3: PCPs attitudes about obesity and the measurements they use in daily practice to assess obesity

7.950, $P = 0.009$) and better adherence to guidelines ($B = 1.159$, $OR = 3.186$, $95\%CI = 1.305$ to 7.783 , $P = 0.011$).

Confidence to treat obesity

Among the participants, 102 (68.9%) felt comfortable talking about lifestyle modifications with their obese patients, 66 (55.5%) will refer their patients for bariatric surgery, and 102 (85.7%) felt comfortable prescribing obesity drugs. No significant associations were observed between confidence to treat obesity with gender ($B = -1.072$, $OR = 0.342$, $95\%CI = 0.112$ to 1.042 , $P = 0.059$), age group ($B = -0.611$, $OR = 0.543$, $95\%CI = 0.266$ to 1.107 , $P = 0.093$), professional level ($B = -0.362$, $OR = 0.696$, $95\%CI = 0.333$ to 1.458 , $P = 0.337$) or working as full time or part-time ($B = 1.285$, $OR = 3.615$, $95\%CI = 0.953$ to 13.711 , $P = 0.059$). However, there was a significant positive

association between the number of years working as PCP and confidence to treat patients with obesity ($B = 0.688$, $OR = 0.502$, $95\%CI = 0.263$ to 0.961 , $P = 0.038$).

Confidence to discuss lifestyle changes with patients with obesity was significantly associated with higher level of knowledge ($B = 3.211$, $OR = 24.800$, $95\%CI = 3.164$ to 194.38 , $P = 0.002$), better attitude ($B = 0.563$, $OR = 0.415$, $95\%CI = 0.303$ to 0.526 , $P < 0.001$), and better adherence ($B = 0.471$, $OR = 0.333$, $95\%CI = 0.219$ to 0.448 , $P < 0.001$). Confidence to provide and prescribe medications for obesity treatment was also significantly associated with a better attitude ($B = 0.976$, $OR = 2.654$, $95\%CI = 1.082$ to 6.509 , $P = 0.033$) and better adherence to guidelines ($B = 0.969$, $OR = 2.634$, $95\%CI = 1.098$ to 6.321 , $P = 0.030$) but not to knowledge ($B = 0.784$, $OR = 2.191$, $95\%CI = 0.894$ to 5.366 , $P = 0.086$).

Barriers that prevent PCPs adherence to treatment guidelines

Eighty-one (65.5%) PCPs thought that patients' lack of desire was a possible obstacle to their following obesity treatment guidelines. Patients' sensitivity to weight issues ($n = 51$, 42.9%) and lack of time during clinical sessions ($n = 67$, 56.3%) were the next two most common barriers cited by PCPs.

Discussion

This study revealed several interesting findings that call for further debate. The substantial correlation between knowledge and improved attitudes and adherence to obesity treatment guidelines is one of the most notable findings. Our findings are consistent with earlier research of a similar nature, in which PCPs managing obese patients used an appropriate strategy and were more knowledgeable about management guidelines.^[11,24,25] Patients were more likely to receive weight management from doctors who had more information on obesity and more positive views toward it.^[24,25] Nevertheless, in contrast to other research, our study did not find a significant correlation between knowledge and other relevant variables, such as gender, age groups, professional level, length of time spent working as a PCP, and full- or part-time employment. This is most likely a result of the Saudi Ministry of Health's ongoing stringent practice guidelines, which apply to all medical professionals managing obese patients, irrespective of their gender, age, professional standing, length of service as PCPs, or type of employment.^[26]

Additionally, our study demonstrated that responders who felt more secure about recommending obesity treatments or bariatric surgery to their patients also had higher knowledge, similar to previous findings of Karchynskaya *et al.* and Mohajan *et al.*^[27,28] This implies that doctors who had a favorable outlook on obesity were more inclined to talk to their obese patients about bariatric surgery. Furthermore, all primary care physicians in our research utilized BMI as a screening tool for obesity, concordant with previous studies.^[27,28] If scientifically tested by a healthcare professional, body mass index (BMI) is still a widely used and reliable indicator of overweight and obesity.^[27] It's a non-intrusive technique, but PCPs should also be aware of various BMI disadvantages related to age, gender, social class, and ethnicity that could propel patients with normal BMIs from developing potential concomitant diseases.^[28]

The majority of our PCPs (79.8%) said that the best way for obese patients to lose weight is to engage in regular physical activity. This was demonstrated by the fact that many of our PCPs are open to talking about lifestyle adjustment plans to assist their patients. The clinical practice guidelines of the Saudi Ministry of Health recommend that patients undergo a comprehensive lifestyle modification that involves diet, physical activity, and behavior therapy. This recommendation is in line with previous studies and various guidelines related to the management of overweight and obesity.^[26,29–31] Although 68.9% of our PCPs

would rather prescribe obesity drugs, only 55.5% will recommend bariatric surgery to their patient—a smaller percentage than other researches.^[32,33] Even though bariatric surgery is cost-effective for society and the healthcare system,^[32,33] many PCPs choose not to refer their patients for bariatric surgery because they are unaware of the requirements for eligibility and/or because they are worried about potential long-term side effects or surgical complications.^[34,35]

Even though we found out that every PCP we spoke with understood that obesity is a chronic illness, a sizable portion of PCPs still held the opinion that changing a patient's lifestyle is the best way to reduce weight, and that patients should not be motivated to lose weight. Even though this might be the case, PCPs should strike up a conversation with obese people. Research indicates that several tactics such collaborative decision-making to support a treatment plan for obesity, telemedicine, team-based methodology, and community collaboration can enhance the number of patients seeking treatment for obesity and their adherence to treatment.^[36,37] While only 23.5% of our PCOs thought that the doctors lacked understanding regarding weight management, more than half (56.3%) of our PCOs felt that they did not have enough time to discuss the obesity treatment protocol with their patients. This is higher than in prior research.^[36,38] PCPs are required by the Saudi guidelines on the prevention and management of obesity algorithm to measure the BMI and waist circumference of overweight and obese individuals, evaluate comorbidities, and develop weight management goals that include lifestyle modification programs involving diet, exercise, and behavioral/psychological counseling.^[39]

Our findings may have an unanticipated effect of making PCPs less likely to prioritize treating obesity because they believe that patients' lack of motivation and being obese is their fault, in concordance to a previous study that showed negative opinions about success rates of weight management.^[15] Additionally, just one-fourth of our PCPs thought that obstacles to managing obesity stemmed from a lack of awareness and unfavorable views toward obesity, and this may have brought down the proportion of PCPs doing effective management of obesity, similar to previous findings.^[14,15]

In order to reduce the long-term complications of obesity, the Ministry of Health of Saudi Arabia and health advocates must improve PCPs' adherence to management guidelines and protocols as well as patient education and information. These initiatives should include bariatric surgery and other weight management programs. This study is timely and relevant to the practice of PCPs since the high prevalence of obesity in Saudi Arabia is still a major health issue. Understanding all the factors that are related to obesity guidelines and management on the part of PCPs will greatly improve the delivery of services and may eventually serve patients the appropriate management to enhance patient's motivation to a patient-doctor co-management to decrease prevalence of obesity and decrease risk from comorbidities associated with obesity.

Potential selection bias, or the possibility that respondents to the questionnaire survey had a greater interest in obesity and its treatment, is one of the study's limitations. Consequently, compared to individuals who opted not to reply, they might have greater knowledge, a more favorable attitude about obesity, and better adherence to obesity guidelines. The study's small sample size is another drawback, and our results could not accurately represent PCP awareness, attitudes, and compliance with obesity standards across the Kingdom.

Conclusion

Primary care clinics and PCPs play a crucial role in diagnosing and treating patients with obesity, according to Ministry of Health guidelines on the prevention and management of obesity. PCPs must not only acknowledge obesity as a chronic illness and the possible long-term consequences it may cause, but also provide comprehensive, multi-component interventions that include lifestyle changes, medication, and appropriate referrals for bariatric surgery when needed. Healthcare professionals have an obligation to form a cooperative relationship with obese patients to ensure that the patients follow treatment protocols.

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Conflicts of interest

There are no conflicts of interest.

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