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PRIMARY HEALTH CARE PHYSICIANS' MANAGEMENT OF OBESE PATIENTS AND THEIR ATTITUDE TOWARDS BARIATRIC SURGERY IN EASTERN PROVINCE SAUDI ARABIA

Medicine

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ABSTRACT

Background: obesity and bariatric surgery are increasing in Saudi Arabia. This study assess Primary health Care (PHC) Physicians' management of obese patients and measured their attitude toward referring patients for bariatric surgery.

Method: cross-sectional study of all eligible Ministry of Health PHC physicians, Eastern Province, Saudi Arabia were invited through online self-administered questionnaire in January 2018

Result: total of 263 physicians responded. The majority (90.9%) reported measuring patients' weight each visit,91.3% used BMI as a second measurement;40.3% had referred patients for bariatric surgery in the previous 12 months. Only 15.6% believed benefits of bariatric surgery are not worth its risks and 37.6% reported discomfort in managing patients after surgery. The main barrier to referral was unawareness where to refer patients.

Conclusion: Generally, physicians had a positive attitude regarding bariatric surgeries; in contrast, they need improvement in the area of referral and post-surgery follow-up.

KEYWORDS

Weight Management; Physician Competency; Patient Referral

Introduction

Obesity is a major risk factor in many non-communicable diseases and, in the most serious cases, even fatal. It is not only increase the likelihood of critical health issues, but also has an economic impact, having a dramatic effect on the health care system in various ways. Physical inactivity and high caloric intake, along with other risk factors, contribute to the current obesity problem.[1,2]

The percentage of the population affected by obesity has been increasing in Saudi Arabia, from 20–30% in the 1980s and 1990s,[1] to 44% only in the eastern province in 2004.[3] The national figure is estimated to be increased reaching 52.9% in 2017, and 59.5% in 2022.[1]

Studies have shown that dietary restriction initially works in reducing weight, but this loss cannot be maintained in the long term,[4,5] with most patients regaining their weight. This can be compared with a surgical option, with which people can maintain up to 50% of their lost weight for 10 years, along with the associated benefits involving obesity-related morbidity and mortality.[6,7,8,9,10] Bariatric surgery started in the 1950s worldwide. It is performed on a specific population through several procedures. Since that time, surgical techniques had improved and the use of laparoscopic surgery has increased its effectiveness and safety.[11] As such, the prevalence of bariatric surgery is increasing yearly, both worldwide and locally, with an estimated 15,000 operations performed annually in Saudi Arabia.[12]

Physicians at primary health care centers in Saudi Arabia are responsible for providing screening, promotive, preventive, and curative care to all citizens in the Kingdome. They are responsible for counseling patients about diet, exercise, available medication, and surgical options, and for then referring patients to receive the necessary care[13] Although physicians face many barriers, they are motivated to prevent and manage obesity.[14] With the increasing number of bariatric surgeries, primary health care physicians should be aware of how to provide information to eligible and willing patients about the surgery, and how to support patients who are hesitant. This is an important role for physicians, who are a trusted source of health information for most people.[15] It is well known that training physicians will improve their performance in providing the best care to patients.[16] Knowing about gaps in physicians' training and fulfilling their needs will save time and resources and provide the highest benefit to patients.

Studies have been conducted globally on knowledge and methods to control obesity.[13,14,17] In contrast, studies about knowledge of bariatric surgery have not become as common, although their numbers are growing, despite the ample numbers of patients who are undergoing bariatric surgeries. A study was conducted in 2016 with medical students and new graduates from King Abdul-Aziz University, to assess their scientific knowledge about bariatric surgery provided to them during their surgical course. The result showed a low level of knowledge and need for improvement.[18]

In sum, obesity and bariatric surgeries have been enormously increasing in Saudi Arabia.[1,3,12] Primary health care physicians, as the first contact for obese patients, play a crucial role in referring eligible people to bariatric surgery. Bariatric surgery has been concluded as an effective strategy in maintaining weight loss.[6,7,8] Physicians' attitude towards bariatric surgery drives their decision to refer patients for this procedure. To date, there has been no published data to elucidate the attitude of physicians regarding bariatric surgery in SA, while knowledge about bariatric surgery has been examined and deemed inadequate.[18] Therefore, this study will assess primary health care physicians' management of obese patients and their attitude towards bariatric surgery in the Eastern Province of Saudi Arabia. The study will also examine the associated factors that influence physicians' attitudes.

Material and methods

This was a cross-sectional descriptive study conducted at Ministry of Health (MOH) PHC centers in Dammam, Qatif and AL Khobar sectors, Eastern Province, Saudi Arabia during the year 2018.All eligible primary health care physicians listed in the targeted area were invited to participate, with a total of 313 physicians and 108 MOH family medicine residents. The study excluded participants with specialties other than family medicine, participants holding administrative work, and non-MOH family medicine residents.

The questionnaire was adapted from two validated questionnaires used previously in other studies. Section (A) included seven questions on socio-demographic and work-related characteristics. Section (B) included nine questions on physician management of obese patients and was taken from the Survey of Family Doctors in Ontario, 2016.[19] Section (C) included seven scaled questions on physician attitudes toward referring patients for bariatric surgeon, adopted from a study in

Ohio in 2015.[20] This section used a five-point scale, ranging from strongly disagree to strongly agree. A pilot study was conducted with 20 physicians and the feedback was used to modify the questions according to the Saudi Arabian culture. The final questionnaire consisted of 23 questions, distributed across the above three sections. An electronic copy of the questionnaire was developed using Google Forms, and distributed to all 401 listed physicians.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS v.22). For the descriptive analyses, the statistical tests used were frequency table, mean, and standard deviation (SD). For the inferential statistics, the tests used were chi-square and independent t-test. A 95% confidence level was used, with p-values of less than 0.05 considered significant. A written informed consent form was attached to the questionnaires, to ensure that all participants agreed to participate in the study. In addition, anonymity and confidentiality were maintained. Institutional review board (IRB) approval was obtained from the Ministry of Health Eastern Province.

Results

A total of 263 out of 401 questionnaires were completed by primary health care physicians from the eastern province of Saudi Arabia (response rate: 65.6%). The mean age was 33 years, 95% had been in practice for less than 17 years (see Figure 1), and 34% of physicians attended obesity management or bariatric surgery training. The demographic characteristics of physicians are listed in Table 1.

Table 1: Demographic data of primary health care physicians

All responders (N=263)		n	%
sex	Male	89	33.8
	Female	174	66.2
Nationality	Saudi	251	95.4
	Non-Saudi	12	4.6
Job Title	General physician	101	38.4
	Family medicine resident	109	41.4
	Family medicine specialist	39	14.8
	Family medicine consultant	14	5.3
Number of patients seen in clinic per week	<25	73	27.8
	26-50	67	25.5
	51-100	44	16.7
	>100	79	30.0
Attended any training regarding Obesity management/bariatric surgery	Yes	90	34.2
	No	173	65.8
Age (Mean/SD)		32.8	6.4
Practice years (Mean/SD)		6.1	5.6

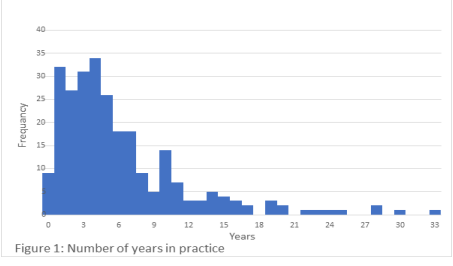


Figure 1: Number of years in practice

Most of the physicians reported measuring their patients' weight every visit (90.9%). Only 8.7% did not use any additional measurement, while the majority (91.3%) used BMI as a second measurement. More than half of the physicians initiated a conversation about bariatric surgery (59.7%) and 66.2% of the physicians know where to refer patients for further management. However, only 40.3% had referred patients for bariatric surgery in the previous 12 months. Table 2 summarizes how physicians managed obese patients.

Table 2: Primary health care physician management of obese patients in Eastern Province, Saudi Arabia 2018

All responders (N=263)		n	%
Measuring patient's weight	Each visit	239	90.9
	Every 6 months	9	3.4
	Every year	3	1.1
	Other	12	4.6
Additional measurements	BMI	208	79.1
	Waist circumference	0	0.0
	Both	32	12.2
	None	23	8.7
Percentage of morbidly obese patients seen in previous 12 months	<20%	161	61.2
	20-40%	80	30.4
	41-60%	20	7.6
	>60%	2	0.8
Average Number of morbidly obese patients per day	0	1	0.4
	<5	165	62.7
	5-10	85	32.3
	11-20	12	4.6
	>20	0	0.0
Initiated conversations about bariatric surgery		157	59.7
Know where to refer a morbidly obese patient for further management		174	66.2
Referred patients for bariatric surgery in the previous 12 months		106	40.3
Percentage of morbidly obese patients referred for bariatric surgery in previous 12 months	<1%	38	35.8
	1-5%	52	49.1
	6-10%	11	10.4
	11-20%	1	0.9
	>20%	4	3.8

There could be many reasons for non-referral to bariatric surgery. The highest percentage of reasons that physicians did not refer patients for surgery was that 35.4% of the physicians did not know where to refer and, for the lowest percentage (11.8%), the non-referral was due to the patient medical issues. Figure 2 illustrates more details about the reasons.

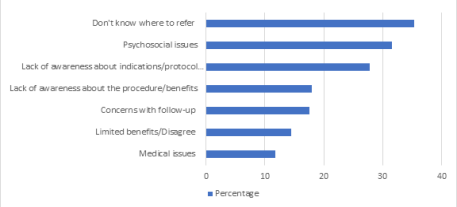
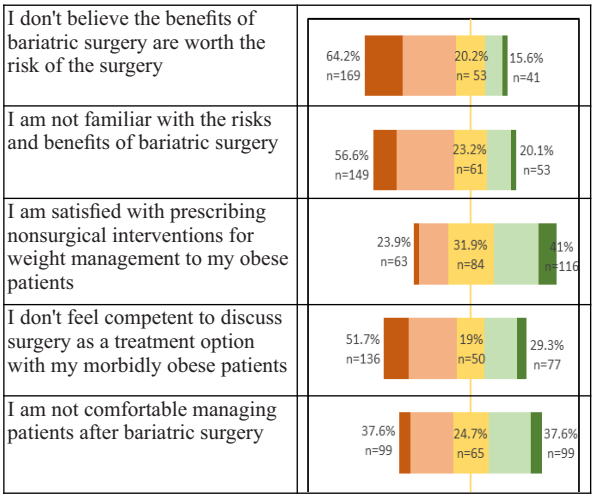


Figure 2:Reasons preventing physicians from referring patients to bariatric surgery

Regarding the physician's attitude towards referring patients to bariatric sugary, some did not believe that the benefit of bariatric surgery was worth its risks (15.6%), 51.7% felt competent in discussing surgery as an option for obese patients, and 72.3% thought that post-surgery treatment and follow-ups were effective. In addition, 68.1% were familiar with the indication of bariatric surgery. Some physicians (37.6%), reported not being comfortable in managing patients after the surgery (see Figure 3).



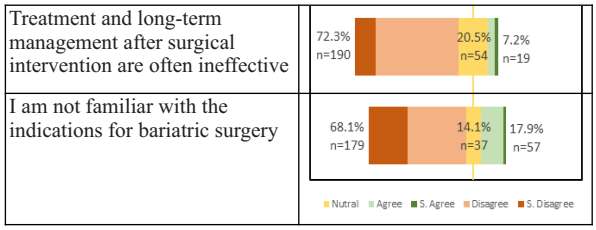


Figure 3: Physicians' attitude toward referring patients to bariatric surgery

Note: percentages written are sum of strongly disagree and disagree or strongly agree and agree, or neutral alone

As can be seen in Table 3, significant associations were found between physicians who referred patients for bariatric surgery and job title (p=0.047), years of practice (p=0.048), and number of patients seen in clinic per week (p=0.001). These physicians also felt more competent in discussing surgery as a treatment option for morbidly obese patients (p=0.006) and would usually initiate conversations about bariatric surgery with patients (p<0.001). Further, physicians who referred patients to bariatric surgery were more likely to attend training in obesity management and bariatric surgery than non-referring physicians (44.3 vs. 27.4%; p=0.004).

Table 3: Factors associated with physician's referral to bariatric surgery in Eastern province, Saudi Arabia 2018

All responders (N=263)		Initiated conversations about bariatric surgery		Referred patients for bariatric surgery in the previous 12 months	
		n (%)	P-value of chi-squared	n (%)	P-value of chi-squared
Job title	GP	53 (52.5)	0.002	48 (47.5)	0.047
	FM resident	60 (55.0)		33 (30.3)	
	FM specialist	33 (84.6)		19 (48.7)	
	FM consultant	11 (78.6)		6 (42.9)	
Attended any training regarding obesity management/bariatric surgery	Yes	63 (70.0)	0.014	47 (52.2)	0.004
	No	94 (54.3)		59 (34.1)	
Initiated conversations about bariatric surgery	Yes	157 (100)	-	89(56.7)	0.000
	No			17 (16.0)	
Knew where to refer a morbidly obese patient for further management	Yes	123 (70.7)	0.000	95(54.6)	0.000
	No	34 (38.2)		11(12.4)	
Lack of awareness about indications/protocol for referral	Yes	26 (35.6)	0.000	21(28.8)	0.018
	No	131 (68.9)		85(44.7)	
Psychosocial issues	Yes	57 (68.7)	0.044	48(57.8)	0.000
	No	100 (55.6)		58(32.2)	
"I don't feel competent to discuss surgery as a treatment option with my morbidly obese patients"	S. Agree	4 (23.5)	0.000	5(29.4)	0.006
	Agree	25 (41.7)		14(23.3)	
	Neutral	24 (48)		19(38)	
	Disagree	62 (69.7)		47(52.8)	
	S. Disagree	42(89.4)		21(44.7)	
"I am not comfortable managing patients after bariatric surgery"	S. Agree	11 (55)	0.005	5(25)	0.126
	Agree	38 (48.1)		31(39.2)	
	Neutral	35 (53.8)		21(32.3)	
	Disagree	56 (70.9)		39(49.4)	
	S. Disagree	17 (85)		10(50)	

Discussion

This study assessed primary health care physicians' management of obese patients and their attitude towards referring patients for bariatric surgeries, taking into consideration the particular factors associated with the Eastern province, Saudi Arabia. Most of the physicians reported measuring their patients' weight at each visit, and calculated their BMI. However, approximately half the physicians initiated conversations about bariatric surgery, and even fewer referred patients for bariatric surgery. PHC physicians reported an appropriate management of obese patients. However, they did not feel competent in discussing surgery as an option and were not comfortable in managing patients after surgery.

It has been found that physicians practicing in clinic in Eastern province are visited by five to ten morbidly obese patients on a daily basis, while primary care physicians in Aseer region are visited by approximately four patients each month.[13] This difference may be attributed to the difference in the environment, as Aseer is a mountainous area and the lifestyle of people involves more physical activity and different diet.

A considerable number of primary health care physicians (90.9%) reported measuring patients weight in each visit to the PHC centers. This shows appropriate management of obese patients as the main role of primary health care physicians in terms of diagnosing obesity and referring accordingly.[21] This is in contrast to the results of a survey of family physicians in Ontario, 2016, which revealed that 80.7% of physicians measured their patients' weight once yearly.[19] In addition, the current study revealed that only 34.2% of physicians attended training in obesity management or bariatric surgery, and these physicians were significantly more likely to refer. Although not a high proportion, this clearly indicates that the training was beneficial in improving physicians' attitude. Further, this finding suggests that more opportunities for training should be offered to physicians to keep the momentum going.

Out of the participating primary care physicians, 61.2% had seen morbidly obese patients in the past 12 months, 59.7% had initiated conversations with their patients about bariatric surgery, while 40% had referred patients for bariatric surgery. These findings are in contrast to those found in a previous study conducted in Eastern province in 2010, which showed that 65.5% of physicians referred patients to bariatric surgery if indicated.[14] The difference within the same area could be attributed to the attractiveness of bariatric surgery as it was a new service available in governmental hospitals, which has been interrupted during recent years. In addition, in Ontario, approximately 87% of physicians referred patients to bariatric surgery within a year.[19] This reveals there are barriers to referring patients.

A total of 35.4% of physicians reported that they did not know where to refer their patients, making it the most common barrier to referring. This was expected, as there is no governmental obesity centre in Eastern Province; many patients ,observed at the clinic ,undergo surgeries either in private hospitals due to shorter waiting time or abroad, because of low cost. Psychosocial issues and a lack of awareness about indications/protocol for referral, respectively ranked as the second and third most important barriers to referring. The barriers that physicians confronted in the Asser region were the referral system, lack of time, and unavailability of educational materials and guidelines.[13] In contrast, the difficulties faced by primary physicians in Ontario were the inaccessibility of resources and a lack of awareness about the procedure or its advantages.[19] Therefore, the referral system should be communicated effectively and managed correctly, so that it becomes easily accessible to physicians to refer their patients to bariatric centers in Saudi Arabia.

Most of the physicians had a positive attitude toward bariatric surgery, with 64.2% believing in its benefit and 72.3% perceiving that the long-term management after bariatric surgery is effective. However, 51.7% of physicians felt competent in discussing the surgery with morbidly obese patients, and 37.6% were comfortable managing the patients after their surgeries. This, therefore, may have been another reason for the physicians' hesitation in referring patients. According to an American study conducted in 2015, 70% of physicians were competent in discussing the surgery, while 44% were able to manage their patients after the procedure.[20] The positive attitude and willingness of physicians needs to be supported by increasing their knowledge to reach the desirable goal.

In this study, 55.8% of the physicians were satisfied with prescribing non-surgical interventions for morbidly obese patients, while 12% of primary health care physicians in the US were satisfied with suggesting non-surgical methods.[20] This difference may be due to the low competency of the physicians included in this study in discussing the surgery or managing the patient afterward. This issue was also observed in Aseer region where physicians found it harder to manage obese patients than diabetic or hypertensive patients.[13]

This study does, however, have some limitations. It was based on self-report, rather than on data from referral records and patients' files, which may have resulted in a recall bias. For example, the number of obese patient seen in the clinics may have been overestimated. It was also limited to one region in Saudi Arabia as this may be not representative for all PHC physicians around the Kingdome. Definition of morbid obesity was not provided in the questionnaire.

Conclusion:

Since the physicians did have positive attitudes regarding bariatric surgeries, there is a need to improve how they deal with referrals and the post-surgery follow-up processes. The main reason reported by physicians for not referring patients was not knowing where to refer. Other difficulties faced by the physicians were psychosocial issues, a lack of awareness about indication/protocol of referral, its procedure and its benefit, and concerns about follow-up care.

In sum, this study revealed that primary care physicians need to improve their knowledge and skills. They need to raise the quality of the discussion with obese patients about bariatric surgery and to consider it as an option. In addition, post-operations follow-up should be improved in order to provide the best care for patients.

Based on this study, we suggest the following recommendations to improve the management of morbidly obese patients pre- and post-bariatric surgery: 1) provide practical education, including educating undergraduate physicians on how to recognize patient with morbid obesity and conduct workshops for all primary care physicians to ensure the effective management of morbidly obese patients. 2) develop and implement an effective protocol for referring patients for bariatric surgery to be followed by primary care physicians. 3) train primary care physicians on how to effectively manage patients post-surgeries, given that patients will need long term follow-up, which will decrease the burden on specialized centers. 4) conduct further research to look at the system and referrals from the patient perceptive and to gauge the effectiveness of the discussed recommendations.

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Author contributions

AMA-M, ZAA, and MSA worked jointly through all steps of the research according to the requirement of the Saudi Board of Family Medicine. MAMA supervised, provided statistical guidance, and revised the manuscript.

Disclosure

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Notes:

Abbreviations: PHC, primary health care; SA, Saudi Arabia; SPSS, statistical package for the social sciences; IRB, institutional review board; EP, eastern province; GP, general practitioner; FM, family medicine; BMI, body mass index; PCP, primary care physician

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