

# Impact Of Primary Care Physicians' And Health Assistants Practices In Managing Overweight And Obesity In Saudi Arabia 2024

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## Abstract

### Background

Obesity is an emerging public health problem in the world, and health professionals are most likely to be exposed to several occupational, also Obesity is a global world-wide health problem in both developing and developed countries. In Saudi Arabia, this problem becomes an alarming disease both during childhood and adulthood among males and females. Primary Care Physicians' and Health assistants managing Overweight and Obesity are identified as the first line of defense and contributor to cost-effective for the management and prevention of the disease; they are expected to normalize the weights in the community. These include long working hours, shift work, high job stress, irregular food intake, poor opportunities for healthy eating, and physical inactivity at work. Healthcare workers' stressful jobs typically lead to poor eating habits and less opportunity for physical exercise, contributing to obesity risk, and Health assistants are the first point of contact and one of the most important starting points for the successful treatment of being overweight or obese.

**The study aimed:** To assess the Primary Care Physicians' and Health assistants Practices in Managing Overweight and Obesity in Saudi Arabia 2024

**Method:** Cross-sectional survey was utilized in Saudi Arabia 2024 during the November to December, 2024, a total of 300 participant aged 25–≥ 50 years, available. A structured self-reported questionnaire sheet was used to assess in Managing Overweight and Obesity in Saudi Arabia 2024. Using a stratified random sampling technique

**Result:** show regarding the primary Care Physicians' and Health assistants Practices in Overweight and Obesity habitual factors regarding the you have any complications from obesity most of participants answer Yes (40.8%), follow by No were (59.2%), regarding Smoking cigarette most of participant Non-smoker were (41.2%) follow by quit smoking were (21.2%) while smoker were (38.0%), regarding the BMI status most of participant normal weight were (68.0%) followed by overweight were (11.2%) but the obese were (20.8%).

**Conclusion:** These findings highlight Primary Care Physicians' and Health assistants Practices in managing Overweight and Obesity. The strategy to address managing Overweight and obesity among this highly vulnerable population should be directed toward enhancing physical activities, improving eating habits, and managing occupational stress, particularly for Primary Care Physicians' and Health assistants.

**Keywords:** Impact, Primary, Physicians', Health assistants, managing, Overweight, Obesity Saudi Arabia .2024.

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## Introduction

The global burden of overweight and obesity is overwhelming as over 3 number million people die every year.[1] Obesity is defined as abnormal or excessive fat accumulation that may impair health . Body mass index (BMI) is a simple index of weight and height that is commonly used to classify being overweight and obesity in adults.[2] Obesity is the primary cause of cardiovascular diseases (CVD) diabetes mellitus (DM), cancers, and ischemic heart disease (IHD) therefore, it is considered a major non-communicable disease in Saudi Arabia, with a high prevalence and great financial burden that is beyond the capacity of the people and government to cope with As a result, there is an urgent need for innovative, context-oriented, and effective approaches to obesity health services organized and led by family physicians and Health assistants in primary care worldwide. [3] The escalating trend of obesity is a major concern in the Gulf Cooperation Countries, particularly in Saudi Arabia, as it significantly contributes to the epidemic of various chronic diseases and cancers.[4] In Saudi Arabia, particularly in the Makah region, there is a high prevalence of overweight and obesity, pointing to the importance of tackling the problem from different dimensions. The potential association with this high prevalence is linked to various factors related to the context, such as dietary habits, large family size, physical exercise, and maternal employment.[5]

Although obesity is preventable, globally, the prevalence of obesity among adults ranges from 42.4% in the United States of America to 59% in Europe, and one-third of children are obese [6] A review of obesity prevalence in Saudi Arabia by Al-Tamimi classified Saudi Arabia as having the highest prevalence in the Gulf region, with approximately one in four people being obese in 2022 [7] patient who is obese or overweight needs an effective counseling intervention, hence, family physicians , allied health professionals and Health assistants are expected to provide conscious counseling in terms of individual prescriptions of optimal dietary items, calories, and physical exercise per day according to the country's guidelines. Due to the scarcity of data on physical activity counseling practices in PHCs in Saudi Arabia [8], we focused on the assessment of Primary Care Physicians' and Health assistants Practices in Managing Overweight and Obesity, hence, we could correctly identify and address barriers to physical activity counseling. A new policy from the Saudi Ministry of Health recommends a month lifestyle modification intervention program that limits the number and criteria of obese people who are eligible for bariatric surgery.[9] Obese individuals were forced by this new policy to consider a dietary, exercise, behavioral change, and cognitive lifestyle modification intervention program as a first-line therapy and possible course of action.[10]

The last updated clinical practice guideline for the non-pharmacological management of overweight and obese Saudi adults strongly suggests lifestyle intervention rather than usual care alone, individualized counseling interventions rather than a generic educational pamphlet, physical activity rather than no physical activity, and physical activity in addition to diet rather than diet alone.[11] Many countries have implemented taxes on unprocessed sugar or sugar-added foods to reduce their consumption and prevent obesity and other adverse health events. However, there is no concrete evidence of the effectiveness of the intervention on the ground.[12]

This research gap will be subsequently addressed by the assessment of the prevalence of obesity and the identification of some of its major drivers among Saudi Arabian healthcare workers, thus contributing to the literature. Healthcare workers include doctors, nurses, and allied health professionals, along with all other staff working in the healthcare sector, including administrative staff and support workers. The demographic, behavioral, and health-related aspects assessed herein are highly influential on the lifestyle and work-related issues of health professionals. This assessment will help in formulating policies and workplace wellness programs that can reduce the obesity rate among medical professionals and improve their quality of life.[13]

## Literature Review

Recent studies have supported the decreasing or stabilizing trends of adolescent obesity prevalence in some developed countries and European countries [14] Since the trends in obesity prevalence can change and differ from country to country and time to time, we need more information on the time trends of obesity among Saudi Arabia adolescents to establish public health policies and intervention

strategies for timely obesity management. Many previous studies have reported the relationship between obesity and its risk factors [15]

Study by (Carvajal et al 2013)[16] found that, narrative review examines randomized controlled trials of the management of obesity in primary care practice, in light of the Centers for Medicare and Medicaid Services' decision to support intensive behavioral weight loss counseling provided by physicians and related health professionals. Mean weight losses of 0.1–2.3 kg were observed with brief (10- to 15-min) behavioral counseling delivered by primary care providers (PCPs) at monthly to quarterly visits. Losses increased to 1.7–7.5 kg when brief PCP counseling was combined with weight loss medication. Collaborative treatment, in which medical assistants delivered brief monthly behavioral counseling in conjunction with PCPs, produced losses of 1.6–4.6 kg in periods up to two years. Remotely delivered, intensive (>monthly contact) behavioral counseling, as offered by telephone, yielded losses of 0.4–5.1 kg over the same period. Further study is needed of the frequency and duration of visits required to produce clinically meaningful weight loss (>5%) in primary care patients. In addition, trials are needed that examine the cost-effectiveness of PCP-delivered counseling, compared with that potentially provided by registered dietitians or well-studied commercial programs. [16]

Study by (Aljohani et al 2021) found that results of the analysis showed that education level was a protective factor against obesity because subjects with high school education and above had a 20% lower risk of being overweight than subjects with junior high school education and below. [17] Results in line with research (Alotaibi et al., 2022) which shows that college graduates have a lower risk of obesity than primary school graduates (RR=0.96). Someone with a higher level of education will be better at receiving, processing, interpreting, and using information, especially nutritional knowledge. Subjects with higher education will have higher nutritional knowledge because they have more experience and access to information so they can have better nutritional attitudes and practices, especially in terms of food consumption behavior and physical activity which are closely related to obesity.[17]

Some studies have shown that a self-perceived level of competency is a stronger driver of behavior than objective knowledge. However, an individual with adequate knowledge of nutrition stands a better chance of differentiating nutrition facts from nutrition fads to obesity prevention [18] which can affect behaviors and attitudes towards food, nutrition and obesity Many studies have reported that university students do not consume an adequate diet, which can lead to poor health and weight gain [19] The results of one study in the US showed that knowledge in the treatment of Obesity was not enough and knowledge level of different medical groups such as general practitioners, specialists, internal medicine residents and medical students had significant differences with each other [20]

According to the World Health Organization (WHO), in 2016 obesity in children and adolescents aged 5-19 years was more than 340 million obese. From 1975 to 2016, the prevalence of overweight or obese children and adolescents aged 5-19 more than quadrupled, from 4% to 18% in a mane global (West Java Health Office, 2020). The increase was similar for boys and girls: in 2016 18% of girls and 19% of boys were overweight [21] .

On the other hand, students' nutrition knowledge varies from poor to satisfactory, previous studies have shown that insufficient knowledge about healthy nutrition causes many inappropriate eating behaviors and obesity , while high nutrition knowledge was significantly associated with healthy eating behaviors, for example, with the intake of fruits, cereals, dairy products, and pulses [22] However, studies to date that have addressed the relationship between nutrition knowledge and behaviors have primarily considered the consumption of selected food groups rather than overall diet indices. [23]

### **Rationale :**

Primary Care Physicians (PCPs) and Health assistants manage overweight/obesity due to its strong link to chronic diseases (diabetes, CVD, cancer), making PCPs and Health assistants ideal for early, holistic intervention, addressing root causes, offering counseling , prescribing medications, and facilitating weight loss/maintenance, which significantly improves health outcomes, though barriers like time and training persist. High Disease Burden Obesity is a major driver of Type 2 Diabetes, cardiovascular disease, hypertension, stroke, and certain cancers, impacting mortality and morbidity. Evidence for Benefit Even modest weight loss (5-10%) reduces disease risk factors (hypertension, lipids, glucose) and improves quality of life, mobility, and sleep apnea. Ideal Position: PCPs and Health assistants are the most frequent source of health information and are best positioned to screen, counsel, and manage obesity as a chronic condition within a holistic framework.

### **The study aimed**

To assess the Primary Care Physicians' and Health assistants Practices in Managing Overweight and Obesity in Saudi Arabia 2024.

### **Methodology**

#### **Study design:**

Cross-sectional design in the present study with Stratified Random Sampling

#### **Study area and population:**

The population in this study were students of the were listed as students in age <25 to above 50 with a total population of 250 participant in Saudi Arabia

#### **Inclusion criteria**

- Participant obesity.
- < 25 years and above than 16 years
- Both males and females.

#### **Sample size:**

Sample size was calculator by Raosoft Online sample size calculator .It was 250 participant Overweight obesity, based on assumption that during the last 4 weeks, prevalence was considered as 50%, confidence level was 95%, and margin of error was 5% . By adding 10% for defaulter and non-respondent, 250 participants were invited to participate in the study.

#### **Sampling technique**

The sampling technique used Proportionate Stratified Random Sampling with a total of 250 respondents. Thus, nearly 30 working days were needed to collect the sample

#### **Data collection tool**

Self-administrated questionnaire was used for data collection. It was adopted from a previous Saudi study. Some modifications were done and the new format was validated by three consultants (family medicine, Endocrinology and community medicine). The final draft of the questionnaire consists of two sections:

- First section: Includes socio-demographic and personal characteristics of the participants.
  - Second section: Includes associated factors with obesity (physical exercise, diet habit. Additionally, the body mass index (BMI) was calculated by an expert nurse.
- Data collection used a knowledge questionnaire in the form of closed questions, and an attitude questionnaire using a Likert scale of statements

#### **Data Collection technique .**

- During the study period (during the November to December, 2024), the researcher was available at the involved conducted .
- The researcher distributed the questionnaire in the waiting area by themself to the selected paretacpint .
- The questionnaires were collected at the same time.

#### **Data entry and analysis**

Data were entered and analyzed using the Statistical Package for Social Sciences (SPSS version 24). Categorical variables were presented as frequency and percentage whereas continuous variables were presented as mean and standard deviation ( $\pm$ SD).

Statistical significance was determined at  $p < 0.05$  for all comparisons.

#### **Pilot study/pretesting**

A pilot study was conducted on 20 patients, representing approximately 10% of the sample size. It was done in Saudi Arabia rather than those involved in the study to test the clarity of the questions and feasibility of the methodology. No modifications were made according to the pilot results.

#### **Ethical considerations**

Research committee approval ,Written permission from the joint program of family medicine in Saudi Arabia , written permission from Saudi Arabia , Individual verbal consent from all participants before data collection Acknowledgments of all supervisors, advisors, helpers, facilitators and participants. All collected data were kept confidential.

**Budget:** Self-funded

## Results

**Table 1. Distribution of Socio-demographic characteristics of the participated (Age, Gender, Marital status, Level of education) (n-250)**

	N	%
<b>Age</b>		
25-29	65	26
30-39	70	28
40-49	82	32.8
≥ 50	33	13.2
<b>Sex</b>		
Male	148	59.2
Female	102	40.8
<b>Income level</b>		
Below 5000 SR	63	25.2
5000 – 10000 SR	80	32
10,000 – 20,000 SR	45	18
Above 20,000 SR	62	24.8
<b>National status</b>		
Saudi	220	88
Non-Saudi	30	12
<b>Health condition</b>		
Healthy	133	53.2
Having diabetes	37	14.8
Having heart disease	28	11.2
Having hypertension	40	16
High cholesterol	12	4.8
<b>Sources of information about obesity</b>		
Booklets and brochures	100	40
Mass media	63	25.2
Own personal experience	72	28.8
Educational films	82	32.8

Table 1 show the total number of participants was 250 regarding the age most participants in from 40-49 were (32.8%) followed by 30-39 years were (28.0%) while 25-29 were (26.0%), regarding gender of participated male were (59.2%) while female were (40.8%), regarding Income level in study the most of participant's from 5000 SR to 10000 SR were (32.0%) while below 5,000 SR were (25.2%) but above 20,000 SR were (24.8%) , regarding the national status the majority of participant Saudi were (88.0%) while Non-Saudi were (12.0%) , regarding health condition in study the most of participant's healthy were (53.2%) followed by having diabetes were (14.8%) but having hypertension were (16.0%) while having heart disease were (11.2%), regarding Sources of information about obesity most of participant's booklets and brochures were (40.0%) followed by educational films were (32.8%) while own personal experience were (28.8%) but mass media were (25.2%) .

**Table 2 Distribution of the Primary Care Physicians' and Health assistants Practices in Overweight and Obesity habitual factors .**

	N	%
<b>Do you have any complications from obesity?</b>		
Yes	102	40.8
No	148	59.2
<b>Smoking cigarette</b>		
Smoker	95	38
Quit smoking	53	21.2
Non-smoker	103	41.2
<b>BMI status</b>		
Normal weight	170	68
Overweight	28	11.2
Obese	52	20.8

Table 2 show regarding the primary Care Physicians' and Health assistants Practices in Overweight and Obesity habitual factors regarding the you have any complications from obesity most of participants answer Yes (40.8%), follow by No were(59.2%) , regarding Smoking cigarette most of participant Non-smoker were(41.2%) follow by quit smoking were (21.2%) while smoker were (38.0%), regarding the BMI status most of participant normal weight were (68,0%) followed by overweight were (11.2%) but the obese were (20.8%)

**Table 3 Distribution of associated about in Overweight and Obesity (Physical activities)**

	N	%
<b>Physical activities or exercises</b>		
No	163	65.2
Yes	87	34.8
<b>If yes What is type of physical activities or exercises</b>		
Walking	113	45.2
Running	80	32
Both	57	22.8
<b>Do you stop aerobic exercise for two consecutive days or more per week?</b>		
Always	163	65.2
Sometimes	67	26.8
No	20	8
<b>Risk factor</b>		
Asthma	65	26
High blood pressure	80	32
High fat and cholesterol	73	29.2
Emphysema or COPD	37	14.8
Other lung diseases Type of lung disease	40	16
Heart diseases	28	11.2
Arthritis or other rheumatic diseases	70	28

Table 3 show the attitudes (Physical activities) associated about the obesity prevention in students regarding the physical activities or exercises more than half of the participants (65.2%) answer No

practice Physical activities or exercise physical followed by Yes were (34.8%) , regarding If yes What is type of physical activities or exercises the majority of the participants walking were (45.2%) followed by running and both were (32.0%), regarding you stop aerobic exercise for two consecutive days or more per week the majority of the participants always were (62.2%) followed by sometimes were (26.8%) while No were (8.0%) , regarding Risk factor the majority of the participants high blood pressure were (32.0%) followed by arthritis or other rheumatic diseases were (28.0%) while asthma were (26.0%) but high fat and cholesterol were (29.2%) while heart diseases were (11.2%) but Other lung diseases Type of lung disease were (28.0%) .

**Table 4 Distribution of health education on knowledge and Practices in Managing Overweight and Obesity prevention in participated**

Variable					Chi-square	
	Favorable		Un favorable		X <sup>2</sup>	P-value
	No	%	No	%		
pay attention to the caloric value of the foods I eat	122	48.8	128	51.2	0.144	0.704
My food choices are determined by concern for my health	80	32	170	68	32.400	0.000
Thinking about food is a particular concern for me	105	42	145	58	6.400	0.011
A belief in healthy eating increases my self-esteem	127	50.8	123	49.2	0.064	0.800
Healthy eating influences my lifestyle	190	76	60	24	67.600	0.000
Eating healthy foods can improve my appearance	162	64.8	88	35.2	21.904	0.000
Attitude towards food and nutrition	165	66	85	34	25.600	0.000

Table 4 distribution of health education on knowledge and attitudes about diet for obesity prevention in students participated show regarding pay attention to the caloric value of the foods I eat while no significant relation were (P-value =0.704) and X<sup>2</sup> (0.144) the majority of participant un favorable were (51.2%) followed by the favorable were (48.8%), regarding food choices are determined by concern for my health while a significant relation were (P-value =0.000) and X<sup>2</sup> (32.400) the majority of participant un favorable were (68.0%) followed by the favorable were (32.0%), regarding Thinking about food is a particular concern for me while no significant relation were (P-value =0.011) and X<sup>2</sup> (6.400) the majority of participant un favorable were (58.0%) followed by the favorable were (42.0%), regarding belief in healthy eating increases my self-esteem while no significant relation were (P-value =0.800) and X<sup>2</sup> (0.064) the majority of participant favorable were (50.8%) followed by the unfavorable were (49.2%), regarding healthy eating influences my lifestyle while a significant relation were (P-value =0.000) and X<sup>2</sup> (67.600) the majority of participant favorable were (76.0%) followed by the unfavorable were (24.0%), regarding eating healthy foods can improve my appearance while a significant relation were (P-value =0.000) and X<sup>2</sup> (21.904) the majority of participant favorable were (64.8%) followed by the unfavorable were (35.2%) , regarding attitude towards food and nutrition while a significant relation were (P-value =0.000) and X<sup>2</sup> (25.600) the majority of participant favorable were (66.0%) followed by the unfavorable were (34.0%)

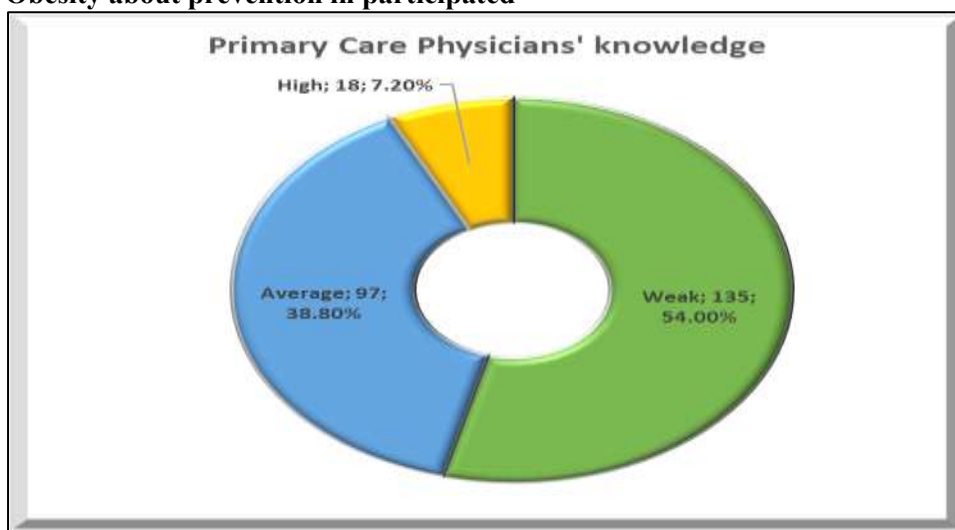
**Table 5 Distribution of Primary Care Physicians' on knowledge managing overweight and Obesity about prevention in participated**

	Primary Care Physicians' knowledge	
	N	%
Weak	135	54

<b>Average</b>	97	38.8
<b>High</b>	18	7.2
<b>Total</b>	250	100
<b>X<sup>2</sup></b>	85.496	
<b>P-value</b>	<0.001*	

Table 5 regarding distribution of Primary Care Physicians' on knowledge managing overweight and Obesity about prevention in participated the most of participant answer in weak knowledge were (54.0%) followed by average were (38.8%) while high were (7.2) while a significant relation were < P-value= 0.001 and X<sup>2</sup> 85.496 while total were (100.0%) .

**Figure 1 Distribution of Primary Care Physicians' on knowledge managing overweight and Obesity about prevention in participated**

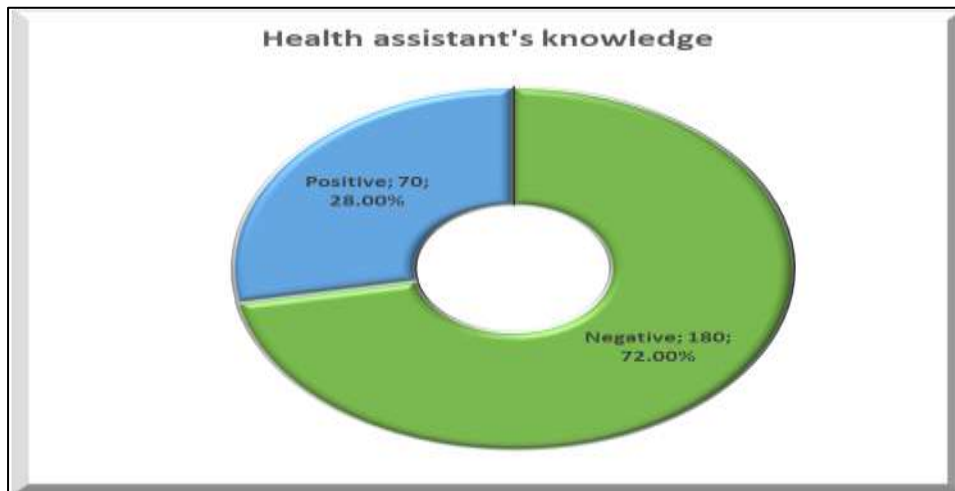


**Table 6 Distribution of Primary Care Health assistants on knowledge managing overweight and Obesity about prevention in participated**

	Health assistant's knowledge	
	N	%
<b>Negative</b>	180	72
<b>Positive</b>	70	28
<b>Total</b>	250	100
<b>X<sup>2</sup></b>	48.4	
<b>P-value</b>	<0.001*	

Table 6 regarding distribution of primary Care Health assistants on knowledge managing overweight and Obesity about prevention in participated the most of participant answer in negative were (72.0%) followed by positive were (28.0%) while total were (100.0%) while a significant relation were < P-value= 0.001 and X<sup>2</sup> 48.4

**Figure 2 Distribution of Primary Care Health assistants on knowledge managing overweight and Obesity about prevention in participated**



## Discussion

This trial aimed to assess the Primary Care Physicians' and Health assistants Practices in Managing Overweight and Obesity in Saudi Arabia in the primary care centers in reducing BMI and improving WC in overweight and obese adults. This study identified in the effected of Primary Care Physicians' and Health assistants Practices in Managing Overweight and Obesity at Saudi Arabia using nationally representative sample data. First, the prevalence of obesity among population doubled from in 2019, increasing significantly by on average annually. According to previous studies, the average obesity prevalence among Saudi Arabia has been increasing, similar study since 2019, showing a remarkable increase for participant [24] The findings of this study indicate that the prevalence of obesity among participant in Saudi Arabia differs from that in some other developed countries, where studies have shown stable or decreasing obesity rates [25] Studies analyzing the trends of obesity among Chinese adolescents between 2015 have shown a decline in obesity rates since 2011, unlike in Saudi Arabia.[26] the mean age of 25 to  $\geq 50$  years for participants indicates the compliance of youth and young adults with the planned intervention. This result reflects the effectiveness and convenience of the intervention in the context, and it is coherent with other studies.[27]

In our study show the total number of participants was 250 regarding the age most participants in from 40-49 were (32.8%) the gender of participated male were (59.2%) , regarding Income level in study the most of participant's from 5000 SR to 10000 SR were (32.0%) the national status the majority of participant Saudi were (88.0%) but health condition in study the most of participant's healthy were (53.2%) but having hypertension were (16.0%) while having heart disease were (11.2%), followed by educational films were (32.8%) (See table 1)

Obesity and overweight are major public health problems among popualtion, with significant health, demographic and socio-economic implications [23]. Food environments have changed in past decades and obesity and overweight rates have increased dramatically in both developing and developed countries. It also investigated the factors associated with overweight/obesity. The study established that overweight and obesity prevalence is high and linked with sedentary behavior, poor eating habits and limited dietary diversity.[28]

Overweight and obesity prevalence was lower than what has been reported in the literature. Although this prevalence was similar to that in other studies [24], it was higher than the rate among pre-school student participating in a cross-sectional study conducted in twenty-six African countries. Several others have shown that urban student, because of favorable environmental and socio-economic conditions, generally manifest better nutritional status than their rural counterparts [22]. A similar study among rural adolescent's school students will be necessary to confirm or refute this hypothesis in KSA. The anther survey found higher prevalence rates of overweight and obesity in girls than in boys, which concurs with other reports from low- and middle-income countries, but the opposite held true in high-income countries where overweight and obesity rates were higher in boys than in girls [29]

distribution of health education on knowledge and attitudes about diet for obesity prevention in students participated show regarding pay attention to the caloric value of the foods I eat while no significant relation were (P-value =0.704) and X2 (0.144) the majority of participant un favorable were (51.2%) . Thinking about food is a particular concern for me while no significant relation were (P-value =0.011)

and X2 (6.400) the majority of participant of unfavorable were (58.0%) followed by the favorable were (42.0%) (See table 4)

Study by (Salwathura. et al ) findings indicate that less than 20% of the participants had received any training in the management of obesity. This is consistent with other studies that have reported a lack of training and competence in obesity management.[22] Training is essential to maintaining physicians' and Health assistants knowledge and skills up to date and in helping them in their practice of weight control programs. Despite guidelines on the counseling and management of obesity,[17] only one-third of obese patients reported having received a diagnosis that they were obese or being given any weight-related counseling by their physicians.[27] Physicians who had good training on obesity screening and counseling during their residency training were more likely to report that they always discussed diet and exercise with their obese patients.[30] Also, patients who get counseling on weight control are twice more likely to report that they were currently trying to lose weight.[31] However, many overweight and obese patients reported their desire to get more intensive management for weight loss than what their physicians were providing.[32]

Tadesse et al (2017) reported defined attitude as an individual's closed reaction to a specific stimulus or item that already incorporates the relevant opinion and emotion variables. Personal experience, the impact of other individuals who are seen as important, cultural influences, mass media, educational institutions, religious organizations, and societal variables are all factors that affect views, [31]

## Conclusion

The family medicine physicians and Health assistants in Saudi Arabia have adequate knowledge about obesity and positive attitudes toward obesity management. However, their counseling practices were poor. The main obstacles to controlling obesity are a lack of training and poor patient adherence to the management plan. Training courses and the inclusion of obesity management in medical training is highly recommended. The system for providing educational materials as part of managing overweight or obesity was found to be inadequate had never done so. The family medicine physicians and Health assistants had sufficient knowledge and positive beliefs about obesity management but also improper counseling practices. A lack of training and poor patient compliance with management plans are the main barriers to controlling obesity levels.

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