



Drugs and Herbs Used for Weight Loss among Medical Staff in Karbala city

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Abstract

Obesity is a rapidly increasing nutritional disorder in the last decades, that's associated with major health problems. Obesity management is based on both lifestyle interventions and/or pharmacological therapy. Further, many people seek conventional therapies including herbal products for weight loss. This study aims to identify common drugs and herbs used for weight loss among medical staff and to determine factors affecting their choices of weight loss products. A cross-sectional study, 500 medical staff working in hospitals and some primary health care centers in Karbala governorates were been enrolled in the study. Data collection period was from 15th February to 31st May 2018 using a self-administer questionnaire specially prepared for the purpose of study. Nearly one third of participants had used weight losing product before. More than half of them (56.4%) were used chemical sort of weight losing product. Orlistat was the most frequent drug used; and 51.5 of sample had used weight losing products for 1-3 months. Weight losing products users were significantly more likely to be males, pharmacists, having chronic diseases, and a positive family history of obesity.

Keywords: Obesity, weight losing product, herbs, drugs, Orlistat

Introduction

Obesity/overweight is a worldwide public health problem that results when the net energy input is more than exhaustion. Worldwide, obesity prevalence had increased dramatically, where its rates had been tripled over the last 40 years. This raise occurs at all ages, developed and developing countries, and both genders though females showed higher rates of obesity and over weight⁽¹⁻⁴⁾.

Body mass index (BMI) is the most widely used measure to estimate obesity for all ages. Adults with a BMI of 25 and more Kg/m² are regarded as overweight , those with a BMI above 30 Kg/m² are considered as obese. While the normal range is 18.5

to 24.9 Kg/ m² and BMI less than 18.5 indicates underweight^(1,5).

As a multifactorial metabolic disorder, obesity is regarded the second most common preventable cause of mortality after smoking. Obesity is linked with increase morbidity and mortality of cardiovascular diseases, endocrine disorders, especially diabetes mellitus and dyslipidemia, many types of cancer, musculoskeletal diseases, and many other diseases as well as its psychological impact. Obesity control requires multipronged strategies that need to be applied on community levels. Others works at personal level and some treatment strategies might be required for life. A reduction of 5% to 10% body weight had shown a significant improvement in health and quality of life, While some countries takes

serious steps in controlling obesity, others lay behind^(1,6-8).

Treatment options of obesity vary from lifestyle and diet regulation to drug treatment by certain medicines and might even require surgery. The preferred management option for obesity is life style changes, and its concur with each other management plan. However, lifestyle modifications is not being performed regularly because of busy schedules and sedentary lifestyle pervasion. In addition, surgical intervention runs out of the option because of the high cost and higher potential complication. Therefore, an increasing tendency to use drugs and herbs to control overweight and obesity was recognized^(3,9,10).

Weight loss products (WLP), could be drugs (what is called chemical or western medications) or herbs. Several drugs are used for treatment of obesity with different mechanism of action from central appetite suppressor, inhibitors for digestion and absorption, and others. Probably Orlistat is the most widely use medication worldwide and even in Iraq. Metformin is medication primarily used for treatment of hyperglycemia and diabetes mellitus, but it had wait reduction effect. Other wait reduction drugs including Lorcaserin, Phentermine, Phentermine/ Topiramate, Naltrexone/Bupropion, and Liraglutide is rarely used or were available in Iraq at time of study. However, these drugs have some drawbacks, including considerable side effects, limited efficacy in controlling body weight, and being costly^(2,5,10,11).

Herbs are becoming the most common alternative treatment option for treatment of obesity. And they are preferred due what is believed that herbs are largely derived from crude plants, compared to chemically processed drugs. Not restricted to obesity, herbs are increasing utilized for many acute or chronic diseases as they are thought to have less side effects, more effective, less toxic and even cheaper. However, these beliefs is not necessarily true. However, there are many types of herbs being used worldwide and some are used locally. Further, these herbs have different mechanism of action as decreasing appetite, impairing digestion, increasing basal metabolic rate, and burning fats. Furthermore, many of these come in combinations, having different trade names. However, the evidence regarding the activity of herbs is not well understood

and the faked or unknown composition of many is common at least in Iraq were many trade name herbs are sold online⁽¹⁰⁻¹⁵⁾.

The aim of this study is to find the prevalence of using weight loss products (WLP) among medical staff, to identify drugs and herbs used in weight loss and to determine factors affecting the use of such WLP.

Subjects and Methods

An analytic cross sectional study that conducted at several hospitals and many primary health care centers and other health facilities of Karbala Health Directorate. Data collection was done over the period February 15-May 30, 2018.

The study included 500 medical staff (physician, dentist and pharmacist) from total of 1683 (871 physicians, 302 dentists, and 510 pharmacist) who are still working according to report of section of vital statistics, Planning Department in Karbala Health Directorate. Pregnant women and those who refused to participate were excluded from study. Nearly 620 questionnaires were distributed to participant conveniently. 523 questionnaire forms were returned. So the response rate was 84.35%. The questionnaires with incomplete data were excluded, so finally 500 questionnaires were included in the study.

Official and ethical approval was obtained from Council of Family Medicine in Arab Board for Health Specialization\ Baghdad. And from Research Ethics Committee at Karbala Health Directorate. Each participant was informed about the study objectives and being assured for the confidentiality of personal data and answers then averbal consent was taken from them to participate. Further, the questionnaire was anonymous, participation was voluntary.

The questionnaire was prepared by the researchers (NTA and AAA) after a thorough literature review and it had been tested by a pilot study includes 25 medical staff who does not included in the study. The questionnaire was consisted of three sections: Section A: Demographic information. This included the respondent's age, gender, occupation, level of education, place of working, marital status, and years of work, current weight and height, presence of chronic disease or drugs used, smoking, and family

history of obesity. Section B: Knowledge about causes of obesity, best way to lose weight. If they tried to lose weight, the respondents were asked about their opinions in safety of drugs or herbs using to lose weight and if these agents were approved by FDA. Section C: practicing of participant on drugs and herbs used in losing weight. Items asked in this section about the type of drugs or herbs were used, frequency, source of information, and side effect of supplements, used other method to lose weight.

The Body mass index (BMI) in Kg/m² was calculated and participants were categorized into 4 groups into under-weight, normal, overweight, and obese according to their BMI <18.5, 18.5-24.99, 25-29.99, and > 30 Kg/m² respectively ⁽¹⁾.

The data was entered and analyzed using Statistical Package for Social Sciences (SPSS) version 22. Quantitative data were presented as mean, standard deviation (SD), minimum, and maximum. Categorical data presented by frequencies (N) and percentages. Chi square test was used to assess the

association between ever using WLP and certain information. A level of P – value less than 0.05 was considered as statistically significant.

Results

This study enrolled 500 participants. Their age ranged from 24 to 65 years with a mean age and SD of 35.7±9.5 years and 416 (83.2%) were in the age group of 23-46 year. Also 295 (59.0%) were females, 393 (78.6%) were married, 268 (53.6%) were physicians 353 (70.6%) had Bachelor degree, and 300 (60%) worked at hospitals

The years of work ranged from two to 40 years with a mean ± SD of 11.5 ± 9.3 years. And 365 (65%) had experience of more than five years.

On the other hand out of 459 participants who reports their weight and height 197 (42.9%) were overweight and 102 (22.2%) were obese so overweight and obesity was present in 299 (65.1%) of the sample. As shown in table 1.

Table 1: Demographic characteristics of participants

Variable	Category	N	%
Age Group\ years	• 20-45	416	83.2%
	• 46-65	84	16.8%
Gender	• Male	205	41.0%
	• Female	295	59.0%
Marital status	• Married	393	78.6%
	• Single	101	20.2%
	• Divorced	4	0.8%
	• Widow	2	0.4%
Occupation	• Physician	268	53.6%
	• Pharmacist	158	31.6%
	• Dentist	74	14.8%
Higher Degree	• Bachelor	353	70.6%
	• Diploma/Master	67	13.4%
	• Doctorate/Board	80	16.0%
Work place	• Hospital	300	55.0%
	• PHCC	99	19.8%
	• Health Directorate	50	10.0%
	• Others	41	8.2%

Experience Category	• Up to 5 y	175	35.0%
	• > 5 y	325	65.0%
BMI Category*	• Underweight	1	0.2%
	• Normal Weight	159	34.7%
	• Overweight	197	42.9%
	• Obese	102	22.2%

*41 respondent do not respond to weight and/or height questions.

In this study, 163 (32.6%) of study participants had used WLP before as shown in Figure1. While if we measure the users from the 299 reported overweight\ obese subjects the rate will be 54.4% of WLP usage among overweight\obese medical staff. More than half of the users (56.4%) were used chemical sort of WLP. Orlistat was the most frequent WLP used; and 39.3% of them were described by pharmacist. More than half of them had used WLP for period between 1 – 3 months. The most common side effect reported was steatorrhea (25.8%), and 53.4% of them reported obvious weight loss due to WLP as shown in table (2).

Figure 1: Distribution of participants according to the use of WLP

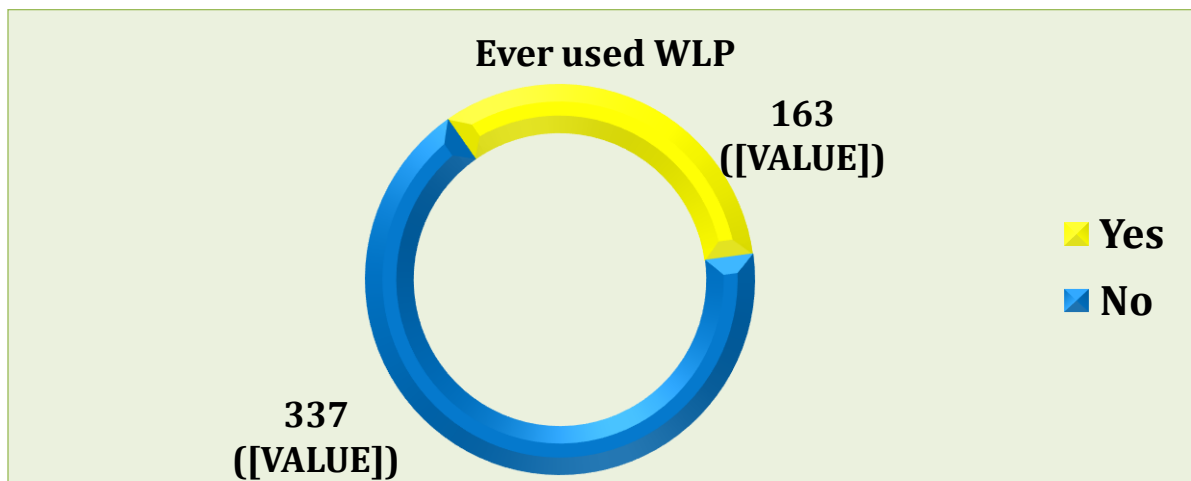


Table 2: Distribution and categorization of WLP users

		No. (n=163)	Percentage (%)
Sort of used WLP	Chemical	92	56.4
	Herbal	55	33.7
	Mixed	16	9.8
Drugs or herbs used	Orlistat	80	49.1
	AB slim	31	19.0
	Green tea	18	11.0
	Metformin	16	9.8
	Ginger	15	9.2

	Cinnamon	10	6.1
	Apple cider vinegar	9	5.5
	Other	30	18.4
Source of WLP	Pharmacist	64	39.3
	Physician	46	28.2
	Internet	30	18.4
	Traditional medicine	18	11.0
	Others	5	3.1
Duration of using WLP (Months)	< 1	25	15.3
	1 – 3	84	51.5
	> 3 – 6	39	23.9
	> 6	15	9.2
Side effect induced by WLP according to participants' opinion	Steatorrhea	42	25.8
	Diarrhea	37	22.7
	Dry mouth	26	16.0
	Headache	19	11.7
	Palpitation	17	10.4
	Insomnia	13	8.0
	Hypertension	10	6.1
	Constipation	4	2.5
	Other	16	9.8
Weight loss due to WLP	Obvious	87	53.4
	Negligible	58	35.6
	No change	18	11.0

Regarding knowledge and practice of participants towards obesity and its management, the majority of participants think that unhealthy diet and immobility were the most common causes of obesity (85.6% and 81% respectively) and the majority think that physical exercise and healthy dieting were the best ways to lose weight (88.2% and 87.2% respectively). More than half of participants (57%) said that both chemicals and herbs were safe, 52.2% of them believe that the majority of WLP are not approved by FDA, and 49% of them didn't know if herbal may contain drugs substance not mentioned in label or not as shown in table (3).

Table 3: Distribution of participant according to their knowledge and practice towards obesity and its management

Question		No. (n=500)	Percentage (%)
Causes of obesity	Immobility	405	81.0

	Unhealthy diet	428	85.6
	Hereditary	214	42.8
	Stress / Depression	4	0.8
	Disease	4	0.8
	Medications	2	0.4
Best way to lose weight	Physical exercise	441	88.2
	Healthy dieting	436	87.2
	Drugs	14	2.8
	Bariatric surgery	12	2.4
	Other measures	5	1.0
Which type of product is safe	Chemical	57	11.4
	Herbs	75	15.0
	Both	285	57.0
	Don't know	83	16.6
Are the majority of WLP approved by FDA	Yes	42	8.4
	No	261	52.2
	Don't know	197	39.4
Herbal may contain drugs substance not mentioned in label	Yes	235	47.0
	No	20	4.0
	Don't know	245	49.0

In association between ever using WLP and certain information of participants, those who used WLP were significantly ($P < 0.05$) more likely to be males (37.6%) than females (29.2%), pharmacists (44.3%) than physicians (27.6%) or dentists (25.7%), having chronic diseases (36.5% compared to 31.5% in absence of chronic diseases) and a family history of obesity (38.9% compared to 23.1% in negative family history). Other factors (Age, marital status, degree of education, years of work and smoking) did not show significant relations with using WLP in sampled participants. ($P > 0.05$) as shown in table (4).

Table 4: Association between general information and using WLP before

Variable	Ever used WLP		Total (%) n= 500	P- Value
	Yes (%) n= 163	No (%) n= 337		
Age (Years)	< 45	136 (32.7)	280 (67.3)	0.921
	≥ 45	27 (32.1)	57 (67.9)	
Gender	Male	77 (37.6)	128 (62.4)	0.048
	Female	86 (29.2)	209 (70.8)	

Marital Status	Married	130 (33.1)	263 (66.9)	393 (78.6)	0.662
	Unmarried	33 (30.8)	74 (69.2)	107 (21.4)	
Occupation	Physician	74 (27.6)	194 (72.4)	268 (53.6)	0.001
	Pharmacist	70 (44.3)	88 (55.7)	158 (31.6)	
	Dentist	19 (25.7)	55 (74.3)	74 (14.8)	
Degree	Bachelor	120 (34.0)	233 (66.0)	353 (70.6)	0.175
	Diploma / Master	24 (35.8)	43 (64.2)	67 (13.4)	
	Doctorate / Board	19 (23.8)	61 (76.2)	80 (16.0)	
Years of work	< 5	51 (29.1)	124 (70.9)	175 (35.0)	0.226
	≥ 5	112 (34.5)	213 (65.5)	325 (65.0)	
Smoking status	Current smoker	18 (40.0)	27 (60.0)	45 (9.0)	0.473
	Nonsmoker	140 (31.7)	302 (68.3)	442 (88.4)	
	Ex-smoker	5 (38.5)	8 (61.5)	13 (2.6)	
Chronic medical disease	Yes	38 (36.5)	66 (63.5)	104 (20.8)	0.336
	No	125 (31.5)	271 (68.5)	396 (79.2)	
Family history of obesity	Yes	117 (38.9)	184 (61.1)	301 (60.2)	0.001
	No	46 (23.1)	153 (76.9)	199 (39.8)	

Discussion

Obesity prevalence had greatly increased in Iraq over the last 15 years, and a warning figures of over 60% overweight and 30% obesity prevalence among adults is being reported⁽¹⁶⁻¹⁷⁾. Further due to obesity and its adverse health conditions, advertisements through the media encourage people to lose weight. Such advertisement encourages obese people to use WLP, "including drugs and/or herbs, to lose weight including medical staff.

A considerable percentage of nearly one third of participants had ever used WLP to lose weight. . These results are similar to that reported in studies conducted by Fazelian et al in Iran 2014 (32.3%)⁽¹⁸⁾ and by Martin et al in Brazil 2006 (one third)⁽¹⁹⁾. Bertisch et al 2008 in USA reported little higher (36%)⁽²⁰⁾, while Eldalo et al 2017 study in Saudi Arabia reported much higher (98.1%)⁽³⁾. Further,

more than half of overweight\ obese participants indicate the use of WLP, this high percentage might reflects similar rates among overweight\ obese people in general population.

About half of participant used or advised weight loss drug is orlistat (49.1%) for weight loss. Probably because it's the oldest drugs available in Iraq, almost the only approved drug by the FDA available in Iraq at time of study and it does not require medical prescription (The only FDA-approved OTC weight loss product currently on the market is orlistat)⁽²¹⁾. Akour et al in Jordan reported orlistat as the second mostly used medication next to Metformin as the most used medication, while Eldalo et al study which reported that green tea was the most common WLP used for losing weight⁽³⁾.

In this study, major source of information about WLP to participants were pharmacists (39.3%).

Pharmacists have an obligation to ensure they provide appropriate advice to consumers about complementary medicines as they do with registered prescription medicines. This result is different from studies conducted by Fazelian et al in Iran 2014⁽¹⁸⁾ and by Eldalo et al study in Saudi Arabia 2017⁽³⁾, which reported that 60% of patients admitted that friends and relatives, followed by the internet, were the major sources of information on the use of WLP to manage obesity. Also it differs than a study conducted by Habib et al in Baghdad 2012 who stated that internet was the main source of physician knowledge regarding obesity management⁽²²⁾.

In current study, about half of the users (48.5%) have steatorrhea (oily stools) and diarrhea mainly side effect from weight loss drugs. This is expected as steatorrhea is the main side effect associated with orlistat. Different side effects reported according to the medications used^(11,23).

Males, pharmacists and those with positive family history of obesity showed a statistically significant association of using WLP. The Iraqi culture and current health services delivery trends that might be attributed to why the males and pharmacists are more involved in prescribing drugs to themselves or their clients. While those with positive family history of obesity could have more aggressively impacted by obesity.

Most of participant believe that WLP are not FDA approved, further, only little percent of medical staff trust that WLP, and believe that it could contain substances not mentioned in the label of it. This could reflect the lower control on medications in the Iraqi market and the possible high rate of faked medications in Iraq including the WLPs. Noticing that AB slim which is a herbal product that come next to Orlistat in current study had withdrawn from the market and forbidden for safety and improper contents within the capsules.

In conclusion, using WLP is prevalent among Iraqi medical staff, most WLP used by participant were Orlistat, and the factors affecting participants in using weight loss products were male gender, being pharmacist, and positive family history of obesity. However WLP in Iraq need careful monitoring as medical staff have considerable concerns with it. While health diet and increase physical activity need to be improved as obesity

prevalence had increased dramatically in Iraq over last 15 years.

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