

Assessment the Knowledge of the New Trends in Obesity Treatment among Female Students of Applied Medical Sciences in Umm Al-Qura University-Makkah

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Abstract

Obesity is associated with numerous diseases and metabolic abnormalities. Treatment should begin with lifestyle changes that focus on behavioral modification, diet, and exercise. When lifestyle modification schemes are unsuccessful, drug therapy is an attractive option. Food and Drug Administration (FDA) regulates dietary supplements, including those promoted for weight loss. Weight-loss supplements differ from over-the-counter or prescription medications in that the FDA does not classify them as drugs. In this study we Assess the knowledge and beliefs of students in Faculty of Applied Medical Sciences about new methods used for weight reduction. The present study was conducted on 70 interviewed of students. Specific questionnaire was used to collect data about methods used for weight control. Statistical analysis was performed by using SPSS software version 19. The obtained data showed that student's preferred physical activity and diet they have awareness about detox water but little awareness about Conjugated linoleic acid and blood group diet. The present study suggested that Healthcare professionals must make efforts to educate themselves and public about new methods used for weight control.

Keywords: Obesity, blood group diet, detoxes water and Conjugated linoleic acid.

1. Introduction

Obesity is defined as a condition of abnormal or excessive fat accumulation in adipose tissue, to the extent that health is impaired. The amount of excess fat in absolute terms, and its distribution in the body - either around the waist and trunk or peripherally around the body (Ofei, 2005).

Obesity is related to increased risk of development of type 2 diabetes mellitus (T2DM) and cardiovascular disease (CVD) that cause increased risk of premature death (Catherine *et al.*, 2013).

Conjugated linoleic acid (CLA), a family of fatty acids found in beef, dairy foods, and dietary supplements. CLA was shown to exhibit anti-atherosclerotic and anti-obesity properties. Potential mechanisms responsible for these anti-obesity properties of CLA include: 1) decreasing energy intake by suppressing appetite 2) increasing energy expenditure in white adipose tissue (WAT), muscle, and liver tissue, or LBM, 3) decreasing lipogenesis or adipogenesis, 4) increasing lipolysis or dilapidation, and 5) apoptosis via adipocyte stress, inflammation, and/or insulin resistance (Arion *et al.*, 2010).

Weight loss products made from natural sources appeal to consumers due to the (miss) perception that "natural" usually means safe. Green tea is one of the most common natural ingredients included in over-the-counter weight loss products available in Canada. Consumers and pharmacists want to know whether evidence supports the use of green tea in weight loss (Jurgens and Whelan, 2014).

Some people say water lacks taste and can be boring. Adding a little lemon to your water is a great way to add flavor and experience the benefits offered by lemons. It will also help cleanse your body of toxins and waste. The American Cancer Society recommends hot lemon water for alleviating constipation and clearing the bowels. Citrus fruits like lemons and oranges contain pectin, a dietary fiber that supports digestion. Lemons actually contain more pectin than oranges as well as high levels of citric acid. Citric acid supports digestion, as does pectin, which slows down the speed that food leaves the stomach and improves the way it's broken down. One study found that five grams of pectin mixed with orange juice produced a greater feeling of fullness after eating. This might help reduce the amount of food consumed and support weight loss efforts (Edward, 2016).

1.2 Objectives of the present research:

Assessment of the knowledge and beliefs of female students in UQU university about new methods used for weight control.

2. SUBJECT AND METHODS

2.1 SUBJECTS

Across-sectional study was applied on 140 students. The subjects were selected from Applied Medical Sciences in Umm Al-Qura University. The age of students from 19 to 24 years. We used close ended questionnaires to obtain the data during the academic year 1438-1439 (2016-2017).

2.2 METHODS

2.2.1 Study design:

Subjects were classified as UQU Medical students.

2.2.2 Data collection:

Data were collected by administering specially designed questionnaires (appendix 1) which include sections as follows:

1-Ask about knowledge and beliefs toward obesity.

2-Ask about knowledge and beliefs toward some regimens and diets used for weight reduction and knowledge about benefits and hazards of these diets. The answers for these questions were coded as yes or no and chosen answers.

2.2.3 Anthropometric measurement

2.2.3.1 Height:

Every subject's height was measured in centimeters while the participant stood without shoes (Yalcin *et al.*, 2004), the subject was asked to stand straight with the head Frankfort horizontal plane, feet together, knee straight, and heels, buttocks, and shoulder blades in contact with the vertical surface of the stadiometer and wall.

2.2.3.2 Body weight:

Weight was measured in kilograms to the nearest 0.1 kg with an electronic weight scale (Yalcin *et al.*, 2004).

2.2.3.3 Body Mass Index (BMI):

BMI is used as an indicator of your risk for diseases that can occur with more body fat. (BMI) was calculated using the BMI formula ($\text{weight} \div \text{height}^2$; $\text{Kg} \div \text{m}^2$) categories of BMI were shown in (A) table (Santos *et al.*, 2004).

2.2.3 Statically analysis:

The obtained data were statically analyzed by SPSS version 20. Data were tabulated as number, percent and mean \pm sd.

3. Results

Data in table (1) shows the mean \pm SD of age, height, weight and BMI of present subjects were 24.42 ± 7.99 , 155.703 ± 18.57 , 63.618 ± 18.72 and 25.063 ± 6.07 .

As shown in table (2) the highest percent of subjects were in desirable weight represented 30%. 22.9% of subjects were overweight and in Class I obesity. The lowest percent of subjects were in Class II obesity and underweight represented 5.7% and 18.6% respectively.

According to data in table (3) 24.6% of subjects married, 69.6% of them were single and 2.9% were divorced.

As shown in table (4) the highest percent of subjects reported that obesity is a disease represented 97.1%, also the highest percent of them agree that normal weight is important for good health, reducing weight is a benefit to health and most of obese patients must decrease their weight represented (98.6%, 95.0% and 90.0%) respectively. The highest percent of subjects not agree about using surgery for treating morbid obesity while the highest percent of them agree that surgery helps on faster weight reduction represented 67.1% and 75.7% respectively. 85.7% of subjects agree that control of obesity is important on the long term. 54.3% of subjects agree that little people can decrease their weight and maintain their new weight. In the same table 68.6% of subjects agree that obese people feel ashamed.

Data in table (5) showed that 70% of subjects monitor their weight, 14.3% of them have ideal weight, 17.1% was underweight, 24.3% was normal weight, 32.9% was overweight and 11.4% was obese. 75.7% of subjects feel a desire to change their weight and 24.3% did not want to change their weight. 48.6% of subjects used diets for reducing weight and 51.4% did not use any diet. In the same table 62.9% of subjects see diet is the best way for weight control followed by sports represented 35.7% of subjects. The highest percent of subjects agree that social media and advertising encouraged them to select diet for weight reduction represented 88.24% and 70.58% respectively.

According to table (6) 55.7% of subjects did not hear about blood group diet while 44.3% of them know it and 18.39% of them advised to use it and only 29.03% of subjects think it has an effect on weight reduction.

Table (7) showed that 78.6% of subjects heard about detox drinks, 50.9% of them think people used it because it had low cost and 52.73% of them reported that it has an effect on weight reduction. The highest percent of subjects think it used twice daily which was 40% and also 40% think it used before meals. 49.09% of subjects reported that internet and advertisement effect on using detox water. 45.45% of subjects think that

drinking much detox water have induced side effect. 29.09% of subjects reported that lemon was common used in detox water.

According to table (8) 25 of students heard about CLA, 40% of them reported that the main reason for using CLA related benefits of it and 36% of them said that CLA is cheap and available and 68% of subjects think that CLA has an effect on weight control. The highest percent of subjects reported that CLA consumed one time daily represented 48% and 52% of subjects said that it consumed before meals followed by them who said that it consumed during exercise which was 24%. In the same table 52% of subjects used CLA by dietitian, 32% by gem and 16% by advertisement and enter net. 72% of subjects think that excessive intake of CLA has future disadvantages. 72% of subjects did not know other health benefits of CLA. 64% of subjects reported that CLA cannot be used as an alternative to healthy diet and exercise. In the same table 48% of subjects see that CLA speed fat burning and 32% reported that it make fill appetite.

4. Discussion

Obesity and its related complication is one of the global wide problems leading to cause more than 53 diseases and in India, around 30 million people are suffering with obesity. Modern methods of treatment, such as synthetic drugs and surgery, still have to be improved to show safety and efficacy. Its main concerns with such treatments are the high costs and adverse effects create obesity and its related diseases (Abinaya and Pavitr, 2014).

Successful weight loss requires commitment and long-term lifestyle changes to decrease energy intake and increase physical activity. By contrast, freely available diet remedies are advertised as quick solutions which promise to induce weight loss with little or no effort (Pillitteri *et al.*, 2012).

Obtained data in the present study showed that 97.1 % (table 4) of subjects agree that obesity is a disease and obese patient must decrease their weight also they reported that obese people feel ashamed. These finding agree with (Lynch *et al.*, 2007) they reported that, thin body is the most preferred body shape in Western countries. Thinness is a symbol of beauty, success, control, and sexual attractiveness, while obesity represents laziness, self-indulgence, and lack of willpower.

As shown in table (5) 70 % of subjects interest to monitor their weight and take care of IBW and they reported that diet and physical activity is the best way for weight control. The highest percent of subjects agree that social media and advertising encouraged them to select diet for weight reduction. According to The Health Survey for England, (2008) about a quarter of adults (27 % of men and 29 % of women) thought they knew the current recommendations for physical activity. Stacy Schmidt, (2016) found that small amounts of physical activity 15 minutes a day can have a significant health impacts, increasing life expectancy by three years compared to an inactive group.

Data obtained on blood group diet showed that low percent of student recommended to use this diet and they think it has little effect on weight reduction (Cusack *et al.*, 2013). Summarized that no evidence currently exists to validate the purported health benefits of blood type diets. To validate these claims, studies are required that compare the health outcomes between participants adhering to a particular blood type diet (experimental group) and participants continuing a standard diet (control group) within a particular blood type population.

The present data about detox water showed that 78.6 % of subjects heard about a detox drinks and 52.73 % of them reported that it has an effect on weight reduction. Subjects reported that internet and advertisement effect on using detox water. Subjects think that drinking much detox water have induced side effect. In agreement with these results Kathleen *et al.*, (2016) they reported that we've heard a great deal about detox diets in recent years. But it's all hype with no health benefits. There are many ways to get your body clean and healthy. This isn't one of them. Not only are detox diets not good for people with certain medical conditions, they could be harmful. There is no research showing they improve blood pressure or cholesterol or have a positive effect on the heart. For people with diabetes, they may be quite dangerous. Any diet that severely restricts what you eat could lead to dangerously low blood sugar if you take medicine for diabetes.

The obtained data showed that 29.09 % of subjects reported that lemon was common used in detox water. In agreement with this, result Kim *et al.*, (2015) they suppose that the lemon detox program reduces body fat and insulin resistance through caloric restriction and might have a potential beneficial effect on risk factors for cardiovascular disease.

Concerning CLA, (table 8) 50 students heard about CLA, 40% of them reported that the main reason for using CLA related to its benefits, subjects think that CLA has an effect on weight control. Subjects think that excessive intake of CLA has future disadvantages and they reported that CLA can't be used as an alternative to healthy diet and exercise. Subjects think that CLA speed fat burning and it make fill appetite. (Egras *et al.*, 2011), found that CLA reduce body fat mass in animals while results from human studies suggest that its effects are small and of questionable clinical relevance (Onakpoya *et al.*, 2012). One double-blind, placebo-controlled trial evaluated the effects of CLA supplementation in 180 overweight male and female volunteers (BMI 25–30) consuming an ad libitum diet (Gaulhier *et al.*, 2004). Participants received CLA as a free fatty acid (3.6 g CLA

isomers), CLA as a triacylglycerol (3.4 g CLA isomers), or placebo daily for 1 year. At the end of the study, body fat mass dropped by significant amounts with both forms of CLA compared with placebo; reductions, on average, were 6.9% with CLA as a free fatty acid and 8.7% with the triacylglycerol form. Supplementation with CLA as a free fatty acid (but not as a triacylglycerol) also increased lean body mass compared with placebo. CLA appears to be well tolerated. Most reported adverse effects are minor, consisting mainly of gastrointestinal disturbances, such as abdominal discomfort and pain, constipation, diarrhea, loose stools, nausea, vomiting, and dyspepsia (Gauillier *et al.*, 2004). Some research indicates that CLA has no major effect on lipid profiles, but other research shows that certain CLA isomers might decrease HDL cholesterol and increase lipoprotein (a) levels. The CLA isomer t10c12-CLA has also been reported to increase insulin resistance and glycaemia in obese men with metabolic syndrome (Lehnen *et al.*, 2015).

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Table (A): categories of BMI.

BMI	Classification
<18.5	Underweight
18.5 to 24.9	Desirable weight
25 to 29.9	Overweight
30 to 34.9	Class I obesity
35 to 39.9	Class II obesity
≥ 40	Class III obesity

Table (1): Mean ± SD of age, height, weight and BMI of present subjects.

	Age	Height	Weight	BMI
Mean	24.42 ± 7.99	155.70 ± 18.57	63.61 ± 18.72	25.063 ± 6.07
No	140	140	140	140

Table (2): Frequency distributions of subjects according to their BMI category.

Variable	Frequency	Percent	
BMI category	Underweight	26	18.6
	Desirable weight	42	30.0
	Overweight	32	22.9
	Class I obesity	32	22.9
	Class II obesity	8	5.7
	Total	140	100.0

Table (3): Frequency distributions of subjects according to their social status.

Variable	Frequency	Percent	
Social Status	Married	34	24.6
	Single	96	69.6
	Divorced	4	2.9
	Total	134	97.1
Missing System	6	2.9	
Total	140	100.0	

Table (4): Frequency distribution of subjects according to their knowledge of obesity.

Variables	Frequency	Percent	
Obesity is a disease?	Not agree	4	2.9
	Agree	136	97.1
Total	140	100.0	
Normal weight is important for health?	Not agree	2	1.4
	Agree	138	98.6
Total	140	100.0	
For overweight and obese patients even small weight loss can produce health benefits?	Not agree	6	4.3
	Agree	134	95.7
Total	140	100.0	
Most overweight patients should be treated for weight loss?	Not agree	14	10.0
	Agree	126	90.0
Total	140	100.0	
Obesity is not treated with diet and requires surgery such as stapling?	Not agree	94	67.1
	Agree	46	32.9
Total	140	100.0	
Gastric stapling helps to quickly get rid of excess weight?	Not agree	34	24.3
	Agree	106	75.7
Total	140	100.0	
Obesity management is necessary in the long term?	Not agree	20	14.3
	Agree	120	85.7
Total	140	100.0	
Only a small percentage of overweight and obese people can lose weight and maintain this loss?	Not agree	64	45.7
	Agree	76	54.3

Variables		Frequency	Percent
Total		140	100.0
Obese people are usually ashamed?	Not agree	44	31.4
	Agree	96	68.6
Total		140	100.0

Table (5): Frequency distributions of subjects according to regarding their weights, suitable methods for weight reduction and the role of social media and advertising for choosing methods for reducing weight.

Variable		Frequency	Percent
Do you monitor your weight?	Yes	98	70
	No	40	28.6
Total		140 (2 missing)	98.6
Your rating for your weight?	Ideal	20	14.3
	Underweight	24	17.1
	Normal	17	24.3
	Overweight	34	32.9
	Obesity	16	11.4
Total		140	100.0
Do you feel a desire to change weight?	Yes	106	75.7
	No	34	24.3
Total		140	100.0
Have you ever done a diet?	Yes	68	48.6
	No	72	51.4
Total		140	100
What is the best way to control or lose weight?	Sport	50	35.7
	Diet	88	62.9
Total		140 (2missing)	98.6
Do social media have a role in dieting?	Yes	60	88.24
	No	8	11.76
Total		68	100
Do advertising have any role in encouraging you to use dieting?	Yes	48	70.58
	No	20	29.42
Total		68	100

Table (6): Frequency distribution of subjects according to their awareness of blood group diet.

Variables		Frequency	Percent
Do you hear about blood group diet?	Yes	62	44.3
	No	78	55.7
Total		140	100.0
Do you advised to use it?	Yes	8	18.39
	No	54	87.01
Total		62	100
Do you think it's has an effect in losing weight?	Yes	18	29.03
	No	44	70.97
Total		62	100

Table (7): Frequency distribution of subjects according to their knowledge and beliefs of detox drinks.

Variables		Frequency	Percent
Have you ever heard about a detox drinks?	Yes	110	78.6
	No	30	21.4
Total		140	100.0
Why do you think some people use a slimming drink?	Less expensive and available	56	40.0
	More useful	26	18.6
	Has no side effects	16	11.4
	Described in health centers	12	8.6
Total		110	78.6
Do you think that a slimming drink (detox) has an effect on weight control?	Yes I think	52	37.1
	I don't think so	24	17.1
	I don't know	34	24.3
Total		110	78.6
How many times consumed per day?	Once	26	18.6
	Twice	44	31.4
	Three times	16	11.4
	More	24	17.1
Total		110	78.6
When does a slimming drink usually consumed?	Before meals	44	31.4
	During the sport	24	17.1
	Before sleeping	18	12.9
	After waking up	24	17.1
Total		110	78.6
Who do you think describes this drink?	Nutritionist	48	34.3
	Friends	8	5.7
	Internet advertising and	54	38.6
Total		110	78.6
Do you think drinking too much of detox water have side effects?	Yes	50	35.7
	No	28	20.0
	Don't know	32	22.9
Total		110	78.6
Do you think that quit drinking detox water is responsible for gaining the previous weight?	Yes	20	14.3
	No	58	41.4
	Sometimes	32	22.9
Total		110	78.6
What is the common type of herbs that's used in detox water?	Mint	14	10.0
	Lemon	32	22.9
	Ginger	26	18.6
	More than two choice	38	27.1
Total		62	44.3

Table (8): Frequency distribution of subjects according to their knowledge and beliefs of CLA.

Variables		Frequency	Percent
Have you heard about CLA?	Yes	50	35.7
	No	90	64.3
Total		140	100.0
What is the main reason for using CLA?	Cheap and available	18	36
	More beneficial	20	40
	Doesn't have side effects	12	24
Total		50	100
Do you think that CLA has an effect on weight control?	Yes	34	68
	No	16	32
Total		50	100
How many times are they consumed per day?	Once	24	48
	Twice	14	28
	Three times	12	24
Total		50	100
When is the CLA usually consumed?	Before the meals	26	52
	During exercise	12	24
	Before sleep	4	8
	After waking up	8	16
Total		50	100
Using the CLA from	The dietitian	26	52
	Advertisements and enter net	8	16
	Gem	16	32
Total		50	100
Do you think that excessive intake of dietary supplements has future disadvantages?	Yes	36	72
	No	4	8
	I do not know	10	20
Total		25	100
Did you know what the appropriate dose of CLA is?	Yes	4	16
	No	42	84
Total		50	100
Do you think the benefit of CLA is limited to fat loss only?	Yes	10	20
	No	40	80
Total		50	100
Have you ever experienced CLA or similar efficacy products?	Yes	2	8
	No	46	92
Total		50	100
Does the CLA have any other health benefits?	Yes	10	20
	No	4	8
	I do not know	36	72
Total		50	100
Can CLA be used as an alternative to healthy diet and exercise?	Yes	4	8
	No	32	64
	I do not know	14	28
Total		50	100
Have you used the CIA by prescription?	Yes	4	8
	No	46	92
Total		50	100
Do you follow the doctor's advice on CLA?	Yes	16	32
	No	34	68
Total		50	100
The CLA is based on fat burning through?	Speed up fat burning	24	48
	Fill appetite	16	32
	Other	10	20
Total		50	100