



The concepts of Saudi population about weight loss measures together with surgical intervention

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Article History

Received: 06 April 2020

Reviewed: 07/April/2020 to 17/May/2020

Accepted: 18 May 2020

E-publication: 25 May 2020

P-Publication: July - August 2020

Citation

Hussain Gadelkarim Ahmed, Abdullah Selmi Suliman Alfarsi, Raed Alasmar Bin Museibb Alenezi, Hani Abdulrhman Zabin Almutairi, Abdulaziz Fahhad Saleh alanazi, Ebtehaj Saud Almughais, Fatmah Fahad Alreshidi, Rasha Mohammed Alarfaj, Fawaz Saror Alrasheedi, Omar abdulrahman alzamil, Fayeze Saud Alreshidi. The concepts of Saudi population about weight loss measures together with surgical intervention. *Medical Science*, 2020, 24(104), 2037-2044

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General Note



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ABSTRACT

Background: Merging of multifarious factors related to obesity/overweight is deemed important to reduce the future burden of obesity-related comorbidities. Therefore, the present study aimed to assess the concepts of the Saudi population about weight loss measures including together with surgical intervention. **Methodology:** This study involved 317 Saudi participants living in the city of Hail, Northern Saudi Arabia. Data were collected during a cross-sectional survey conducted during the period from October 2019 to Feb 2020. **Results:** Out of the 317 participants, 31/317(9.8%) were obese and 44/317(14%) were overweight. On asking "Do you planning for weight reduction" 167/289(58%) answered "Yes". Out of the 167 respondents, 144/255(56.5%) were males and 33/34(97%) were females. On asking "Reduce weight by physical activities" 158/304(52%) answered "Yes". Out of the 158 respondents, 138/270(51%) were males and 20/34(59%) were females. **Conclusion:** The concept of the Saudi population is relatively poor towards means of weight loss, particularly bariatric surgeries. Women were more protuberant to incomes of weight loss than men. Still, there is a gab regarding an individual's body weight determinants, which requires to be addressed at a community level.

Keywords: Obesity, overweight, weight loss, BMI, bariatric surgery

1. INTRODUCTION

Obesity/overweight is alarmingly increasing in most parts of the world. More than two billion persons are obese/overweight and one third is regarded as obese. Obesity/overweight has been linked to several factors including physical, and psychological health disorders emerging it as a major health problem, which severely impairs the life quality and representing a major burden on health care system worldwide (Seidell et al., 2015; Hsueh et al., 2020). Obesity/overweight is more serious and challenging when weight is gained in early life. Dietary behaviors, and physical activity and other modifiable lifestyle behaviors are the most important determinants of childhood obesity (Lanigan, 2018). Early intervention of healthy dietary habits and physical activity choices represent the backbone for preventing childhood obesity (Brown et al., 2015).

Although many weight loss regimens are depending on diets and physical activity plans, limited data revealing its beneficial effect in maintaining long-term weight loss (Obert et al., 2017). Bariatric surgeries including gastric banding, gastric bypass, sleeve gastrectomy, and duodenal switch are widely used for treating obesity worldwide. The great majority of Bariatric surgeries are conducted employing minimally invasive laparoscopic procedures (Hanipah and Schauer, 2017). Recent studies from Saudi Arabia indicating high obesity/overweight prevalence rates (34.8%/35.1%) with predominantly higher among females (35.6%) compared to 30.1% among males (Al-Raddadi et al., 2019). Therefore, the present study aimed to assess the concepts of the Saudi population about weight loss measures including together with surgical intervention.

2. MATERIALS AND METHODS

This study involved 317 Saudi participants living in the city of Hail, Northern Saudi Arabia. Data were collected during a cross-sectional survey conducted during the period from October 2019 to Feb 2020. The study subjects were randomly selected regardless of age or sex.

A purposeful questionnaire was designed and filled during a personal interview. Besides demographical data the questionnaire included queries such, *Do you planning for weight reduction, Reduce weight by diet control, Reduce weight by reducing meals frequencies, Reduce weight by Surgery, Reduce weight by intra-gastric balloon, Reduce weight by liposuction, Reduce weight by Sleeve gastrectomy, How do you consider your weight, Are you satisfied with your current weights, Do you planning for weights loss*

Data analysis

Statistical analysis was performed using SPSS V22.0 SPSS. Frequencies and percentages and cross-tabulation of variables were obtained.

Ethical consent

Each participant has consented before the personal interview. The proposal of the study was approved by the Ethical Committee at the College of Medicine, University of Ha'il, Hail, Saudi Arabia. Ethical Approval Number: EC-00140/CM/UOH.01/19.

3. RESULTS

The present study investigated 317 Saudi volunteers, aged 17 to 56 years with a mean age of 21 years. Out of the 317 participants, 283/317(89.3%) were males and 34/317(10.7%) were females. The vast majority of the study subjects were aged 19-25 years, as indicated in Table1, Fig 1. Most of the participants were students 289/317(91.2%). Out of the 317 participants, 31/317(9.8%) were obese and 44/317(14%) were overweight, as indicated in Table 1, Fig 1.

Table 1 Distribution of participants by demographical characteristics

Variable	Males=283	Females=34	Total=317
Age			
≤18 years	49	9	58
19-20	165	12	177
21-25	50	7	57
26-35	9	4	13
≥36	10	2	12
Education			
Basic education	9	5	14
Higher education	274	29	303
Occupation			
Student	261	28	289
Employee	15	0	15
other	7	2	9
BMI			
<18	18	3	21
18-24	99	13	112
24-30	100	9	109
30-35	39	5	44
>35	27	4	31

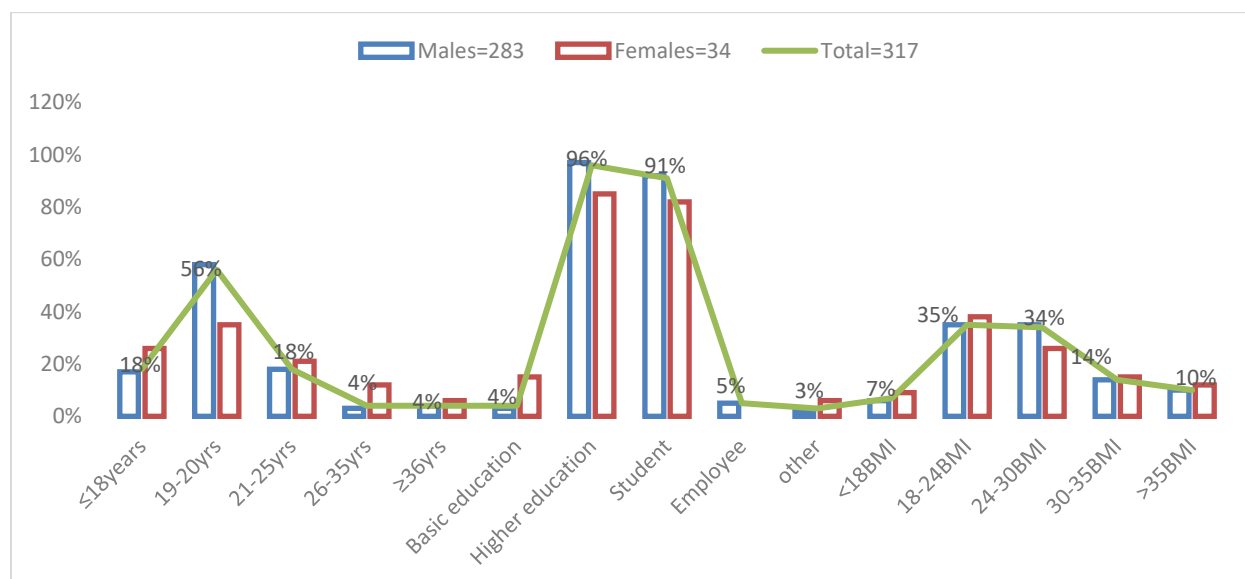


Figure 1 Description of participants by demographical characteristics

On asking "Do you planning for weight reduction" 167/289(58%) answered "Yes". Out of the 167 respondents, 144/255(56.5%) were males and 33/34(97%) were females. On asking "Reduce weight by physical activities" 158/304(52%) answered "Yes". Out of the 158 respondents, 138/270(51%) were males and 20/34(59%) were females. On asking "Reduce weight by diet control" 41/304(13.5%) answered "Yes". Out of the 41 respondents, 29/270(10.7%) were males and 12/34(35%) were females. On asking "Reduce weight by reducing meals frequencies" 44/304(14.5%) answered "Yes". Out of the 44 respondents, 38/270(14%) were males and 6/34(17.6%) were females, as indicated in Table 2, Fig 2.

Table 2 Distribution of participants by some concepts about weight loss

Category	Variable	Males=283	Females=34	Total=317
<i>Do you planning for weight reduction</i>				
	Yes	144	33	167
	No	111	1	122
	Response	255	34	289
<i>Reduce weight by physical activities</i>				
	Yes	138	20	158
	No	132	14	146
	Response	270	34	304
<i>Reduce weight by diet control</i>				
	Yes	29	12	41
	No	241	22	263
	Response	270	34	304
<i>Reduce weight by reducing meals frequencies</i>				
	Yes	38	6	44
	No	232	28	260
	Response	270	34	304

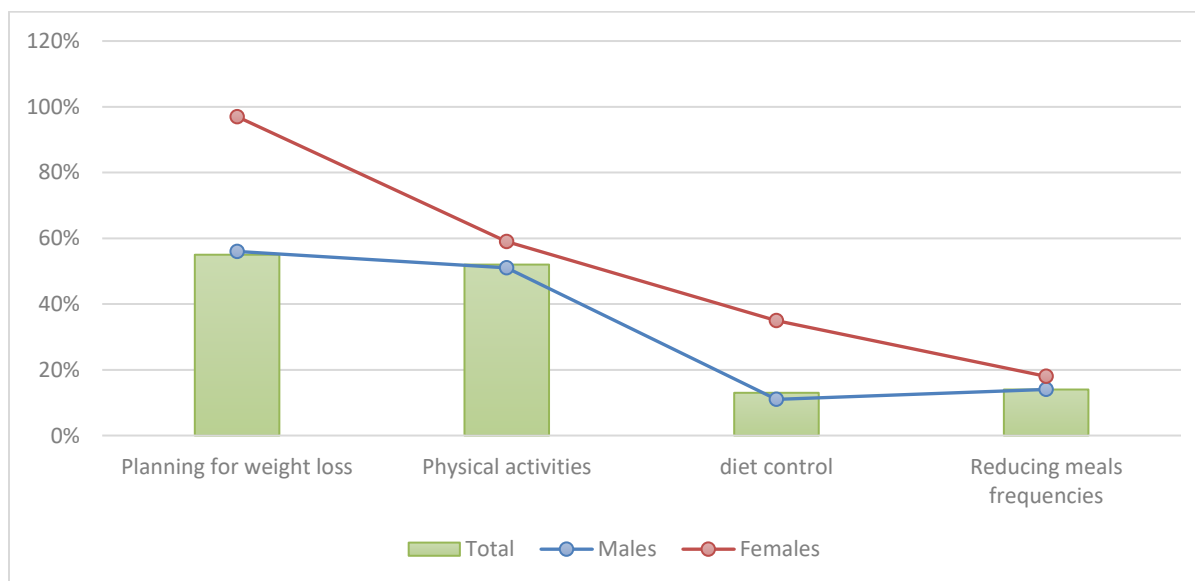


Figure 2 Some concepts about weight loss within the entire sex cluster

Table 3, Fig 3, summarized the Distribution of participants by medical treatment of obesity. Only 7/304(2%) support reducing weight by *surgery* (6/270(2%) were males and 1/34(3%) were females). About 20/304(7%) support reducing weight by *intra-gastric balloon* (19/280(7%) were males and 1/34(3%) were females). Furthermore, around 109/304(36%) may support reducing weight by *intra-gastric balloon* (97/280(35%) were males and 12/34(35%) were females). Approximately, 65/304(21%) support reducing weight by *liposuction* (60/281(21%) were males and 5/34(15%) were females). Around 109/304(36%) may support reducing weight by *intra-gastric balloon* (95/281(33%) were males and 14/34(41%) were females). Approximately, 27/304(9%) support reducing weight by

liposuction (24/282(8%) were males and 3/34(9%) were females). Around 92/304(30%) may support reducing weight by *intra-gastric balloon* (85/282(30%) were males and 7/34(21%) were females).

Table 3 Distribution of participants by medical treatment of obesity

Category	Variable	Males=283	Females=34	Total=317
Reduce weight by Surgery	Yes	6	1	7
	No	264	33	297
	Response	270	34	304
Reduce weight by intra-gastric balloon	Yes	19	1	20
	Maybe	97	12	109
	No	164	21	185
	Response	280	34	314
Reduce weight by liposuction	Yes	60	5	65
	Maybe	95	14	109
	No	126	15	141
	Response	281	34	315
Reduce weight by Sleeve gastrectomy	Yes	24	3	27
	Maybe	85	7	92
	No	173	24	197
	Response	282	34	316

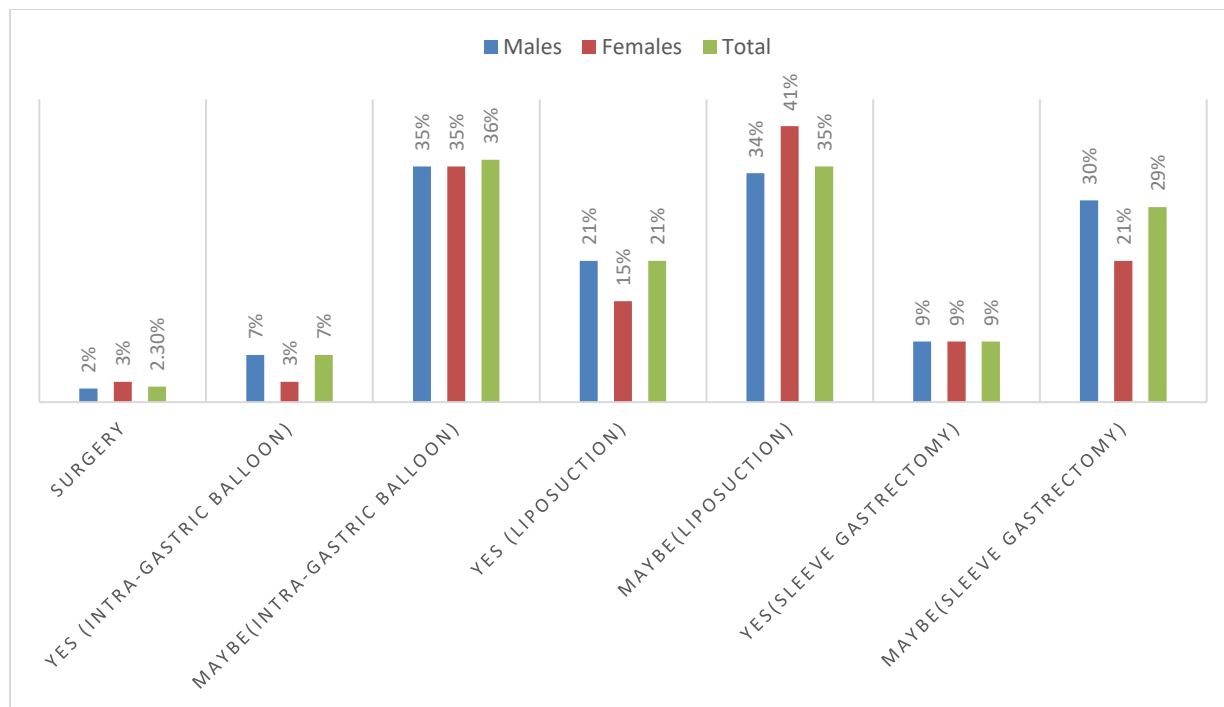


Figure 3 Description of participants by gender and within entire supportive medical treatment

Table 4 and Fig 4, showing the distribution of participants by BMI and concepts towards the individual's body weight. Out of the 317 participants, only 112/317(35%) were found with normal body weights (BMI = 18-24). About 75/317(24%) participants were found with obesity or overweight. On asking the participants "*How do you consider your weight*", about 5/42(12%) and 55/144(38.2%) of obese/overweight persons claimed that they were under normal weight, and normal weights, respectively. About

7/103(6.8%) of those with underweight/normal weight, thought that they were overweight. On asking the participants "Are you satisfied with your current weights", about 52/141(37%) of obese/overweight individuals appealed that they were satisfied with their current body weight. On asking the participants "Do you planning for weight loss", about 138/167(82.6%) of obese/overweight individuals appealed that they were *planning for weight loss*.

Table 4 Distribution of participants by BMI and concepts toward body weight

Category	Variable	>18	18-24	24-30	30-35	>35	Total
<i>How do you consider your weight</i>	Under normal weights	14	23	2	3	0	42
	Normal weights	6	83	46	7	2	144
	Overweight	1	6	59	27	10	103
	Obese	0	0	2	7	19	28
	Response	21	112	109	44	31	317
<i>Are you satisfied with your current weights</i>	Yes	6	83	43	7	2	141
	No	14	29	65	37	29	174
	Response	12	112	108	44	31	315
<i>Do you planning for weights loss</i>	Yes	4	25	76	33	29	167
	No	15	68	27	10	2	122
	Response	19	93	103	43	31	289

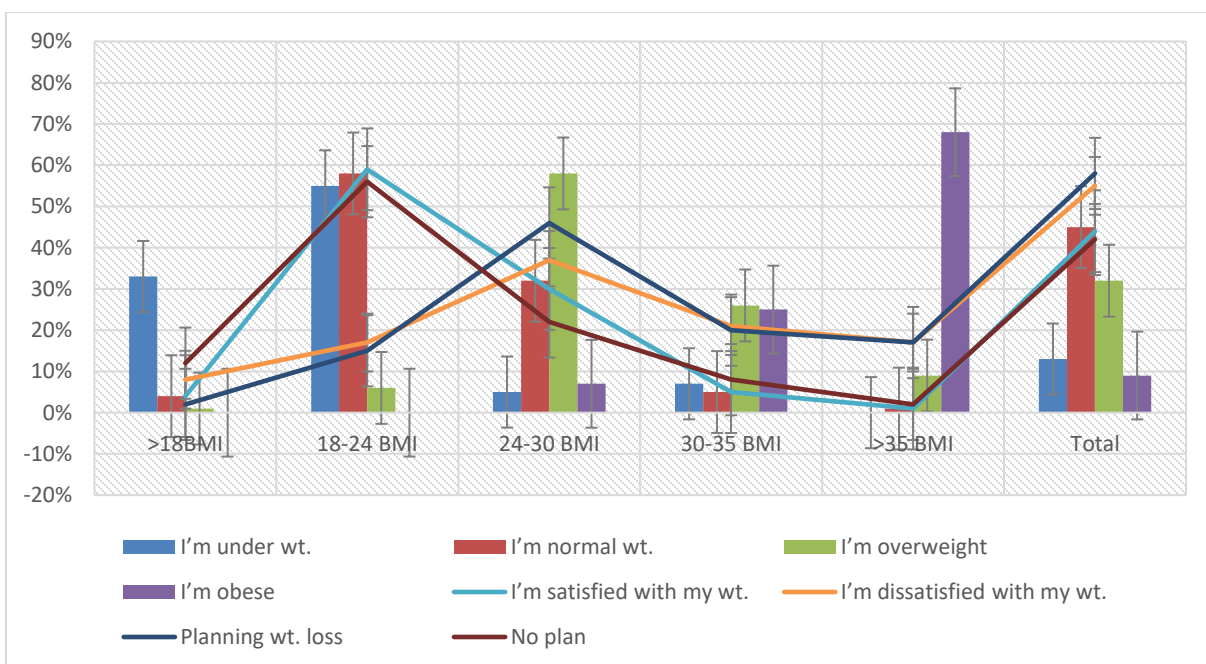


Figure 4 BMI by concepts toward body weight

4. DISCUSSION

In recent years Saudi Arabia witnessed increased prevalence rates of obesity/overweight related comorbidities (Ramadhan et al., 2019). Merging of multifarious factors related to obesity/overweight is deemed important in this time to reduce the future burden of obesity-related comorbidities both at the public level and health care system.

In the present study randomized study, the prevalence of obesity/overweight was found greater than 21%, which was much less than the reported rates (Alnasser et al., 2019), which might be attributed to the younger and predominantly males in the present study. Nevertheless, about 18.3% of the study subjects were found with underweight (BMI<18), which might be attributed to the weight loss over response for some individuals.

In the present study, approximately 58% were planning for weight loss with predominantly women (97%) compared to men (56.5%). Though, some reports have shown that women are more responsive to weight loss demands (Garber et al., 2019), there limited literature from Saudi Arabia in this regard. About 52% (51% were males and 59% were females) of the participants in this study were believing that weight loss can be achieved by practicing physical activities. A recent study from Saudi Arabia has reported 38.4% (40% for males and 37.4%) prevalence rate of physical activity (Alzahrani et al., 2019). Only 13.5% and 14% of the study subjects in this study believe that losing weight can be achieved by dietary control and reducing the frequencies of meals. Vegan diet and low-carbohydrate diet were found to improve glycemic control and weight loss particularly in long-term adherence (Chester et al., 2019).

As indicated in the results of the current study, participants have very declining concepts towards all surgical means of weight loss. Although bariatric surgery is a must in some cases with comorbidities (Alkharaiji, et al., 2020), response to this type of treatment and mean of achieving desired body weight is still weak in Saudi Arabia (Alqahtani et al., 2019). About 12% and 38.2% of obese/overweight of the participants in the present study believing that they were under normal weight, and normal weights, respectively, which indicates low levels of awareness in this context. This in addition to about 37% obese/overweight individuals appealed that they were satisfied with their current body weight. However, about 82.6% of obese/overweight individuals were interested in and planning for weight loss. Such findings were previously reported from Saudi Arabia (Alqahtani et al., 2019).

The present study provided essential keys for future planning in this regard, though it has some limitations including its cross-sectional survey, younger study population, and uneven sex.

5. CONCLUSION

The concept of the Saudi population is relatively poor towards means of weight loss, particularly bariatric surgeries. Women were more protuberant to incomes of weight loss than men. Still, there is a gap regarding an individual's body weight determinants, which requires to be addressed at a community level.

Acknowledgment

The authors would like to thank the participants for their time and assistant in obtaining the data for this study.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

Ethical Approval number

EC-00140/CM/UOH.01/19

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