



Psychological Benefits Of Reducing Obesity Through Behavioral And Dietary Interventions - A Case Study

Mrs.JAYA.C.C,MSc(N),Ph.D RESEARCH SCHOLAR IN WOMEN'S STUDIES, MOTHER TERESA WOMEN'S UNIVERSITY,KODAIKANAL

Introduction

The global epidemic of obesity continues to escalate.. According to the statement of the World Health Organization (2017) the prevalence of obesity has nearly tripled since 1975. More than 1.9 billion adults suffer from being overweight, and of these, over 650 million are obese.. Obesity accounts for an increasing proportion of the international socioeconomic burden of noncommunicable disease. Decades of caloric overconsumption combined with reduced energy expenditure has produced an obesogenic environment, which has caused the global prevalence of obesity to double since 1980.It is well documented that weight loss in overweight or obese individuals has significant physiological benefits, eg: reduced risk of diabetes, lowered blood pressure. However, behavioral and dietary interventions have investigated psychological benefit as the primary outcome. Addressing the global obesity crisis requires a whole-population approach to achieve the World Health Assembly goal of zero global growth in obesity by 2025.

WHO (2016) estimates facts about overweight and obesity globally , that is there are more than 1.9 billion adults aged 18 years and older were overweight. Of these over 650 million adults were obese .In 2016, 39% of adults aged 18 years and over (39% of men and 40% of women) were overweight. Overall, about 13% of the world's adult population (11% of men and 15% of women) were obese in 2016. The worldwide prevalence of obesity nearly tripled between 1975 and 2016. India's women are more likely to be obese than their male counterparts, new research shows.There were 20 million obese women in India in 2014 compared with 9.8 million obese men and obesity was observed in an additional 4 million Indian women(Suryatapa Bhattacharya 2014).

Obesity is commonly associated with a negative stigma and obese individuals can often be subjected to negative stereotyping. That is, obese individuals are often viewed as lazy, greedy and weak willed (Puhl & Brownell, 2001). The overt stigma of obesity, has been associated with low self and Body esteem, depressive symptoms and poor quality of life .(Friedman et al., 2005) Weight loss may therefore serve to improve these psychological outcomes and, in turn, these improvements may increase the chances of maintaining successful weight loss (Teixeira et al., 2004). Knowledge of the psychological correlates of obesity is, therefore, important when trying to understand how people may become obese, lose weight and maintain weight loss. In women, obesity is a risk factor for cancers and it also increases the risk of depression, partly as a result of poor body image. Weight gain is a major health concern for all adults because most will gradually increase weight at a rate of about 0.5 kg/year. However, it is a particular concern for women in midlife. The deleterious effects of obesity are diverse and include increased risk of premature death, decreased quality of life as well as chronic diseases(Visscher TL, and Seidell JC 2001).

The prevalence of raised body mass index increases with income level of countries up to upper middle income levels. The prevalence of overweight in high income and upper middle income countries was more than double that of low and lower middle income countries. For obesity, the difference more than triples from 7% obesity in both sexes in lower middle income countries to 24% in upper middle income countries. Women's obesity was significantly higher than men's, with the exception of high income countries where it was similar. In low and lower middle income countries, obesity among women was approximately double that among men.(GHO 2018). Obesity is a condition where a person has accumulated so much body fat that it might have a negative effect on their health. People can become obese for many different reasons. some of the reasons are: 1) Consuming too many calories, 2) Leading a sedentary lifestyle, 3) Not sleeping enough, 4) Endocrine disruptors, such as some foods that interfere with lipid metabolism and 5) Medications that make patients put on weight.

Physical inactivity and sedentary behaviour are closely related to obesity. Physical inactivity refers to low levels or the absence of physical activity. It represents the lower end of the activity spectrum. Sedentary behaviour includes a number of occupations that have in common too little energy expenditure. Watching television or videos that is, time spent in front of a screen or, more generally, time spent sitting daily is a commonly used indicator of sedentary behaviour.. Thus, sedentary behaviour does not represent the opposite of physical activity, but corresponds to a complementary dimension of behaviour. The distinction between physical activity and sedentary behavior has implications for both assessing and preventing obesity and related diseases (WHO 2003)

In recent years, new statistical approaches have sought to define the overall nutritional features of the diet. Some dietary patterns can be linked to weight change; those characterized by food high in fat or sugar and relatively low in fiber have been associated with greater weight gain. Dietary patterns characterized by fast food are linked to an increased risk of obesity. A few prospective studies have shown a consistent association between fast-food habits and increases in body weight (Pereira MA et al 2005).

Breakfast consumption has psychological and nutritional benefits thought to be due to physiological mechanisms and expectations about health. In a recent study of adult women (those with ideal weight or overweight), those who regularly consumed a cereal breakfast felt more satisfied about their body and weight than those who consumed a muffin breakfast, despite the fact that these breakfast options were matched in calories. Women felt fuller, less hungry, more relaxed and happier and they believe that they are eating a low calorie food and since a cereal breakfast was rated lower in calories, it produced more positive psychological reactions. Lattimore P et al (2010).

Obesity is also frequently accompanied by depression and the two can trigger and influence each other. Although women are slightly more at risk for having an unhealthy BMI than men, they are much more vulnerable to the obesity-depression cycle. In one study, obesity in women was associated with a 37 percent increase in major depression. There is also a strong relationship between women with a high BMI and more frequent thoughts of suicide. Depression can both cause and result from stress, which, in turn, may cause you to change your eating and activity habits. Binge eating, a behavior associated with both obesity and other conditions such as anorexia nervosa, is also a symptom of depression. A study of obese people with binge eating problems found that 51 percent also had a history of major depression. Additional research shows that obese women with binge-eating disorder who experienced teasing about their appearance later developed body dissatisfaction and depression (Sara Weiss).

The Health and Retirement Study and the Health ABC study; neither of which found that weight loss was associated with improved mood, and which found some evidence that it was associated with increased depressive symptoms. Population studies have also demonstrated longitudinal associations between depressive symptoms and weight loss (Forman-Hoffman et al 2007).

Behavioural interventions are a common approach to weight loss and the interventions are : (i) an attempt to understand and control eating behaviour (for example, emotional triggers of eating), (ii) attitudes to eating, (iii) good nutrition, (iv) seeking and utilizing social support and (v) exercise. These programs can also include dietary advice (with caloric restriction), exercise program and lifestyle advice. Some behavioural interventions focus on the cognitive elements of eating behaviour and explore dysfunctional thoughts about weight or body shape. Participation in behavioural and dietary weight loss interventions (with or without

exercise) has the potential to reduce weight and concurrently improve psychological outcomes (Brownell & Kramer, 1989).

Table 1. Guideline for management of obesity(NICE 2014)

. Waist circumference (women), low risk <80 cm, high 80–88 cm, very high >88 cm.				
BMI Classification	Waist circumference			Comorbidities present
	Low	High	Very High	
Overweight	1	2	2	3
Obesity 1	2	2	2	3
Obesity II	3	3	3	4
Obesity III	4	4	4	4

1 General advice on healthy weight and lifestyle
 2 Diet and physical activity
 3 Diet and physical activity; consider drugs
 4 Diet and physical activity; consider drugs; consider surgery

Behavioral and Dietary interventions include:

Maintain a diary on Self-monitoring on type of activity, Stress management, Social support
 Daily dietary pattern, slow eating, meal replacement by solid/liquid diet
 Physical exercise and increasing physical activity walking 30-45 minutes 6days /week

Identifying and understanding the psychological changes that co-occur with weight loss may contribute to a greater understanding of how weight loss may be promoted and, more importantly, maintained. Therefore, the aim of the present review was to provide a systematic review and quality assessment of studies that employed a behavioural and/or dietary weight loss intervention (with or without exercise) and assessed the psychological consequences of weight loss in a sample obese individuals.

Epidemiology

Obesity has been recognized as a growing epidemic and has serious implications on health. Obesity can also be measured by determining the waist to hip ratio or fat thickness, Obesity can be measured as a function of an individual's weight and height – kg/m^2 .(GHO).

Table 2. BMI classification[WHO]

Category BMI BMI: body mass index (kg/m2)	
Underweight	<18.5
Normal	18.5–24.9
Overweight	25.0–29.9
Obese Class 1 (moderately obese)	30.0–34.9
Obese Class 2 (severely obese)	35.0–39.9
Obese Class 3 (very severely obese)	>40.0

Obesity Rates by Country (2017) reported that New research suggests there are about 775 million obese people in the World including adult, children, and adolescents. Our research suggests there are nearly 650 million obese adults on the planet, as defined as a body mass index (BMI) over 30. There are also about 125 million obese children and adolescents in the entire world according to a BMI over 30. Study Facts: World Population: 7,505,257,673 and World Obesity Population : 774,000,000 The majority of the obesity on the planet resides in a few countries, in fact, the top 10 countries contribute half the entire world's obesity.

Objectives

- To assess the BMI among obese women
- To determine the effectiveness of behavioral and dietary interventions among obese women
- To compare the Pre- to Post- interventions/.psychological benefits among obese women
- To find out association between the post test body weight with their demographic variables (such as age, sex, education status ,occupation, income, , dietary pattern, life style) among obese women..

Hypotheses

H1 - There will be the significant difference between pretest weight and post test weight among obese women.

H2-There will be a significant association between the post test weight with their selected demographic variables

Assumptions

- Behavioral and dietary interventions will reduce obesity
- There will be a significant improvement in the post intervention score.
- Due to irregular dietary and behavioral pattern weight will be increased in women.

Research Methodology

Research Design

A case study approach used for the study

Setting of the studyThe study was conducted in urban area in Ottapalam,Palghat dist. These area were selected because of easy access to the population under study and availability of obese women's around the area.

Population

In the present study, the population consist of obese women who are the permanent residence of Palappuram , a selected urban area of Ottapalam

Sample and Sample size

In this study the sample comprised of 15 obese women between the ages 30 to 60 residing in the Palappuram area of Ottapalam and the sample size consist of 15 obese

Sampling technique

A Non –Probability convenient sampling technique was used to select 15 obese women as the subjects of the study

Inclusion criteria

The target sample included overweight and obese females who were otherwise healthy with no concurrent disease or clinical psychopathology (for example cardiovascular disease)

Data collection Instrument

A semi structured questionnaire consist of 2 sections

Section A: Demographic variables. Section B: Standardized tool.

Data collection Procedure

The data was collected by interview method. Behavioral and dietary pattern were assessed by questionnaire and obesity and its psychological impacts were assessed by using standardized tool.

Data analysis and interpretation

Pre- to Post- interventions were calculated by using descriptive and inferential statistics to indicate the magnitude of change ..Table 1: FREQUENCY AND PERCENTAGE DISTRIBUTION OF DEMOGRAPHIC VARIABLES.

N=15

S.NO	DEMOGRAPHIC	FREQUENCY	PERCENTAGE (%)
1.	Age		
	a) 30-35	1	6.66%
	b) 36-40	10	66.66%
	c) 41-45	2	13.33%
2.	Educational status		
	a) Illiterate	2	13.33%
	b) School education	3	20 %
	c) Higher Secondary education	6	40 %
3.	Occupational status		
	a) House wife	8	53.33%
	b) Self employee	3	20%
	c) Government employee	2	13.33%
4.	Monthly income of family		
	a) Less than 5,000/	6	40%
	b) Rs. 5,001/to Rs.10,000/-	6	40%
	c) Rs.10,001/-Rs.15,000/	2	13.33%
5.	Type of family		
	a) Joint	4	26.66%
	b) Nuclear	8	53.33%
	c) Extended	0	-
6.	Dietary pattern		
	a) vegetarian	4	26.66%

	b) non-vegetarian	3	20%
	c) mixed	8	53.33%
7.	BMI status		
	a)Over weight	1	6.66%%
	b)Obesity class I	2	13.33%
	c))Obesity class II	10	66.66%
	d))Obesity Class III	2	13.33%
8.	The reason for weight gain		
	a) by hereditary	2	13.33%
	b) due to any illness/surgery	1	6.66%
	c) lack of physical activity	9	60 %
	d)dietary pattern	3	20%

Table I shows that most of the women in the age group of 36-40 (66.6%) and majority women are house wife 8 (53%), Mostly women had nuclear family 53% and the reason for weight gain shows the highest percentage of lack of physical activity 60%. Highest percentage of women(53%) had mixed dietary pattern. During pre test overall percentage of obese women, majority of the women (66.6%) were in the category of obese class II.

Fig (1) the effectiveness of behavior and dietary interventions by comparing Frequency and Percentage distribution of BMI among obese women.

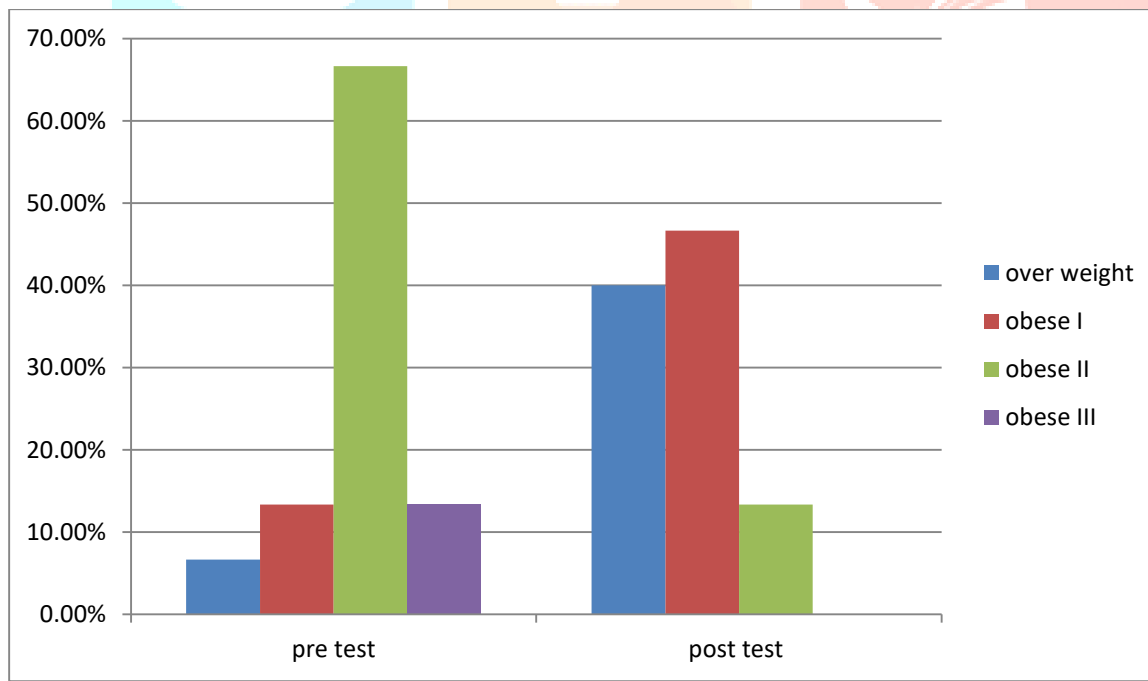


Fig (1) depicts the majority of the subjects 66.6% had obesity (class II) and 13.3% had Obesity III and 6% of them had over weight in the pre test. After giving the intervention (behavior and dietary) 40% of subjects had overweight and 46.6% had obesity class I and remaining 13.3% of subjects had obesity class II and no subjects in the category of obese class III in the post test.

Fig (2) distribution of pre test Psychological benefits through behavior and dietary interventions among obese women

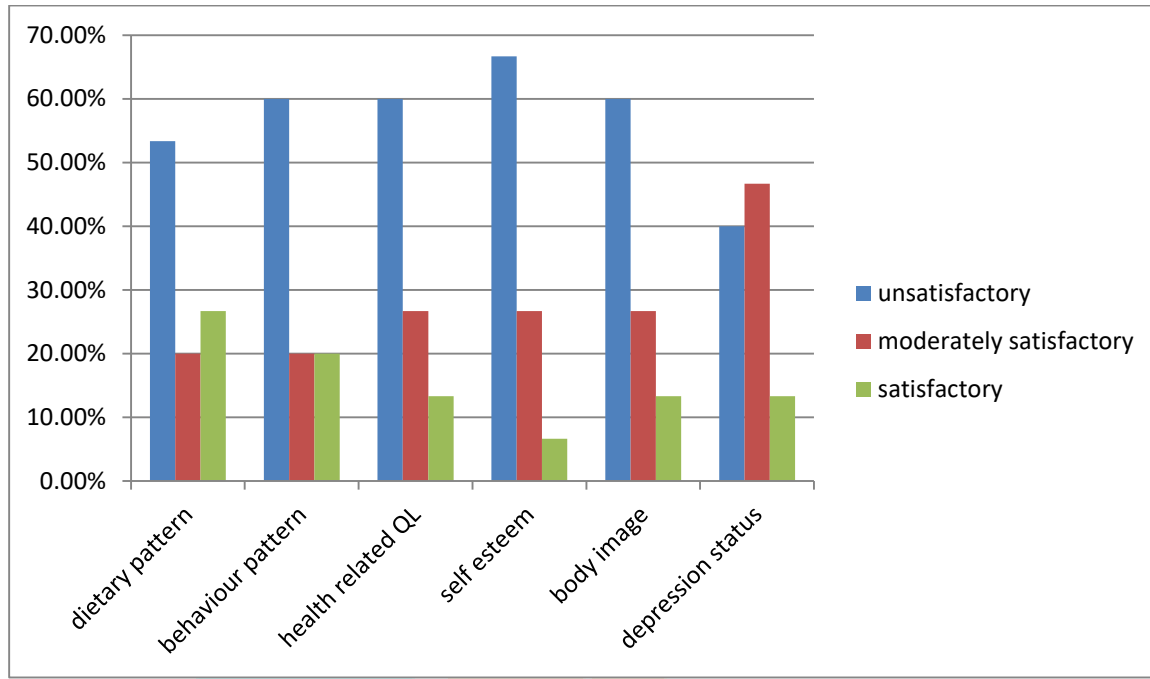


Fig (3) distribution of

post test Psychological benefits through behavior and dietary interventions among obese women

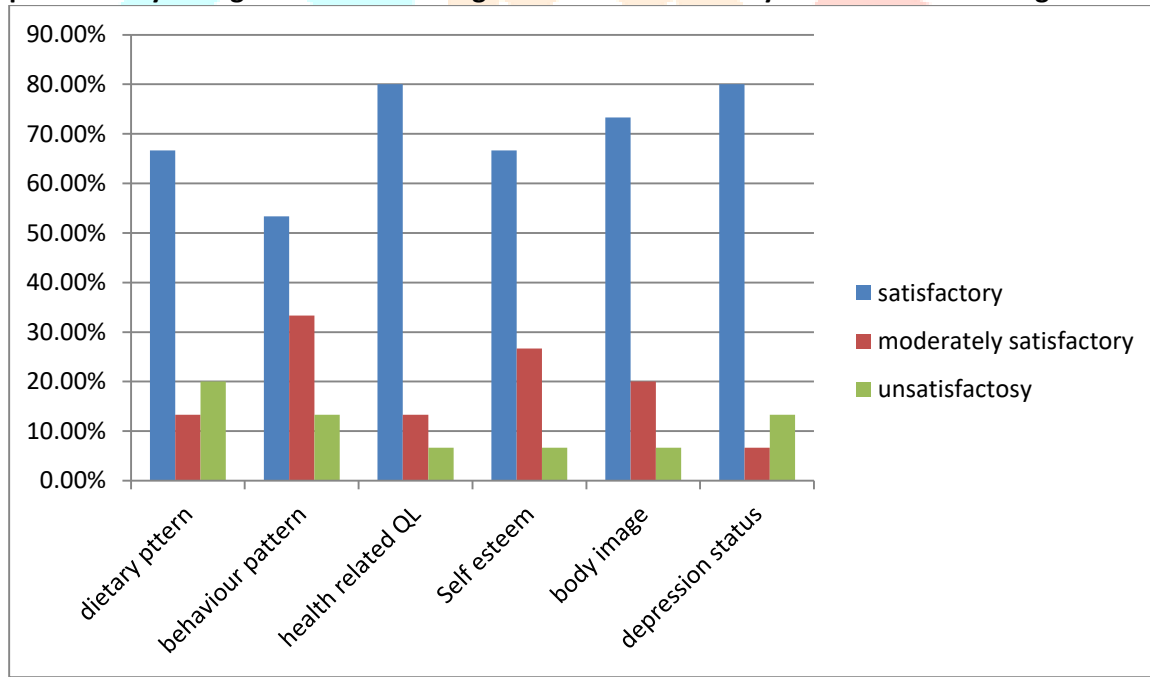


Figure (2) and (3) reveals significant changes in psychological benefits among obese women by comparing pre and post test behavioral and dietary intervention. The quality of life(80%),self esteem (66%),body image(73%) ,depression status (80%)shows satisfactory level in post test . Dietary pattern (66) and behavioural pattern (53) also improved by following proper interventions.

Results

Changes in self-esteem, depressive symptoms, body image and health related quality of life were evaluated and discussed.: The results also showed that consistent improvements in psychological outcomes concurrent with and sometimes without weight loss. Improvements in body image and health related quality of life were closely related to changes in weight. Although the quality of the studies reviewed was generally acceptable, and the content, duration of intervention and measures used to assess psychological outcomes varied considerably

Recommendations

On the basis of present study, the following recommendations are formed for future study:

- A study can be conducted to find out the effectiveness of behavior and dietary interventions on reducing weight among urban and rural can be compared.
- A comparative study can be carried out to identify the psychological benefits of interventions on reducing weight among obese women having control group and experimental group
- A future study can be conducted in rural setting on large scale.
- Effectiveness of behavior and dietary interventions and its psychological benefits among obese women and men can be compared .

Conclusion

The data suggests that most of the people find behavior and dietary interventions beneficial for their health and are aware of its uses and its psychological benefits .The study demonstrated consistent significant improvements in psychological outcomes following participation in a behavioural and/or dietary weight loss intervention both with and without exercise .Specifically, improvements in self-esteem, depressive symptoms, body image and health-related quality of life were observed. Obesity is undoubtedly a major healthcare challenge, with its associated comorbidities and impact on female reproductive health. As the old adage goes, 'prevention is better than cure' so we should continue to promote a healthy lifestyle and aim to prevent the increase in the prevalence of obesity

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