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ROLE OF CLINICAL PHARMACIST IN EDUCATING OBESE AND OVER WEIGHT PATIENTS FOR BETTER HEALTH RELATED OUTCOMES

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ABSTRACT

Obesity is a chronic disease in which there is excessive fat accumulation that presents a risk to public health. Health care interventions can increase awareness about obesity and its complications and it is of great concern to motivate them to change their lifestyle in order to avoid health issues. The aim of this study was to carry out educational intervention for the obese and overweight patients to improve disease outcomes. A prospective hospital based interventional study was carried out for a period of 6 months at St. Philomena's hospital in Bangalore. Patients visiting medicine department with a body mass index (BMI) ≥ 25 kg/m^2, patients with known eating disorders and those referred to the young adult section of the obesity clinic were included in the study. A questionnaire was prepared and was introduced to the study subjects after validation. Patient information leaflets (PIL) were given to the patients to educate them about the obesity. Scores were recorded pre and post counseling to analyze for the effectiveness of counseling. A total number of 95 obese patients were enrolled in the study who belonged to young adults and adult's age group. Majority of patients were in age between 46-50 years. Male proportions were more than females and most of the subjects were overweight. The difference between post and pre counseling score in questions concerning their lifestyle, which includes trying out strategies to lose weight, the habit of eating fruits, performing exercises and their knowledge and effort to prevent obesity in their families were found to be statistically significant. Counseling provided with the aid of patient information leaflet was beneficial in a significant change in habits and behavior of obese subjects.

KEYWORD: ***Obesity, body mass index, pharmacist, education, counseling***

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INTRODUCTION

Obesity or overweight is defined as excessive or abnormal fat accumulation in the body which has become a major health problem in public and its prevalence is increasing worldwide day by day[1]. According to the WHO overweight and obesity clinical guidelines, overweight is defined as a BMI of 25 to 29.9 kg/m^2 and obesity as BMI of ≥30kg/m^2. As per WHO estimation in 2016, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 650 million were obese.[2] Obesity and overweight are the fifth causing factors causing death in the world. It is well known that obesity is related to reduced quality of life, increase in a risk of chronic disease like coronary heart disease, stroke, type 2 diabetes and also specific types of cancer.[3-4] The prevalence of obesity is highly dependent on factors like age, sex and ethnicity. India is a developing country and its population comprises of two different extremes of under nutrition status due to poverty and obesity due to urban and sedentary life style. In India, more than 135 million individuals were affected by obesity. Unfortunately, there are limited studies and information about obesity related complications in adult overweight and obese population.[5-7] So health care interventions to increase awareness about obesity and its consequent complications and to motivate them to change their lifestyle in order to reduce weight is of major concern in the overweight and obese population.

METHODOLOGY

A6 months prospective, hospital based interventional study was carried out at St. Philomena's hospital in Bangalore. Ethical clearance (with reference number of Al-Am/2017/142) was obtained from human ethical committee. Informed consent form was obtained from identified patients before enrolling them in the study. All patients visiting medicine department with a body mass index (BMI) ≥ 25 kg/m^2, patients with known eating disorders and those referred to the young adult section of the obesity clinic were included in the study. Pregnant and lactating females, patients with a BMI of less than 25kg/m^2 and subjects who did not consent to participate in the study were excluded from the study. A questionnaire was prepared using various resources which consist of a set of 10 printed questions relating to obesity and lifestyle. Validation of the questionnaire was done on a small group of patients and the same was introduced to the study subjects after the completion of validation. Counseling was done to educate the patients about obesity and its related complications. Patient information leaflets (PIL) were given to the patients to educate them about the obesity, risk factors of obesity, complications and its related health outcomes and prevention of them. PIL was validated using a small group of patients during the study. Scores were recorded pre and post counseling to analyze the effectiveness of counseling. The main aim of the preparation of PIL was to provide information in the simplest way using pictograms to the patients who were overweight/ obese.

STATISTICAL ANALYSIS

Data was entered into Microsoft Excel (Windows 7; Version 2007) and analyses were done using the Statistical Package for Social Sciences (SPSS) for Windows software (version 22.0; SPSS Inc, Chicago. Associations between Variables were analyzed using chi-square test of independence. Level of significance was set at 0.05.

RESULT

A total number of 95 patients were assessed for obesity in young adults and adults from both outpatients as well as inpatients between December 2017 and May 2018. The detailed demographic characteristics of subjects are depicted in Table 1.

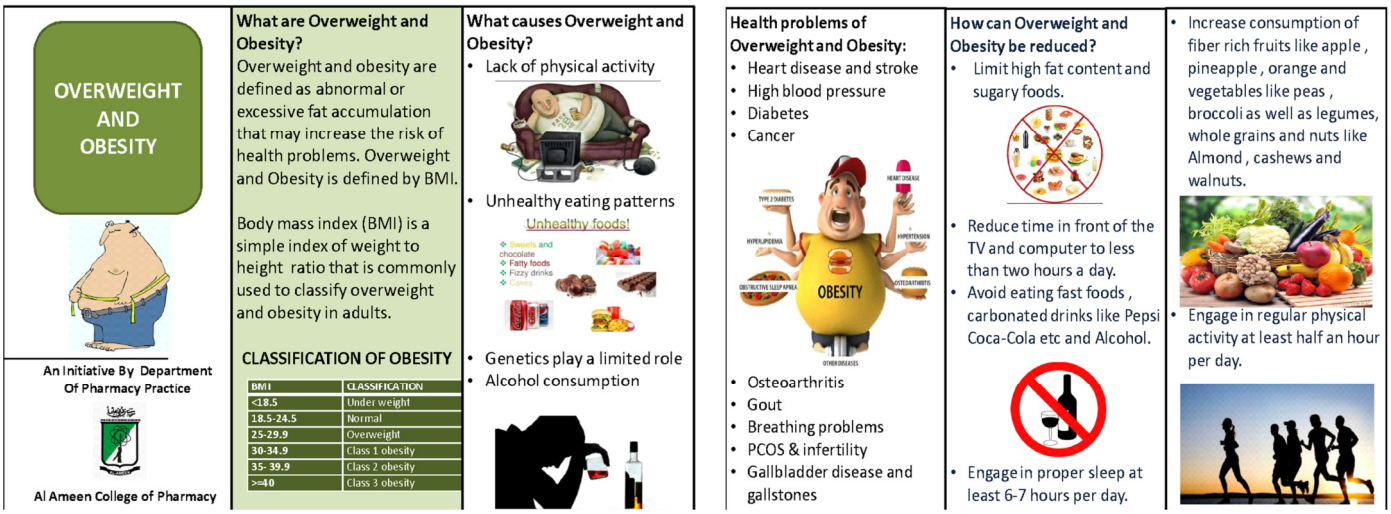
Table 1
Demographic characteristics of study subjects

Characteristics	Frequency	
Gender	**(n)**	**(%)**
Female	43	45.3
Male	52	54.7
Age (years)	**(n)**	**(%)**
16-20	1	1.05

21-25	8	8.4
26-30	9	9.5
31-35	14	14.7
36-40	23	24.2
41-45	16	16.8
46-50	24	26.3
BMI (kg/m^2)	**(n)**	**(%)**
Overweight (25-29.9)	60	63.1
Class I obese (30-34.9)	20	20.8
Class II obese (35-39.9)	6	6.25
Class III obese (≥40)	9	9.4

N=95

Table No.2 shows the results of pre and post counseling scores. We could find a higher score in post counseling survey than pre counseling survey in first 4 questions about their lifestyle including trying out strategies to lose weight, the habit of eating fruits, performing exercises and their knowledge and effort to prevent obesity in their families. The difference between post and pre counseling score in all the above mentioned questions were found to be statistically significant. Counseling was done by distributing leaflets among study subjects and giving them awareness about different aspects of overweight and obesity, its consequences and lifestyle tips to control and manage obesity. The leaflet is presented in Figure1.



a) **b)**

Figure 1
Patient information leaflet[8-17]

Table 2
Pre and post counseling scores

Questionnaire	Pre counseling score	Post counseling score	P value
1. Have you tried any strategies to lose weight? No (0) Yes (1)	31	52	0.002 Significant
2. How often do you eat fruits? Less (0) More (1)	25	47	0.001 Significant
3. Do you perform Exercise? No (0) Yes (1)	21	47	<0.001 Significant
4. Do you know how to prevent cases of obesity	22	48	<0.001

in your children/family/yourself? No (0) Yes (1)			Significant
5. Do you know the long term effects of eating unhealthily? No (0) Yes (1)	43	53	0.146 Not significant
6. Do you wish to be healthier than you are now? No (0) Yes (1)	61	56	0.455 Not significant
7. Are you currently doing anything to improve your health or lose weight? No (0) Yes (1)	61	56	0.455 Not significant
8. About how much time do you spend watching TV/ or sit in Computer in day? >2 Hours (1) 1-2 Hours (0)	36	41	0.460 Not significant
9. How often do you eat fast food (e.g.? pizza, McDonald, subway, etc)? More (0) Less (1)	52	51	0.884 Not significant
10. Do you consider yourself as? Normal (0) Overweight/Obesity (1)	34	23	0.081 Not significant

P<0.05 (significant),n=95

DISCUSSION

Educational intervention in the form of counseling was carried out for obese patients in the present study. As it is shown in table No.1, male preponderance (54.7%) was observed over females (45.3%) which was consistent with the study of Ali H. Mokdad et al.[5] The average age range was found to be 38.7 ± 8.5 (SD) years. Most of the study subjects (24, 26.3%) were in the age range of 46-50 years and only one subject (1.05%) was in the age range of 16-20 years. It was similar to the study of J Vioque et al where the highest number of patients was found to be in the age range of 50-64 years.[18] The results of the present study showed that BMI of 25-29.9 (kg/m^2) (overweight) was most commonly observed among study subjects (60, 63.1%). The average BMI range was found to be 30.3 ± 5.7 (SD). It was consistent with another study carried out in the USA in which most of the study subjects were overweight and mean BMI was reported as 28.12 (kg/m^2).[19] In the present study, out of 95 patients only 64 patients were completely followed up for counseling after 3 months of study. The remaining patients were not willing to respond. Among 64 patients who tried any strategy to lose weight, pre counselling score was 31whereas post-counselling score was 52. This was found to be statistically significant (p=0.002). Similarly, improvement in habit of taking fruits was found to be statistically significant (P= 0.001) for post counseling score compared to pre counseling score. It indicates that many patients started consuming more fruits for being healthier than before after understanding the benefit of the same. Among 64 patients, 21 patients performed exercise daily prior to counseling whereas post-counseling score increased to 47 which was found to be statistically significant (p=<0.001). There are not many available studies to compare our results with them though similar findings were reported by Abdelmoneim Awad et al that diet and exercise were the top two high ranked aspects of obesity management in terms of perceived effectiveness.[20] When the question was asked to 64 patients about how often they eat fast food, post counseling score was less than pre counseling one, though it was not statistically significant (p=0.884). Similarly, in the study of Abdelmoneim Awad et al diet food was one of the highest ranked aspects of obesity management in terms of perceived effectiveness.[20] Results of the present study showed that the improvement in knowledge of study participants about how to prevent obesity among their families was found to be statistically significant after counseling (p≤0.001). We found that there was no improvement in awareness of the long term effect of eating unhealthy food and patient's willingness to be healthier. It was also found that time spent watching TV/ working on the computer was increased surprisingly after counseling. Among 64 patients, 34 considered themselves to have normal weight in pre-counselling whereas post-counseling score was 23. This was found to be statistically non-significant (p=0.081). This suggests that many patients did not know what their ideal weight

according to BMI was. When it was told to them they realized that they are overweight.

CONCLUSION

As seen in our study the counseling provided with the aid of patient information leaflet was beneficial in a significant change in habits and behavior of obese subjects. Through combined counseling for weight loss, physical activity, and self-management education, and by making referrals to evidence-based programs, healthcare professionals can help their obese patients make meaningful improvements in quality-of-life and long-term health outcomes.

AUTHORS CONTRIBUTION STATEMENT

Dr. Mahvash Iram conceived of the presented idea and designed the study. Dorna Karami carried out the study. Dr.Shankar Prasad supervised the project. Dorna Karami wrote the manuscript with support of Dr. Mahvash Iram.

CONFLICT OF INTEREST

Conflict of interest declared none.

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