A Comparative Study of Psychiatric Aspects, Eating Attitute and Quality of Life of Overweight and Obese Females

Abhay Paliwal[1], Ujwal Sardesai[1]

ABSTRACT

Introduction: Obesity is the emerging public health problem in the world. The present study was planned to gain insight in to psychiatric, eating and quality of life aspects of clinically overweight and obese female subjects. It is hypothesized that obese and overweight subjects differ in their psychiatric, aspect. To test the above hypothesis the present study was planned.

Material and methods: Thirty obese and thirty overweight and thirty normal weight subjects were included for the study as per there B.M.I. (body mass index) when they met the inclusion criteria along with their consent and those meeting exclusion were excluded from the study. All three groups underwent general Performa and M.H.Q. (Middlesex Hospital Questionnaire), EAT-26, short form of health survey (SF-36).

Results: Intra-group statistical analysis of ANOVA shown significant difference in Free floating anxiety (P>0.001) and highly significantly (P>0.0001) difference in Phobic anxiety, obsessional traits and somatic symptoms. Depressive symptoms were mildly significant in between groups (p>0.014) and insignificant for hysterical traits. Eating attitude was also highly significant (P>0.0001).overweight and obese females shown significant difference values for general, mental health and role impairment due to physical functioning.

Conclusion: obese and overweight females found vulnerable to ill mental health, prone to abnormal eating attitude and poor quality of life.

Keywords: overweight, obese, body mass index, Middlesex hospital questionnaire, eating attitude test-26, short form of health survey (SF-36)

INTRODUCTION

Columbia Encyclopedia defines obesity "condition resulting from excessive storage of fat in the body".[1] Encyclopedia Britannica defines obesity as "excessive accumulation of body fat, usually caused by the consumption of more calories than the body can use,".[2]

Obesity varies anatomically by the size, number, and distribution of fat cells and fat tissue. Obesity is key manifestation of hypothalamic injury, Cushing's disease and the polycystic ovary syndrome. Stopping smoking, over consumption of high-fat foods, aging having overweight parents, multiple births, and a sedentary lifestyle are obesity inducing factors. Obesity tends to put lot of burden on physical mental and eating aspect of the sufferer.

Psychological aspects of obesity

McFarland and Baker-Baumann[3], noted that body image perception influences eating patterns and self-esteem, distorted body image and low self-esteem can lead to eating disorders and overweight. Strict diets can cause depression in predisposed women.[4] Continuous dieting failures give rise to more cycles of depression and binge eating.[6] Keeping in view the impact of obesity on mental health the current study was planned.

Eating bhaviour

Emotional eating is a common eating addiction found in obese and overweight subjects under stress or negative mood.[7] many times specific type of food relieves the emotional turmoil and prepare ground for cyclic food abuse/ eating disorder[7] Likewise the quality of life is also being compromised due to physical and mental impact of obesity and overweigh subjects. Keeping all these aspects in consideration the current study is planned to evaluate and analyze the role of mental health, eating attitude and its impact on obesity in Indian population which can be helpful in formulating management and prevention strategies for obesity with following aims and objectives.

Aims and objectives of the research were to find out socio-demographic profile of clinical obese and overweight subjects, to compare psychiatric profile of the participants, to obtain the eating attitude of study subjects and to know the quality of life of clinical obese and overweight.

MATERIAL AND METHODS

General Design of Study

The present observational study was conducted at obesity clinic in SMS Medical College; Jaipur on every Friday from 10-12 a.m.The data from the study sample was collected over the period of 8 months starting from April 2002 to November, 2002. We confined to the female gender specifically, for the study as majority of the subjects coming to the clinic were females. This was planned to make the study comparable and specific.

Sample Collection

At the first visit of the patient, the treating physician as a regular health check up examined them. This was followed by weight (in k.g.) and height (in meters) measurement to calculate their B.M. I. (B.M.I. i.e. body mass index) body mass index is defined as follows: -

B.M.I. =Weight (In Kilogram) /Height (In Metre ^{2})

Patients were included for the study when they met the inclusion criteria along with their consent and those meeting exclusion were excluded from the study.

[1]Assistant Professor, Department of Psychiatry and Mental Hospital M.G.M. Medical College, Indore, India

Corresponding author: Dr. Abhay Paliwal 70, Lakshya Vihar Kanadia Main Road, Indore 452001, India

How to cite this article: Abhay Paliwal, Ujwal Sardesai. A comparative study of psychiatric aspects, eating attitute and quality of life of overweight and obese females. International Journal of Contemporary Medical Research 2016;3(4):1157-1161.

Inclusion criteria for the study were:
1. Female subjects of age group 20 - 40 years.
2. Subjects of BMI > 25. (Except for control group)
3. Subjects having working knowledge of both Hindi and English language.

Exclusion Criteria for the study were**:**
1. Pregnant and lactating females.
2. Subjects suffered from obvious psychosis in past history.
3. Subject receiving current treatment from psychiatrist or psychologist.

Patients were grouped in to obese when their B.M.I. exceeded 30 k.g. /m^2. Patients were further included in the study under age group 20-40 years. Total numbers of obese and overweight (30<B.M.I.>25) subjects were 30 each. For the purpose of preliminary analysis 30 consecutive female patients with normal weight (18k.g. /m^2<B.M.I. <25k.g. /m^2) of 20-40 years age group were also included as a control group. These subjects were those who accompanied obese and overweight during first visit. This was planned to make control group comparable to both the groups.

Thereafter, patients were subjected to socio-demographic sheet to collect the data, followed by series of three psychological scales (M.H.Q., E.A.T.-26and S.F.-36) to know their psychiatric profile, eating attitude and quality of life. These were self-rating scales to assess the subjects. Each patient took around 30-45 min. to fill the questionnaire. Some of the patients were reluctant enough to fill the questionnaire while others required motivation to do so.

Tools of the study

Scoring method of each test along with each individual test is described below:

Socio-demographic Data Sheet: This includes name, age, and father, husband name, address, education, occupation, marital status, and economic status, type of family, past psychiatric history.

Middlesex Hospital Questionnaire (MHQ)[8] HINDI VERSION[9]

The Middlesex Hospital questionnaire is a 48 item short clinical diagnostic self rating scale for psychoneurotic patients constructed by Crown and Crisp.[8] MHQ consist of six sub scales including Free Floating Anxiety (FFA), Obsessional trait symptoms (OBS), Phobic Anxiety (PHO)', Somatic Concomitant of Anxiety (SOM), Neurotic Depression (DEP), Hysterical personality traits (HYS)

It also provides total quantitative score on neurosis. It is widely used both in Britain and India. It is reported to be reliable and valid. Shrivastava and Bhatt[9] used the Hindi version of MHQ to groups of normal population (homogenous and heterogeneous) and a neurotic population. They also concluded from their study that the Hindi version of the MHQ is a very sensitive, reliable and valid instrument for differentiating the neurotics from normal.

Eating Attitude Test – (EAT-26)

David M.et.al.[10] Hindi Version Ritu Nehra et.al.[11] EAT-26 was developed by David M. Garner (1982) and has been established as highly efficient as the sole means for identifying eating disorders. This is a self-reporting questionnaire consisting of 26 questions. Each question is to be answered yes or no. A cut-off score of 20 was given by Garner. Hindi version of the EAT-26 was developed by Ritu nehra et. al.[11] They suggested the Hindi version of EAT-26,a reliable test for measuring eating attitudes. Although the cut off score for the Indian population has not been found, but it can be used for comparative study of eating behavior.

Short form of health survey (SF-36):[12] It is reasonable indicators of quality of life in eight dimensions which are measured by SF - 36. This test consists of 36 questions, collecting eight dimension of quality of life. It includes physical functioning, role impairment due to physical factors, bodily pain, general health, vitality, social functioning, role impairment due to emotional factors and mental health.

The cut-off scores for Indian population are not calculated. But in our study we have used this test for comparison in between two groups. It served the purpose and the error remained the same in both the groups.

STATISTICAL ANALYSIS

To evaluate results appropriate statistics were used. Mean and slandered deviation used to measure how widely values are dispersed from the average value (the mean). Quantitative data were tested to prove/disprove hypothesis by applying chi square test (χ^2) which provides the probability for a χ^2 statistics and degree of freedom (df). In cases where statistical analysis includes three or more groups and one ordinal and another numerical variable, we used analysis of variance ANOVA (F).

RESULTS

Table no. 1 shows mental health finding as per M.H.Q. Free floating anxiety is highlighting significant difference (P>0.001) among groups. Phobic anxiety, obsessional traits and somatic symptoms were highly significantly (P>0.0001) amoung groups as per ANOVA. Depressive symptoms were mildly significant in between groups (p>0.014). ANOVA was not significant among groups (P=0.246) for hysterical traits.

All three groups were insignificantly different (F value was 1.206) age wise, that's why comparable as per study plan.

Serial no.	M.H.Q. Sub scale score	Mean square	F	P-Value
1	Free floating anxiety	72.411	7.375	0.001
2	Phobic anxiety	79.544	8.922	0.0001
3	Obsessionl traits	79.011	8.428	0.0001
4	Somatic symptoms	161.244	17.445	0.0001
5	Depressive symptoms	43.744	4.516	0.14
6	Hysterical traits	10.033	1.426	0.246

Table-1: Analysis of variance of scores obtained on MHQ between obese, overweight and normal weight subjects

Most of the obese and overweight subjects were married (93.33%) along with normal weight (86.66%). Difference among groups on chi square was in-significant. Majority of obese were post-graduate (43.33%), 16.67% were educated up to primary or middle school each, rest were either graduate or educated up to secondary school. Most of the overweight females were graduate (43.33%), followed by post-graduate (36.67), middle-schooling (13.33%) and primary schooling (6.67%). While most of the normal weight were graduate (50%) followed by post graduate (16.66%), rest were educated up to Secondary school. Chi square shows significant difference among groups Occupation wise Housewife dominates all the groups (obese=60%, overweight=46.67%, normal weight=56.67%), this is followed by government job or highly qualified professional (obese=40%, overweight=46.67%, normal weight=26.66%), rest were students. Difference among groups was not significant. Family income profile shows Majority of females in obese group were in-between rs. 10001-15000 per month (43.33%) and 1000-5000 (20%) per month while most of the overweight were >20000(40%) and 10001-15000(30%). Most of the normal weight subjects were in 10001-15000 (36.67%) followed by 15001-20000(26.67%).Difference among groups was significant (P=0.002)

Table no. 2 shows highly significant (p>0.0001) as per ANOVA which shows significant difference for eating behavior in overweight and obese females.

Social functioning as per SF-36 scale provided highly significantly different (p>0.0001) value for general health and role impairment due to physical functioning for obese and overweight. Mental health was also significantly different (p>0.001) among obese and overweight. Physical functioning and bodily pain were also mildly significant (p>0.01). While vitality, social functioning, and role impairment due to emotional factors were insignificant among groups.

	Mean square	F	P-Value
EAT-26 Score	193.733	11.852	0.0001*

Table-2: Anova of eating behaviour scores obtained on EAT-26 between obese overweight and normal weight subjects

SF-36 subscale Variable	Mean square	F	P-Value
Physical functioning	3091.878	5.922	0.004*
Role impairement due to physical functioning	7000.000	9.369	0.0001*
Bodily pain	3547.778	6.204	0.003*
General health	3418.611	17.872	0.0001*
Vitality	1451.944	3.338	0.040*
Social functioning	1018.186	2.457	0.092
Role impairement due to emotional factors	1334.005	1.798	0.172
Mental health	2329.211	7.833	0.001*

Table-3: Anova of quality of life scores obtained on SF-36 between obese, ovrweight and normal weight subjects

DISCUSSION

Sociodemographic profile

Since most of the people in our study were married, we found significant difference between the groups on this variable. Lipowicz et.al.[13] reported that married women were more likely to be overweight and obese than never married individuals. The results indicated a significant association (P < 0.001) between marital status and the BMI. While Sobal et.al.[14] concluded that marital status was not significantly associated with fatness or obesity among women, when other variables were controlled. Our finding confirms with those of lipowicz et.al.[13] but differ from sobal et.al.[14] Ehrenreich[15] explained the causative factor behind it. He found that in the western world where individuality is considered a great value and where strong relations are becoming harder to build and maintained, food might be used as an answer to feelings of isolation. However due to the different design of our study we were not able to appreciate these findings.

Regarding the education status we found a significant difference between the three groups. Aranceta et. al.[16] found that Educational level showed an inverse relationship with obesity, thus obesity was higher in less educated groups, particularly among women. Galobardes B et.al.[17] Found that Education and occupation were inversely related to BMI in women and had a synergistic effect (p-value for the interaction = 0.03). Woo J et. al.[18] examined influence of education on Body mass index and found inverse relationship between B.M.I. and education. Wardle J, et. al.[19] found that Higher educational attainment was associated with a lower risk of obesity in women. Our sample shows higher education among overweight and obese subjects. This was so, because we had chosen the sample attending the obesity clinic which was not representative of the community. Moreover highly educated subjects seem to be more aware of their weight related problems and seek help, that's why our result contradicts all these findings.

We did not find any significant difference in the occupational status between the three groups. While Lahti-Koski M et. al.[20] reported that in women changes in BMI were similar in all occupational groups.Wardle J, et. al.[19] found that higher occupational status was associated with a lower risk only for women. Our finding matches with that of lahti-koski et. al.[20] but this should be interpretated with caution since it does not give any idea of the physical work involved in these occupations. If we would have classified the groups, according to the physical work involved, the findings would have been different.

In our study, monthly family income between the groups was significantly different. Monteiro CA et.al.[21] found that obesity in women was strongly and directly associated with income. Sarlio-Lahteenkorva S et. al.[22] found that both overweight and obesity were associated with low individual earnings. Gortmaker SL et.al.[23] concluded that obesity was associated with lower household incomes and higher rates of household poverty.Our findings match with these studies it may be due to the fact that High earning group of the society are more cosmetically aware as well as their nutritional habits differ from that of lower earning group. These factors may contribute to the findings in our study.

Psychological aspects

In our groups we found that there was a significant difference between the groups on all, except one (hysterical) subscale

of M.H.Q. Free floating anxiety, phobic anxiety, obsessional trait, somatic symptoms and depressive symptoms were significantly different. Strunkardet.al.[24] found that traits Such as immaturity, suspiciousness, rigidity, frustration-depression, withdrawal, tension anxiety and neurasthenia prevailed significantly in the obese population. As our study has shown significant difference among groups on free floating anxiety and phobic anxiety scores likewise becker et.al.[25] also found an association between psychological disorder and weight they concluded that obese women suffered from anxiety disorder significantly more as compare to normal weight counterparts. Nichole H.Falkner et.al.[26] found that when obese girls were compared with their average weight counterparts they were more likely to report serious emotional problems, more likely to report hopelessness, and more likely to report a suicide attempt. R Rosmond et.al.[27] studied 1464 women, aged 40 years, in bivariate analyses, they found that BMI was associated with use of anxiolytics, ant depressive drugs, various sleeping disturbances, and a low degree of life satisfaction and suggested that elevated BMI (obesity) were associated in different ways with symptoms of psychiatric ill-health in women. In contrast stewart et.al.[28] reported that obese persons were significantly less anxious and depressed than normal weight persons. The differences among the groups were not strong.

Our results were similar to the earlier three studies. Wolman et. al.[5] described the psychopathology behind obesity, according to this obese individuals are depressed due to lack of self-confidence, self-blame and a feels of isolation. Due to poor mental and physical health, overweight or obese people have a pessimistic outlook on life, which cause more depression and overeating.

Martins et.al.[29] reported the association of cerebral asymmetry and HPA axis reactivity to the obesity. They found that subjects with hyper reactive HPA axis scored higher on stress related psychological measures, and cerebral asymmetry was causal in the obesity acquisition. Thus different psycho endocrinal characteristics may be the possible cause of increased neurotic traits in obese subjects.

Eating behavior

We found that eating behavior of three groups was significantly different, the obese and overweight scored higher on the E.A.T. scale showing more abnormal eating behavior. However due to the lack of cut off score for Indian population, we were unable to diagnose specific disorders. Adami GF et.al.[30] found aberrant eating patterns in obese patients as compared to normal weight subjects. While Chugh R, Puri S[31] reported significant difference of eating behavior between obese and normal weight females, and found that 43.3 % were at a significantly (P=0.00109) greater risk of developing anorexia in the future.Diehl JM[32] found significantly different eating behavior between obese and normal weight subjects.

Our findings matches with that of above three studies, although the obese were shown significantly higher scores on EAT-26 but the specific eating disorder can not be diagnosed on the scale. Thus different eating behavior in obese may be a part of partial eating disorder.

Quality of life

We found that in our sample there was a significant difference between the groups on measure of physical health which was measured with the help of S.F.-36. Obese subjects scored lower on the physical functioning, role impairment due to physical functioning, bodily pain and general health. Regarding the mental health, obese people scored significantly lesser than other groups on vitality and mental health. Larsson U et.al.[33] found that obese women rated their health worse than normal-weight women on three of the physical health scales and analysis indicated a clearer negative association between obesity and physical health than between obesity and mental health.

Barofsky I et. al.[34] concluded that obese patients reporting pain scored significantly lower on all SF-36 domains than those not reporting pain. Findings indicate that the pain itself is independently associated with impaired HRQL in nearly half of obese persons, seeking treatment.

Our finding matches with the above mentioned findings. Poor quality of life (both physical and mental) may be due to social bias against obese people and increased likelihood of medical disorders affecting physical and mental functioning.

CONCLUSION

To sum up, it can be concluded that clinically obese and overweight individuals are vulnerable to psychological ill health or vice versa. They also show different socio-demographic characteristics, impaired quality of life and eating attitude. An attempt should be made to deal with psychological, eating and quality of life related problems so that obesity can be managed in a better way.

REFERENCES

1. Obesity, The Columbia Encyclopedia, Fifth Edition, Columbia University Press 1993.
2. ObesityBritannicaOnline,<http://www.eb.com:180/cgi.bin/g?DocF=micro/433/72.html> 1998.
3. McFarland, B. and Baker-Baumann, T. From Shame to Body Image: Culture and the Compulsive Eater. In Donley, C. and Buckley, S., eds. The Tyranny of the Normal: An Anthology. Kent, Ohio and London, England: The Kent State University Press 1996;pp. 89-110.
4. Harvard Medical School, Biological factors, The Harvard Mental Health Letter 1992;9:1-4.
5. Wolman, B. B. Psychological aspects of obesity: A handbook. Van Nostrand Reinhold Co.: NY. 1982.
6. Davison G. C., and Neale, J. M. Abnormal psychology. NY. John Wiely and Sons. 1990.
7. Nay A. Holistic Counseling for Weight-Loss. Unpublished manuscript 1998.
8. Crown, S. and Crisp, A.H. A short clinical diagnostic self rating scale for psychoneurotic patients. British Journal of Psychiatry 1966;112:917-20.
9. O.N. Shrivastav V.K. Bhatt. The Middlesex hospital questionnaire (MHQ) standardization on a hindi version. Indian journal of psychiatry 1974;16:283-286.
10. Garner, D.M., Olmsted, M.P., Bohr, Y. and Garfinkel, P.E. The eating attitudes test: Psychometric features and clinical correlates. Psychological Medicine 1982; 12:871-878.
11. Ritu nehra, Manju Mohanty, Pratap Sharan, Nitin Gupta, Paramjeet Khurana. Assesment of psychometric

properties of Eating Attitude Test (EAT-26) in a targeted population. Indian Journal of Clinical Psychology 2001; 28,2:241-245.
12. Ware, J.E., Snow, K.K., Kosinski, M., Gandek, B. S.F.-36 health survey manual and interpretation guide. Boston. Health institute, New England Medical center. 1993; p.p.B19-24.
13. Lipowicz A, Gronkiewicz S, Malina RM. Body mass index, overweight and obesity in married and never married men and women in Poland. Am J Human Biol 2002;14:468-75.
14. Sobal J, Rauschenbach BS, Frongillo EA Jr. Marital status, fatness and obesity. Soc Sci Med 1992;35:915-23.
15. Ehrenreich, B. A Nation Playing With Its Food. Time, 1995;145:78-80.
16. Aranceta J, Perez Rodrigo C, Serra Majem L, Ribas L, Quiles Izquierdo J, Vioque J, Foz M. Prevalence of obesity in Spain: the SEEDO'97 study. Spanish Collaborative Group for the Study of Obesity. Med Clin (Barc) 1998;111:441-5.
17. Galobardes B, Morabia A, Bernstein MS. The differential effect of education and occupation on body mass and overweight in a sample of working people of the general population. Ann Epidemiology 2000;10:532-7.
18. Woo J, Leung SS, Ho SC, Sham A, Lam TH, Janus ED. Influence of educational level and marital status on dietary intake, obesity and other cardiovascular risk factors in a Hong Kong Chinese population. Eur J Clin Nutr 1999;53:461-7.
19. Wardle J, Waller J, and Jarvis MJ. Sex differences in the association of socioeconomic status with obesity. Am J Public Health 2002;92:1299-304.
20. Lahti-Koski M, Vartiainen E, Mannisto S, Pietinen. Age, education and occupation as determinants of trends in body mass index in Finland from 1982 to 1997. P: Int J Obes Relat Metab Disord 2000;24.
21. Monteiro CA, Conde WL, Popkin BM. Independent effects of income and education on the risk of obesity in the Brazilian adult population. J Nutr 2001; 131:881S-886S.
22. Sarlio-Lahteenkorva S, Lahelma E. The association of body mass index with social and economic disadvantage in women and men. Int J Epidemiol 1999;28:445-9.
23. Gortmaker SL, Must A, Perrin JM, Sobol AM, Dietz WH. Social and economic consequences of overweight in adolescence and young adulthood. N Engl J Med 1993;329:1008-12.
24. Sturnkard, A.J., Mendelson M. Disturbances in body image of some obese person. J.Amer. Diet. Ass 1961;38:328.
25. Becker ES, Margraf J, Turke V, Soeder U, Neumer S. Obesity and mental illness in a representative sample of young women. Int J Obes Relat Metab Disord 2001;25 Suppl 1:S5-9.
26. Falkner nicole H., Dianne Neumark-Sztainer, Mary Story, Robert W. Jeffery, Trish Beuhring and Michael D. Resnick. Social, Educational, and Psychological Correlates of Weight Status in Adolescents. Obesity Research 2001;9:32-42.
27. Rosmond and P Bjorntorp. Psychiatric ill-health of women and its relationship to obesity and body fat distribution. Obesity Research 1998;6:338-345.
28. Stewart A.L.,Brook R.H.,Effects of being overweight: Ame. J.of Public Health 1983;73:171-178.
29. Martin-Du Pan RC, Heraief E. Ten questions on the causes and consequences of obesity: stress hormones. Rev Med Suisse Romande Jan 2001;121:51-5.
30. Adami GF. The influence of body weight on food and shape attitudes in severely obese patients. Int J Obes Relat Metab Disord 2001;25 Suppl 1:S56-9.
31. Chugh R, Puri S. Affluent adolescent girls of Delhi: eating and weight concerns. Br J Nutr 2001;86:535-42.
32. Diehl JM. Attitude to eating and body weight by 11- to 16-year-old adolescents. Schweiz Med Wochenschr 1999;129:162-75.
33. Larsson U, Karlsson J, Sullivan M. Impact of overweight and obesity on health-related quality of life--a Swedish population study. Int J Obes Relat Metab Disord 2002;26:417-24.
34. Barofsky I, Fontaine KR, Cheskin LJ. Pain in the obese: impact on health-related quality-of-life. Ann Behav Med 1998;19:408-10.

Source of Support: Nil; **Conflict of Interest:** None

Submitted: 01-03-2016; **Published online**: 30-03-2016