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EFFECT OF OBESITY ON QUALITY OF LIFE IN MIDDLE AGED FEMALES

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ABSTRACT

Background: Obesity is increasing at an alarming rate across the world. Obesity has great impact on quality of life of individuals. Due to the fact that there is global increase in obesity, knowledge about the effect of obesity on quality of life in middle aged females is of great importance for physicians and physiotherapists with regard to improve the quality of life. Therefore, the purpose of study was to investigate the impact of obesity on quality of life in middle-aged females.

Methods: Forty females participated in the study with a mean age of 48.05 years. According to their body mass index (BMI), Group 1 consists of normal weight females (n=20, BMI=18.5 -24.9) and Group 2 consists of obese females (n =20, BMI = >30). The Impact of Weight on Quality of Life (IWQOL) Questionnaire was used to assess the impact of obesity on quality of life.

Results: There were significant differences ($P<0.05$) in quality of life among normal weight and obese females. There was a positive significant correlation between the BMI and the QOL and all scales of quality of life.

Conclusion: The present study concludes that obesity is an important factor responsible for deterioration in quality of life of middle aged females.

Keywords: Obesity, Health, Body mass index (BMI), Quality of life, Impact of weight on quality of life questionnaire (IWQOL), Activities of daily living (ADLs)

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INTRODUCTION

Obesity is one of the major public health problem in developed countries now a days [1]. It is responsible for development of a variety of chronic diseases such as diabetes, hypertension and coronary heart disease and it is associated with high levels of health care costs [2].

Obesity not only affects an individual's quality of life but often result in early uptake of sedentary life style associated with various co-morbidities [3]. It has negative impact on both physical and psychosocial aspects of quality of life especially among the severely obese [4]. The quality of life domains like health, sexual life, self esteem are more impaired in obese females than males of same age[5].

The need of study has emerged because the effect of obesity is not well recorded in middle aged females. The author came across with studies documenting the effect the obesity on foot posture in paediatrics and elderly population [6].

The purpose of this study was to investigate the impact of obesity on quality of life in middle aged females.

METHODS

Subjects: There were two groups participating in the study, Group-I consists of 20 obese and Group-II consists of 20 normal weight female participants. All the participants were of middle age group i.e. 40-55 years. The participants were recruited from the Punjabi University community randomly. A subject was classified as obese if her BMI>30 and normal with BMI ranging in between 18.5-24.99. The participants' body weights and heights were measured and their BMI were calculated based on them. Individuals with any congenital deformities of lower limb, severe deformity of hip, knee and ankle joint, surgical history of lower limb were excluded. Also, subjects with disorders of cerebral, visual and vestibular disorders and seronegative arthropathies were excluded. The details of participants's height, weight and BMI data of both the groups is given in Table 1. The nature, aim and protocol of the study was introduced to each participant before collecting data. An informed consent was obtained from all participants prior to the data collection.

Group description	Height (in cms) (mean ± SD)	Weight (in kg) (mean ± SD)	BMI(kg/m ²) (mean ± SD)
Group 1 (Normal)	158.42±6.44	57.93±6.61	23.11±1.23
Group2 (Obese)	156.01±7.16	80.8±9.85	33.21±3.35

Table 1: Demographic description of subjects

Procedure:

Subject's height and weight was determined for calculating BMI. The weight was measured with weighing scale (equinox) and anthropometric rod was used to determine the height of the subject. The variable of weight and height was measured three times and the mean value considered. The BMI was calculated as:

$$\text{BMI} = \text{Weight (Kg)} / \text{Height (M}^2\text{)}$$

Measuring Quality of life using Questionnaire "Impact of

weight on quality of life Questionnaire (IWQOL)"

The subjects were interviewed using IWQOL Questionnaire used to measure the effect of obesity on quality of life. The questionnaire used consisted of five items Health (14), interpersonal/ Social (11), Mobility (10), Self – esteem (10), Activities of daily living (10). Scores for each scale were calculated by summing scores on individual items using the following: 1= never true, 2= rarely true, 3= sometimes, 4= often true, 5= always true. The possible score range for each score is Health (14-70), Social/Interpersonal (11-55), Mobility (10-50), Self-esteem (10-50), Activities of daily living (7-35). More higher the score, poorer will be the quality of life. The item test-retest reliability of tool averaged 0.75 ranging from (0.53-0.92) and scale test-retest reliability averaged 0.89 (0.81-0.93), while internal consistency was found to be 0.87 ranging (0.68-0.93) [5].

Data analysis

For each of two participant groups and each of variable, mean and standard deviation were computed. The independent t-test was performed for comparing quality of life between group 1 (normal) and group 2 (obese). The correlations between the variables were assessed using Pearson's correlation. For all these tests a significance level of 5% was considered.

RESULTS

Comparison of variables between group 1 and 2

Independent t test results showed significant (p<0.05) values for quality of life and each of its scales i.e health, social/interpersonal, mobility, self esteem, activities of daily living with mean for quality of life total score in group 1 and 2 (63.10±5.34 and 86.55±11.52). The mean value of Health, Social/interpersonal, Mobility, Self esteem and Activities of daily living in group 1 and 2 is 22.7±5.25 and 27.1±4.99, 11.00±0.0 and 12.00±1.49, 12.1±2.73 and 19.4±.63, 10.00±0.0 and 14.35±1.63, 7.00±0.0 and 13.7±4.17 respectively (table 2, graph 1).

Table 2: Comparison of quality of life between group 1 and 2

IWQOL scales	Group 1 (normal)		Group 2 (obese)		t value
	Mean	SD	Mean	SD	
QOL Total	63.10	5.34	86.55	11.52	8.26*
QOL-1 (Health)	22.7	5.25	27.1	4.99	2.72*
QOL-2 (Social)	11.00	0	12.00	1.49	3.01*
QOL-3 (Mobility)	12.1	2.73	19.4	4.63	6.08*
QOL-4(Self esteem)	10	0	14.35	1.63	11.93*
QOL-5 (ADL)	7	0	13.7	4.17	7.19*

$$P_{\{t(38,0.05)\}} \leq 2.02^* \quad \text{NS} = \text{non significant}$$

Correlation between variables

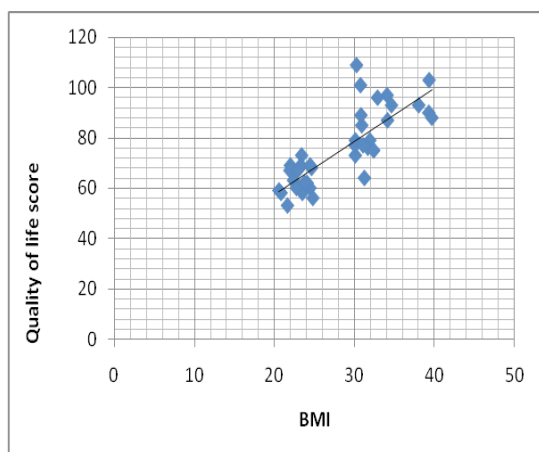
Table 3 shows the correlation between BMI and QOL total score and its all scales health, social/interpersonal, mobility, self esteem, activity of daily living. The BMI and quality of life total score have a positive significant correlation (r=0.81). Each scale of QOL share a positive significant correlation with BMI with health (r=0.35), social/interper-

sonal (r=0.50), mobility (r=0.73), self esteem (r=0.86) and activity of daily living (r=0.78).

Table 3: Pearson's correlation between BMI and quality of life (QOL)

Variables	Correlation coefficient (r)	P value
1 BMI and QOL Total score	0.81	0.0001*
2 BMI and QOL1 (health)	0.35	0.0268*
3 BMI and QOL-2 (social)	0.50	0.001*
4 BMI and QOL-3 (mobility)	0.73	0.0001*
5 BMI and QOL-4 (self esteem)	0.86	0.0001*
6 BMI and QOL-5 (ADLs)	0.78	0.0001*

P<0.05 df=38



Graph 1 Correlation between BMI and quality of life

DISCUSSION

The possible explanation for our results may be that with obesity the chance of developing health related co-morbidities increases which may impact quality of life. Heo has reported that obesity is related to other co-morbidities like hypertension, diabetes, myocardial infarction, coronary heart disease and musculoskeletal impairments mediate the effect of body mass index on health related quality of life [7]. The findings of present study are consistent with the findings of other studies (Fontaine *et al.*, 1996; Kolotkin *et al.*, 2002) which investigated the relation between body mass index and quality of life and suggested that the quality of life worsens with increasing obesity [8,9]. Jia and Lubetkin explored the relationship between obesity and health related quality of life in adult population. They claimed that the obese persons have significantly poorer health related quality of life and in absence of any chronic disease lower scores have been observed known to be linked to obesity [10].

Our study also supports the conclusions given by Wadden and Stunkard, who proposed that the emotional health is poorer in case of obese persons with chronic diseases [11]. However the obese subjects were found to be compromised in physical well-being but not at emotional well-being [12]. There are some limitations found in current study which are explained with the future research prospectives. First, the small sample size cannot produce point estimates of

population parameters. Secondly menopausal and occupational status could have influence on obesity. It should be considered in future research studies. Thirdly only females participants took part in the study. There is need of future research to characterize the effect of obesity on quality of life of males.

Conclusion: In conclusion this study demonstrates that there is positive significant correlation between body mass index and quality of life in middle age females. Body mass index is an important determinant factor of quality of life of middle aged females. The study concludes that the obesity is an important factor responsible for deterioration of quality of life of middle aged females.

Conflict of interest statement

None

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