



## The Impact of Obesity on Psychological and Social Aspects of Life

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**Abstract:** Introduction: Obesity rates have been markedly increased in developing countries. Also, during the last decades, rising rates of psychological diseases and subsequent suicide have been reported. Thus, the objective of this study was to explore the extent to which increased body weight affects the psychological and social aspects of life.

**Methods:** Using a sample constituted of both genders from different ages, divided into groups based on body mass index, the psychological and social aspects were evaluated using the world health organization quality of life brief (WHOQOL-BREF), an abbreviated version of the world health organization quality of life (WHOQOL-100).

**Results:** The results indicated that groups with higher body mass index had more psychological problems than the groups with normal or lower body mass index and being overweight interferes with having a normal social life.

**Conclusion:** considering the results, more importance and awareness needs to be given to those who suffer from obesity. Also, further research into the psychological and social effects of obesity needs to be stressed.

**Keywords:** obesity, WHOQOL, BMI, social, psychological.

### Objectives

1. The main objective of this thesis is to investigate to what degree obesity could affect the subject's psychological and social aspects of life in Jordanian adults in general.
2. Our secondary interest will be focusing on middle-aged women as they are thought to be the most affected category.

### Background

The prevalence of obesity and overweight globally is 1.9 billion and 609 million adults in 2015 about 39% of the world's population this percent increase by 50% in 35 years as it was 26.5% in 1980. [1] Obesity and its consequences regarded as an important source of morbidity, impaired quality of life and have a crucial effect on life expectancy.[2] Obesity imposes a large economic burden on nations. In 2014 the global economic impact of [3] Obese and overweight individuals as their bodies are heavy and bulky, they often face negative and critical comments about their appearance especially with our cultural beliefs about body shape and beauty, they eventually have

lower self-esteem and dissatisfaction, also they suffer from victimization and negative thoughts that would lead to depression and suicidal attempts. [4][5] Studies showed that obesity may also affect social life, as overweight or obese people are more prone to being bullied, humiliated, or ostracised. They are also more likely to engage in bullying behaviour.[6] Moreover, studies showed that obese adolescents have fewer friends and are less socially integrated than their non-obese counterparts.[7] As well as obese students usually have poor academic performance and low grades. In employment, they face difficulty in obtaining a job and worse job replacement, also they receive less income and promotion than other employees. Furthermore, they suffer from reduced physical capacity to perform occupational tasks and basic activities such as walking or lifting objects. [8][4][5] These types of researches will help experts and policymakers who are concerned about the problem to provide more multidisciplinary care for obese individuals.

### Hypothesis

1 Is there an association between higher body mass index and psychological impairment? HO: There is no association between higher body mass index and psychological impairment. HA: There is an association between higher body mass index and psychological impairment. 2 Is there an association between higher body mass index and social impairments?

HO: There is no association between higher body mass index and social impairments. HA: There is an association between higher body mass index and social impairments.

## LITERATURE REVIEW

### Domain 1: physical activity

Many studies review that there is a strong correlation between obesity and physical inactivity as shown that BMI proportionally related to daily pain which has a direct negative impact on physical activity. Many studies mentioned that physical activity lower depression by a medium amount and anxiety by a small amount [9][10]. As well as, obese people have sleep problems which are reflected in the next day's activity such as obstructive sleep apnea (OSA) caused primarily by obesity and it is considered a major cause of sleep disturbance in obese people. Another study shows that 50% of obese who don't have OSA have significant hyper-somnolence while non-obese neither apneic is 2%. [11][12]. This sleepiness worse work performance. [13]

### Domain 2: social

Obesity effect on social networking is obvious, Many types of research conclude that obese people have less social networking than the normal ones.[14][15] This mainly attributed to bullying that obese have from others. Also, low body satisfaction makes a barrier for obese to participate in social activities.[16] and this observed to be more among females [17].

Another important perspective obese people tend to have less sexual relationships than normal and this may attribute to decreasing sexual desire and increasing sexual dysfunction among obese men more than women [15][18] Also, other studies show that the prevalence of infertility among obese men.[19] and women [20] are more than normal people.

### Domain 3: Environment

Being obese means that more limitations in getting a job for both men and women with more limitations to women [21][22] And that not only in getting a job also it has been reviewed that obese employee lost their jobs because of their weight despite their positive performance or despite weight unrelated to their duties. Another study suggests that for females an increase of 46 pounds above average weight was associated with a decrease in wages by 9%.

### Domain 4: Psychological

Weight-based discrimination is a common experience for obese people and has a negative impact on their psychological aspects [23]. Frequency of stigmatizing experiences is associated with depression [24], general psychiatric symptoms [25], feel ashamed of their body [26] and low self-esteem. [27]

## METHODOLOGY AND TOOLS

**Procedure:** primarily the questionnaire will be distributed on a sample of twenty subjects, to determine the best way to be filled by participants. a trained person will explain to ten of them how to complete the questionnaire while the other ten will fill it online by themselves. If the results showed subjects can complete it online alone, then in the period between September and October 2020 the questionnaire will be published on social media Facebook group that is regarded by obese people in Jordan, aiming to reach the largest possible number of the targeted group. An informed consent will be provided to all participants before they respond to the questionnaire, which by they will be informed about data confidentiality and anonymity, the study is entirely voluntary, they can withdraw at any time and any information that can be identified will be disclosed only with their permission. All the collected data will be stored in an online table on Google drive.

**Tools:** The survey derived from The abbreviated version of WHOAOL-100 that is WHOQOL-BREF. The WHOQOL-BREF composed of 26 questions (two general questions that assess the quality of life and 24 questions of satisfaction about particular aspects in the psychological, physical, social and environmental domains. A score from 1 to 5 on a response scale will be used for Each item of the WHOQOL-BREF. Depending on guidelines of the WHOQOL, raw domain scores were converted to 4-20 score. Domain scores are scaled in which higher scores indicates higher quality of life. the domain score was calculated by using the mean score of items within each domain. they will be transformed linearly to a 0-100-scale after being computed.

**Sample:** Data will be collected from one thousand participants randomly, so it is sort of difficult to define a complete sampling frame. The data collected were included age, sex, highest education and marital states. The age of participants was categorised into two groups of  $\leq 35$  year and  $> 35$  year. Education years was categorized into two groups: high school and lesser education / diploma, bachelor and higher education year. Marital status was represented by two categories of single/divorced/widower and married.

**Statistical analysis:** This will be designed as a cross-sectional study, the information collected will be organized with the SPSS software for statistical analysis. Two -way analysis of variance will be used in analysis of each of the domains and group differences in total scores on the WHOQOL-Brief. The main point in the analysis is the comparison between weight categories (the main effect of body mass index ) .Rank-Sum Test on Likert-Scale Type Data will be used.

**Validity and reliability:** both the WHOQOL-100 and the WHOQOL-BREF demonstrated good discriminant validity, content validity and test-retest reliability, an assessment for their sensitivity to change is currently being assessed. Domain scores produced by the WHOQOL-BREF correlate at around 0.9 with the WHOQOL-100 domain scores.(WHO).

WHOQOL BREIF has impressive reliability and validity as it was developed in diverse cultures and it's content was framed in culture neutral terminology this give it a strong potential to be used world wide .WHO BREIF has 4 domains with 0.7 cornbach's alpha and intraclass correlation coefficient 0.95 this indicate that the questionnaire is generally acceptable.[28] The internal consistency of all facets and the four domains of the WHOQOL-100 was good (Cronbach's alpha's ranging from 0.62 to 0.93 and 0.64 to 0.84 , respectively).

Sparse and relatively low correlations were found between demographic characteristics (age and sex) and WHOQOL-100 scores.[29]

## RESULTS

### Internal Consistency Reliability:

Internal consistency reliability is the most common evidence of psychometric soundness in HRQOL instruments. Internal reliability is concerned with the homogeneity of the items within the instrument. The minimum acceptable value for the instrument internal consistency is Cronbach 0.65-0.70.

Cronbach's alpha was calculated for the 26 items of WHOQOL-Brief Arabic version. Cronbach's Alpha score was 0.894 which exceeded the criteria for acceptable instrument internal reliability. Additionally, the internal consistency reliability for the four domains was 0.716.

**Correlations Between the 26 Items of WHOQOL-Brief Arabic version:**

The correlation coefficient of the scores of the 26 items with one another was measured using Pearson method. All the correlations were statistically significant ( $P < 0.001$ ).

**Correlations Between the 4 Domains of WHOQOL-Brief Arabic version:**

The correlation coefficient of the scores of the 4 domains with one another was measured using Pearson method. All the correlations were statistically significant ( $P < 0.001$ ).

**Divergent (Discriminant) Validity:**

Divergent validity describes the degree to which certain items of the instrument do not correlate with other items that it is theoretically not correlated with. It was measured by correlating the scores of the instrument with the scores of Participants' Education Level. there are no statistically significant correlations between WHOQOL-Brief Arabic version itemscores and Participants' Education Level.

there are no statistically significant correlations between WHOQOL-Brief Arabic version domain scores and Participants' Education Level.

To further illustrate the ability of WHOQOL-Brief Arabic version to discriminate between different groups, independent-samples *t*-test of the score of WHOQOL-Brief Arabic version was conducted. Group one (none obese) comprised of participants with BMI  $< 25$  (69%). Group two (obese) comprised of participants with BMI  $\geq 25$  (31%).

A series of independent-samples *t*-test at 95% confidence interval demonstrate statistically significant difference in the scores of WHOQOL-Brief Arabic version items and domains between group 1 (one obese) and group two (obese) with  $P < 0.001$ .

**Participants' demographic and clinical characteristics:**

Participants' characteristics

**Concurrent Validity:**

Pearson *r* coefficients between WHOQOL-Brief Arabic version item scores and BMI are negatively correlated. Pearson *r* coefficients between WHOQOL-Brief Arabic version domainscores and BMI are negatively correlated.

Gender					
		Frequency	Percent	Valid percent	Cumulativepercent
Valid	Female	777	77.7	77.7	77.7
	Male	223	22.3	22.3	100.0
	Total	1000	100.0	100.0	

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Age	1000	9	74	28.94	10.940
BMI	1000	11.7	66.2	27.477	6.4640
Valid N (listwise)	1000				

**DISCUSSION:**

Obesity rates have been markedly increased in developing countries. Also, during the last decades, rising rates of psychological diseases and subsequent suicide have been reported. Thus, the objective of this study was to explore the extent to which increased body weight affects the psychological and social aspects of life. This study used a sample constituted of both genders from different ages, divided into groups based on body mass index, the psychological and social aspects were evaluated using WHOQOL-BREF. Our study showed that groups with higher body mass index had more psychological problems than the groups with normal or lower body mass index and being overweight interferes with having a normal social life.



The findings with global scores on the WHOQOL-Brief supported previous studies that reported a negative linear relationship between QoL and elevated BMI [32, 33].

The results with regard to the different domains also indicated a relationship between elevated BMI and poor QoL. The physical aspect of QoL was negatively correlated with BMI. This domain considers such characteristics as pain, sleep, and the capacity to perform daily activities. The results with regard to the psychological domain (i.e., self-esteem, body image, and negative and positive feelings) indicated that QoL declined with an increase in weight, which is consistent with previous studies [32]

The present study has some limitations. The groups included individuals with varying ages. Ideally, age would be included as an independent variable, with different groups according to age, but this would impact recruitment and study feasibility. Future studies that examine the link between obesity and QoL in young adults compared with older adults should be conducted to explore possible age factors. Additionally, BMI was calculated based on self-reported information, which can cause differences between the calculated BMI and real BMI.

This study is also one of the few exploring the relationship between QoL in a developing and Middle East countries. This relationship has already been extensively demonstrated in North American and European populations, but our results allow us to affirm that this relationship remains the same in a different social and cultural context. Additionally, the results suggest the possible influence of the sociocultural context on the relationship between weight, QoL and gender. Future studies that utilize a cross-cultural design may help to understand the contextual factors that are involved in the impact of obesity on QoL in relation to other variables, such as gender. We also suggest further explorations of the correlation between demographic information, such as socio-economic status, and the relationship between obesity/QoL, in particular for studies conducted in countries with higher inequality.

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