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# STUDYING INCIDENCE OF OBESITY AND DEMOGRAPHIC FACTORS RELATED TO IT IN 30 TO 60-YEAR-OLD WIVES OF STAFF WHO ARE WORKING IN OIL COMPANY OF SHIRAZ

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## ABSTRACT

**Introduction:** obesity is one of health problems and risk factor for manifestation of other illnesses. The prevalence of this complication is increasing in many industrial countries specially America and developing nations. The present research aims to study prevalence of obesity and demographic factors related to it in 30 to 60-year-old wives of husbands who are working in Oil Company of Shiraz. **Materials and Methods**: this is a descriptive-analytic and sectional study. At first, by taking letter of recommendation of Islamic Azad university of Marvdasht to health service canters of Oil Company, necessary permissions were taken from clinics of Oil Company. The population form was prepared from all wives of Oil company staff in Shiraz and sampling was done randomly. 500 subjects were obtained by the formula. In order to measure the weight, digital scale (with error of 100 g) was used and its validity was confirmed. The weight and height were measured by a skilful person without shoes with light and thin cloths and body mass index was calculated. In order to analyze statistical data, SPSS version 21 was used in addition to Chi-square test, Fisher Exact-test and ANOVA. **Results and Conclusion**: results showed that among 500 subjects under study, the weight of 30% (154 persons) was normal, the weight of 3% (15 persons) was low, 34.8% of them had overweight (174 persons), 14% (75) had obesity type 1, 13.2% had obesity type 2 (66 persons), 4.2% had obesity type 3 (21persons). Mean age was 47.3±8.1, mean weight was ± 72±5.6 and mean height was 159.3±5.6. 425 of women were housewives and others had jobs. Also among the husbands of the women under study, 204 husbands were retired (40.8%) and 296 husbands (59.2%) were still working in Oil company. the salary of 376 persons (75.2%) was monthly higher than three million tomans and others were paid approximately three million tomans per month. 249 persons (49.8%) were walking continuously as an exercise, 201 persons (40.2%) did no exercises and others did trivial activities such as aerobic and swimming (10%).

**Keywords**: Obesity, Oil Company of Shiraz, Demographic Factors

## INTRODUCTION

Obesity is considered as one of common health problems in present century. Its change into an epidemic shows that 300 million people are affected by obesity throughout the world and more than one milliard persons suffer from overweight. Also, obesity has a close relationship with type-2 diabetes, cardio-vascular diseases, high stress, sleep apnoea, increase of cancer and problems related to joints and annually about 4.2 milliard Euro are spent for this illness (Skoultz et al, 2009) [1]. Based on the definition of world health organization (WHO), overweight and obesity are known as abnormal accumulation of fat in the body that disturbs the health of individual (Chample et al, 1990) [2]. Obesity is outlined as an important health problem throughout the world and its prevalence is increasing in developed and developing countries due to change of life style (Ayatollahi and Mojtabayi, 2012)[3]. Obesity is one of health problems and a risk for manifestation of many diseases. The prevalence of this illness is increasing rapidly in many industrial countries especially in America and developing nations. Therefore, 64% of American adults suffer from overweight and about 33% of them are obese (Afkhami et al, 2002) [4]. Obesity is the result of general or local increase of fat in the body (Goyton, 2006) [5]. Based on

statistics reported by WHO in 2005, 1.6 milliard adults (older than 15 years) are suffering from overweight and at least 400 million people are clinically obese. Concerning such information, more than 2.3 milliard persons suffered from overweight in 2015. Prevalence of stomach obesity was significantly increasing in American adults in both genders from 1960 to 2000 (Azizi et al, 2005) [6]. WHO estimated that in 2015, about 2.3 milliard adults suffered from overweight and more than 700 million persons were obese and 4.2% suffered from morbid obesity (Bankser et al, 2012). According to classification of WHO for body mass index, BMI of 18.5-25 kg is normal, BMI of 25-99 kg is overweight and BMI of more than 30 kg is obese [7]. In men, the fat is stored above the waist and in women; the fat is stored under the waist around hip and thighs. Stomach fat is evaluated by WHR and WC that are known as strong risks for appearance of cardio-vascular diseases (Bavert et al, 2012) [8] and type-2 diabetes (Manjo et al, 2012) (9). Also, it has been clarified that WHR has relationship with increase of breast cancer (Rus et al, 2007) [10]. O'Neal et al (2015) [11] conducted a research titled as "metabolic syndrome: a more precise look at this increasing disease and damages related to it and showed that obesity is becoming epidemic throughout the world and its growth has been estimated by 1.4 milliard persons per year. Obesity influences on socio-economic aspects and races and it is prerequisite of metabolic syndrome. Metabolic syndrome is a set of risky factors such as central obesity, resistance against insulin and hypertension and risk of affection to type-2 diabetes and cardiovascular diseases is increased. Such conditions are among main causes of mortality in the world and metabolic syndrome increases five times the risk of type-2 diabetes and it increases three times the risk of cardiovascular diseases. Also, cancer has a close relationship with metabolic syndrome including breast cancer, pancreatic cancer, large intestine cancer and hepatic cancer. Stomach obesity has a significant relationship with cardiovascular, digestive diseases and cancers (Eram et al, 2012) [12]. The prevalence of obesity has an obvious increase in recent decade in Iran due to change of life style and nutrition patterns. Studies in different regions of Iran show that the prevalence of obesity in all age groups is older than 15 years and it is two times higher in women than men. On the other hand, metabolic disease in urban societies is more than rural regions (Azizi et al, 2009) [13]. The present research aims to study the prevalence of obesity and demographic factors related to it in 30 to 60-year-old wives of husbands who are working in Oil Company of Shiraz.

## METERIALS AND METHODS

This is a descriptive-analytics and sectional research that studies prevalence of obesity and demographic factors related to it in 30 to 60-year-old wives of staff in Oil Company of Shiraz. At first, by letter of recommendation written from Azad university of Marvdasht to health services centres of Oil Company, necessary permissions were taken from clinics of Oil Company. Then, research instrument was completed by statistical population. Therapeutic centres and hospitals of Oil Company are responsible for admission and hospitalization of the staff of Oil Company and for presentation of required services. The population form was prepared from all wives of the staff in Oil Company of Shiraz and sampling was done randomly. 500 subjects were obtained by the formula. In order to measure the weight, digital scale (with error of 100 g) was used and its validity was confirmed. The accuracy of the scale was re-evaluated by a standard weight after ten times. Weighing was done without shoes with the least cloths. The ratio of waist to the hip was measured in centimetre in standing position with a light and thin cloth such that the waist was measured in the middle part from the lowest rib to the highest part of pelvis and the hip was measured from femur bone then, the ratio of stomach perimeter to hip perimeter will be calculated in centimetre. The weight and height were measured by a skilful person without shoes with light and thin cloths and body mass index was calculated. In order to analyze statistical data, SPSS version 21 was used in addition to Chi-square test, Fisher Exact-test and ANOVA.

## RESULTS

Mean age was 47.3±8.1, mean weight was ± 72±5.6 and mean height was 159.3±5.6. 425 of women were housewives and others had jobs. 425 of women were housewives and others had jobs. Also among the husbands of the women under study, 204 husbands were retired (40.8%) and 296 husbands (59.2%) were still working in Oil company. the salary of 376 persons (75.2%) was monthly higher than three million tomans and others were paid approximately three million

tomans per month. 249 persons (49.8%) did walking continuously as an exercise, 201 persons (40.2%) did no exercises and others did trivial activities such as aerobic and swimming (10%). 31.8% (159 persons) had a degree lower than diploma, 33.4% (167) were diploma and 34.8% had associate degree (53) and bachelor of art (107, 21.7%). Among subjects under study, 34 persons stated that they smoked cigarette or pipe and others did not use any smoke.

**Frequency and its percentage of MBI**

| Body mass | Frequency | Percentage of frequency |
|---|---|---|
| Malnutrition | 15 | 3 |
| Normal | 154 | 30.8 |
| Overweight | 174 | 34.8 |
| Obese | 70 | 14 |
| Type-1 obesity | 66 | 13.2 |
| Type-2 obesity | 21 | 4.2 |
| Total | 500 | 100 |

**Status of illness in statistical population under study**

| Status of illness | Frequency | Percentage of frequency |
|---|---|---|
| Heart disease | 11 | 2.2 |
| Diabetes | 44 | 8.8 |
| Hypertension | 113 | 22.6 |
| Osteoporosis | 14 | 2.8 |
| Anaemia | 11 | 2.2 |
| Osteoarthritis | 4 | 0.8 |
| Others | 214 | 42.8 |
| No illness | 89 | 17.8 |
| Total | 500 | 100 |

**Mean and standard deviation of meat consumption (Kg)**

| Status of body mass | Mean | Frequency | Percentage of frequency |
|---|---|---|---|
| Normal | 449.6 | 119 | 23.8 |
| Overweight | 459.5 | 221 | 44.2 |
| Obese | 610.9 | 160 | 32 |
| total | 505.6 | 500 | 100 |

## DISCUSSION

Results showed that in women who have a job, MBI is more normal than housewives. The difference is significant in P <0.05 level and the job may be effective on control of MBI. Such an effect may help women to have an acceptable appearance among colleagues. Since working women spend most of their times in their work place, they have more normal MBI than housewives because such women are more active and they are more familiar with types of diets. Results of this research are in agreement with those of Akhavan Tabib et al (2001) [2] who indicated that 62% of working women had a normal MBI and the results are not in agreement with results of Vahab et al (2011) [14] who showed that working women are fatter than housewives due to inactivity. Also, results indicated that wives of retired men had more normal MBI than those whose husbands were working. This difference is significant (P< 0.05) and it is possible that the job of their husbands is effective on controlling their MBI such that wives of retired men were not fatter than wives of working men. These results can be explained by higher incomes of wives of working men than wives of retired men, inactivity of wives of working men and lack of consideration of diet. Results of this research are in agreement with results of Tandon et al (2011) [15] who indicated that obesity in working families is higher than unemployed families and the results are not in agreement with results of Mikola et al (2011) [16] who indicated that there is no difference between jobs of fathers of soldiers and MBI. Results showed that women with university educations had more normal MBI than women with lower education. This difference is significant in P<0.05 level. Based on results, it is possible that women with higher education keep their BMI more normal due to higher knowledge and culture and they try to prevent obesity and control their diet. These results are not in agreement with results of Vahab et al (2011) [14] who indicated that there is no difference between education and MBI but the results were in agreement with results of Mahmoudi et al (2015) [3] who indicated that dentistry and medical students have more ideal MBI than Paramedical students. Results showed that women who smoke pipe (although their number is low) had an ideal MBI. This difference was not significant (P<0.05). It is possible that smoking can change normal form of body mass of women resulting in losing ideal state of the weight to

height square ratio. These results are in agreement with results of Moghimi Dehkordi et al (2012) [4] who indicated that there is a difference between smoking and BMI but results are not in agreement with results of Vahab et al (2011) [14]. Results showed that women who were doing an exercise during the week have more normal MBI than those who did not exercise. This difference was significant in P<0.05. It is possible that sport is effective on ideal weight and BMI of women and prevents from bad appearance. Sport is effective on natural state of physio-chemical factors and brings about health and freshness. These results are in agreement with results of Pourtaghi et al (2013) [5] who revealed that military forces have a normal weight due to morning exercise but results are not in agreement with results of Shiades et al (2009) [17] who indicated that there is no difference between morning exercise and MBI. Results revealed that in healthy women, BMI is more normal than that of ill persons. In order to cope with pathogenesis that occurs in women more than men, it is necessary to consider diets proportional to BMI, exercise especially walking and so on and to increase freshness and pleasure among them. This difference was significant in P <0.05. These results are in agreement with results of Ayatollahi (2010) [18] who indicated that MBI of healthy women is more ideal than ill women and women with cardiac diseases are more subject to obesity. Also, results are in agreement with results of Hu et al (2011) [19] who studied obesity in teenagers and revealed that obesity is more prevalent in patients than in those with normal weight. The present research aims to study prevalence of obesity and demographic factors related to it in 30 to 60-year-old wives of staff in Oil Company of Shiraz.

## CONCLUSION

Results showed that regarding the relationship between obesity and demographic factors, there is a significant relationship (in P<0.05) between BMI of women and their job, husband's job, education, exercise, type of illness.

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