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PREVALENCE OF OBESITY AMONG WORKERS IN FAMILY MEDICINE CENTERS IN NINEVEH PROVINCE

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ABSTRACT

Background: Obesity and overweight have become serious global health concerns in recent years. Adults with a body mass index (BMI) of 30 kg/m^2 or higher are classified as obese, and they are more likely to develop diabetes, osteoarthritis, and cardiovascular disease. This has led to increased recognition for the profession of bariatric medicine, which focuses on the causes, prevention, and treatment of obesity. **Objectives:** Is to establish the prevalence of obesity among all family centers workers and to explore their attitude toward issues related to obesity. **Methods:** This is a retrospective, descriptive cross-sectional study, it was conducted from January 2023 to the end of December 2023. Data collection and follow up of patients were clinically carried out at all family centers in Nineveh province including eleven family centers. All medical workers aged 18 years and more who were employed at the health centers under study were included. The questionnaire includes two parts; part one for socio-demographic information and part two for specific anthropometric measurements. **Results:** The study sample composed of 640 members. The present study found out that 412 (64.37%), 129 (20.16%) and 99 (15.47%) members of the study sample were normal (BMI 18.5-24.9), overweight (BMI 25-29.9) and obese (BMI ≥30), respectively. Class 1 obesity counted 70 and formed 70.70% of total obese, and 10.94% of the total population of the study sample. Class 2 obesity counted 19 and formed 19.19% of total obese, and 2.95% of the total population of the study sample. While, those obese of class 3 obesity formed 10.10% of total obese, and 1.56% of the total population of the study sample. It is evident that females had more prevalence of overweight and obesity than males. Moreover; the majority of the study participants are married, having post-secondary school education, having family history of obesity, and not smoker. The majority of obese patients agree with the idea that obesity is a disease, and thought that their food is unhealthy for obese patients, and eat fast food more than 5 times per week for obese patients. Additionally; obesity is inversely proportional to time expend for exercise. **Conclusion:** The increasing rates of obesity with age may represent the accumulation of unresolved risk factors with age. It is clear from the lower rates of family history of obesity among normal participants in comparison to higher rates of that history among the overweight and the obese that genetic factors may have a role in the causation of obesity. Unexpectedly, overweight and obese people in study sample, in spite of their awareness toward their food but they may not have the desire to modify their diet or to change their lifestyle.

KEYWORDS: Metabolic syndrome, Health staff, Mosul, Iraq.

1- INTRODUCTION

Obesity and overweight have become serious global health concerns in recent years.[1-2] Obesity is defined by the World Health Organization (WHO) as an excessive accumulation of body fat that can affect health and lead to a number of medical problems.[3] Adults with a body mass index (BMI) of 30 kg/m^2 or higher are classified as obese, and they are more likely to develop diabetes, osteoarthritis, and cardiovascular disease.[4] This has led to increased recognition for the profession of bariatric medicine, which focuses on the causes, prevention, and treatment of obesity.[5] From early 1980 onwards, the prevalence of overweight and obesity became a significant global issue. In low- and middle-income countries, the percentage of obese and overweight individuals was as high as 12% and 28.8%,

respectively.[6] Iraq has the 23rd highest obesity rate in the world, with 30.4% of the population being obese.[7]

In the Eastern Mediterranean, eating habits, a sedentary lifestyle, stunting, the encouragement of high-fat foods, and perceived body image are all potential risk factors for obesity.[8] Furthermore, the likelihood of being overweight or obese may rise with age, being a woman, having a higher socioeconomic class, being illiterate, being married, and living in an urban area.[9-10] According to various studies, smoking has a negative correlation with being overweight or obese, whereas unhealthy eating habits, such as consuming meals high in fat and sugar or not eating enough vegetables and fruits, as well as a lack of physical activity, have a positive correlation with these conditions.[11-12] According to a systematic review, depression raised the risk of becoming obese.[13]

From the other hand; healthy diet, lifestyle choices, and adequate nutrition can help people overcome obesity.[14] Nowadays, a lot of obese patients think that their inability to control their diet is the cause of their obesity.[15]

The aim of this study is to establish the prevalence of obesity among all family centers workers and to explore their attitude toward issues related to obesity.

2- PATIENTS AND METHODS

After obtaining ethical approval from the ethical committee of Nineveh Health directorate. A retrospective, descriptive cross-sectional study was conducted, from January 2023 to the end of December 2023. Data collection and follow up of patients were clinically carried out at all family centers in Nineveh province including eleven family centers, which are: Alquds, Alzuhoor, Alaqsa, Alqadisiyah, Alarabi, Tamooz, Alhadba, Almansoor, Almuhalibiyah, Alhamdaniya and Alqush family health centers.

The sample size has been determined by choosing the whole community of workers aged 18 years and more who were employed at the health centers under study. They were 640 workers.

The questionnaire includes two parts; part one for socio-demographic information and part two for specific anthropometric measurements. Statistically analysis done by using SPSS 30.0 software application.

3. RESULTS

The study sample composed of 640 members. The present study found out that 412 (64.37%), 129 (20.16%) and 99 (15.47%) members of the study sample were normal (BMI 18.5-24.9), overweight (BMI 25-29.9) and obese (BMI ≥30), respectively as shown in figure 3.1.

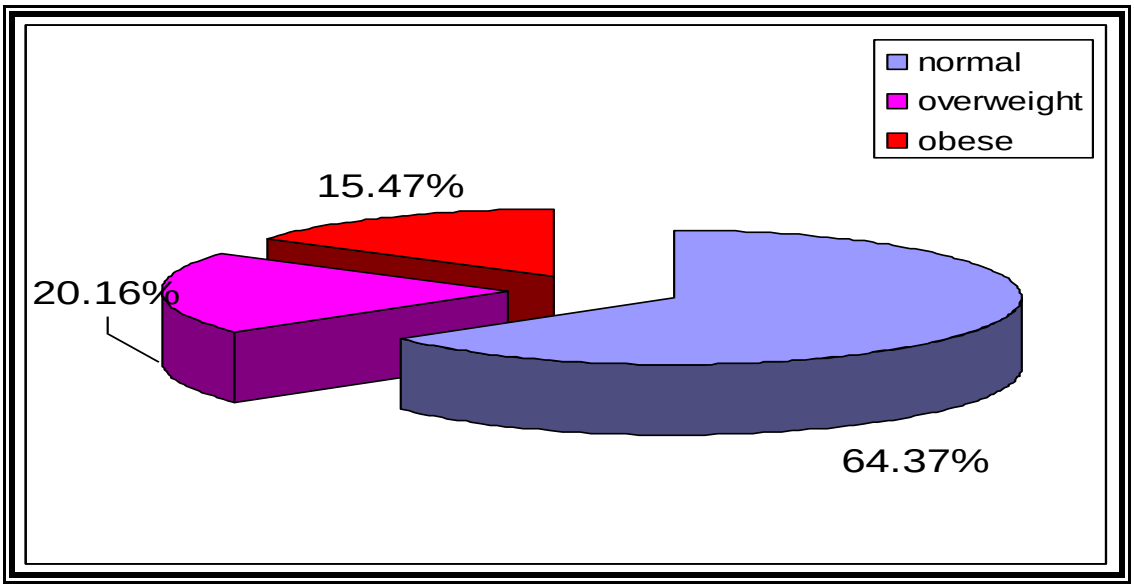

Figure 3.1: Distribution of study population according their BMI.

Figure 3.2 demonstrates the classification of obese participants. Class 1 (with BMI ranging from 30-34.9) counted 70 and formed 70.70% of total obese, and 10.94% of the total population of the study sample. Class 2 (with BMI ranging from 35-39.9) counted 19 and formed 19.19% of total obese, and 2.95% of the total population of the study sample. While, those obese of class 3 (with BMI more than 40 or more) formed 10.10% of total obese, and 1.56% of the total population of the study sample.

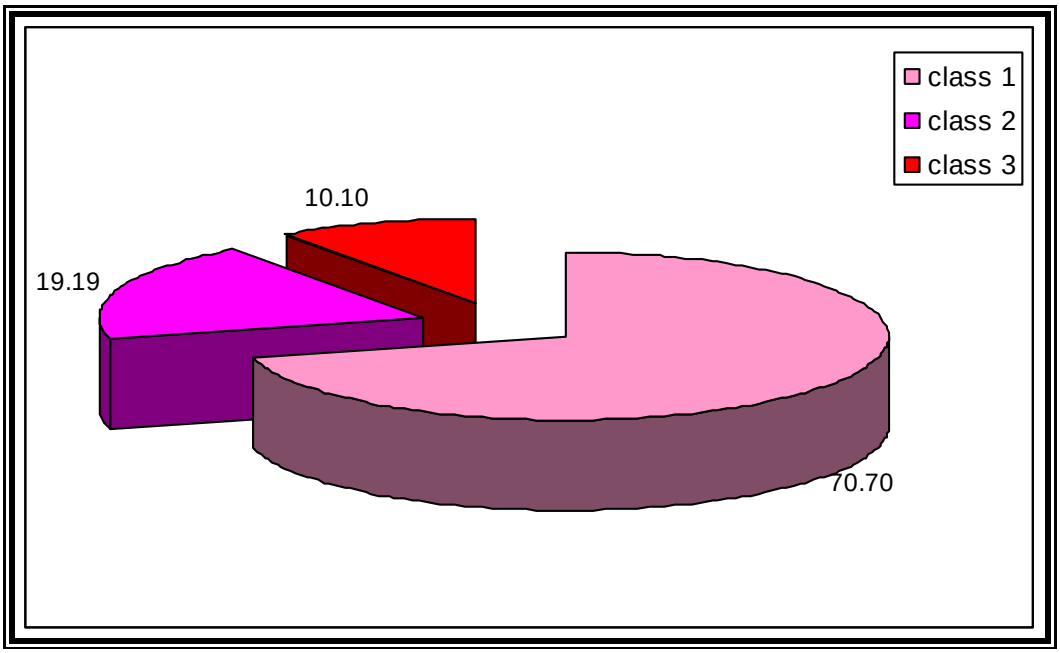

Figure 3.2: Distribution of obese participants according their class of obesity.

Figure 3.3 shows that age has been distributed into four categories 18-27, 28-37, 38-47 and 48 years and more, that composed of 96,188, 226 and 130 participants respectively.

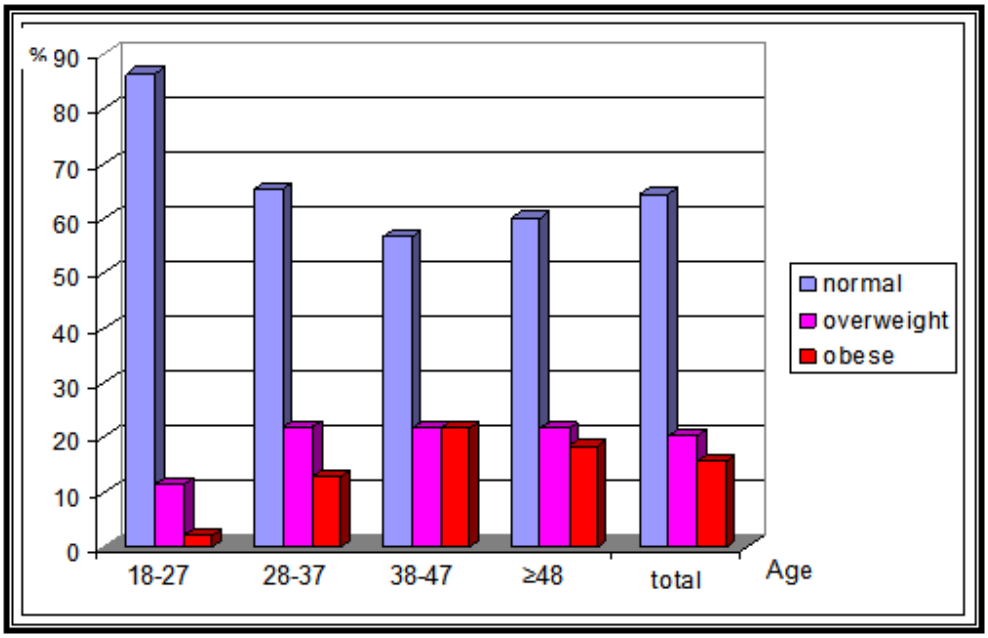

Figure 3.3: Distribution of study population according to age group and BMI.

Table 3.1 shows distribution of the study participants according to their socio-demographic information by BMI. It is evident that females had more prevalence of overweight and obesity than males. Moreover; the majority of the study participants are married, having post-secondary school education, having family history of obesity, and not smoker.

Table 3.1: Distribution of the study participants according to their sociodemographic information by BMI. (Numbers = 640).

Variable	Normal (BMI 18.5-24.9)		Overweight (BMI 25.0-29.9)		Obese (BMI 30≥.)	
	No.	%	No.	%	No.	%
Gender:						
- Male	225	69.44	58	17.90	41	12.65
- Female	187	59.18	71	22.47	58	18.35
- Total	412	64.37	129	20.16	99	15.47
Marital state:						
-Single	135	90.00	11	7.33	4	2.67
-Married	251	56.91	103	23.36	87	19.73
-Divorced	18	66.67	6	22.22	3	11.11
-Widowed	8	36.36	9	40.91	5	22.73
-total	412	64.37	129	20.16	99	15.47
Level of education:						
-Primary	41	67.21	13	21.31	7	11.47
-Secondary	124	53.45	51	21.98	57	24.57
-Post-secondary	247	71.18	65	18.73	35	10.09
-Total	412	64.37	129	20.16	99	15.47
Family history of Obesity:						
-Present	175	54.86	81	25.39	63	19.75
-Absent	237	73.83	48	14.95	36	11.21
-Total	412	64.37	129	20.16	99	15.47
Smoking habit:						
- Smokers	42	56.76	19	25.68	13	17.58
- Non-smokers	183	73.20	39	15.60	28	11.20
- Total	225	69.44	58	17.90	41	17.90

Table 3.2 explores that study participant ideas about obesity, the majority agree with the idea that obesity is a disease, and thought that their food is unhealthy for obese patients, and eat fast food more than 5 times per week for obese patients.

Table 3.2: Distribution of the study participants according to their ideas and frequency of fast food by BMI. (Numbers = 640).

Variable	Normal (BMI 18.5-24.9)		Overweight (BMI 25.0-29.9)		Obese (BMI 30≥.)	
	No.	%	No.	%	No.	%
Thinking about obesity as a disease or not a disease:						
- Disease	399	65.52	117	19.21	93	15.27
- Not a disease	13	41.94	12	38.71	6	19.35
- Total	412	64.37	129	20.16	99	15.47
Thinking about the food eaten as healthy or unhealthy:						
-Healthy	295	81.04	41	11.26	28	7.69
-Unhealthy	117	42.39	88	31.88	71	25.72
-Total	412	64.37	129	20.16	99	15.47
Frequency of fast food eating per week:						
- 0-1	279	90.58	17	5.52	12	3.90
- 2-3	82	67.21	24	19.67	16	13.11
- 4-5	39	36.11	41	37.96	28	25.92
- More than 5	12	11.76	47	46.08	43	42.16
- Total	412	64.37	129	20.16	99	15.47

Table 3.3 shows distribution of the study participants according to their physical activity and time spend for walking per day, most of the study participants reported no physical activity, and the obesity is inversely proportional to time expend for exercise.

Table 3.3: Distribution of the study participants according to their physical activity and time spend for walking per day. (Numbers = 640).

Variable	Normal (BMI 18.5-24.9)		Overweight (BMI 25.0-29.9)		Obese (BMI 30≥.)	
	No.	%	No.	%	No.	%
Frequency of physical exercise hours per week:						
- 0	144	48.32	84	28.18	70	23.48
- 1	128	73.14	29	16.57	18	10.28
- 2-3	87	81.30	12	11.21	8	7.47
- 4-5	34	87.17	3	7.69	2	5.12
- More than 5	19	90.47	1	4.76	1	4.76
- Total	412	64.37	129	20.16	99	15.47
Time in minutes spent in walking per day:						
- 1-15	93	45.36	61	29.75	51	24.87
- 16-30	101	57.06	41	23.16	35	19.77
- 31-60	108	79.41	19	13.97	9	6.61
- More than 60	110	90.16	8	6.55	4	3.27
- Total	412	64.37	129	20.16	99	15.47

4. DISCUSSION

Obesity is prevalent among (15.46%) of health workers participating in this study. Which is less than what was found by Supa Pengpid et al (33.9%) in general Iraqi people.[16] However; the prevalence of obesity among Iraqi health workers was not estimated yet. Moreover; in the current study, females had more obesity than males, which is goes with Muthana Abdulrazzaq Jabbar et al study findings.[17] Additionally; this study found that; the prevalence of obesity decreases with advancing BMI class which is consistent to Connor B. Weir et al study findings.[18] Furthermore; the study found obesity was more prevalent among middle to elderly people more than young. Which is due to decrease metabolism with advancing age. Which is runs with Craig M. Hales et al study findings.[19]

In this study, obesity is more prevalent among married persons. While; this relationship isn't definitively established as a direct cause, several factors suggest a connection, including changes in lifestyle, diet, and physical activity after marriage. Which is parallel to Tamara Nikolic Turnic et al systemic review and meta-analysis.[20] From the other hand; post-secondary education person found to have more obesity than those of less than secondary level of education, which is similar to Ziyad Shwaish wt al study results.[21] Family history of obesity was found in the majority of patients with obesity. Due to shared family behaviors and the home environment also influence weight. Comparable findings were obtained from Domenico Corica et al.[22] Smoking found in this study to have no clear relationship with obesity, Ibrahim A. Ginawi et al had comparable results.[23]

The study found that most of obese patients think that obesity is a disease and their food was unhealth with their obesity been related to high number of fast foods took per week. This is aligning with both scientific understanding and public awareness. Comparable results were obtained by Moustafa Alhashemi et al.[24]

Regarding physical found in this study to be inversely related to obesity, in same way; Salhah Alsulami et al had comparable conclusion.[25]

The study has certain limitations because it is retrospective in nature which might vulnerable to recall or intentional bias. Additionally; small sample size makes comparison between the study subgroups more liable for bias.

5. CONCLUSION

The increasing rates of obesity with age may represent the accumulation of unresolved risk factors with age. However, genetic factors cannot be excluded from being behind the increase of obesity with age. It is clear from the lower rates of family history of obesity among normal participants in comparison to higher rates of that history among the overweight and the obese that genetic factors may have a role in the causation of obesity. Unexpectedly, overweight and obese people in study sample were more aware about their food and they marked it as unhealthy. This indicates that in spite of their awareness toward their food but they may not have the desire to modify their diet or to change their lifestyle.

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Conflict of intertest

About this study, the authors disclose no conflicts of interest.

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