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Associated risk factors and lifestyle behavior for obese women during reproductive age in Al Dawadmi, Saudi Arabia

Atallah Alenezi [1] and Entesar M.M. Makhlouf [2,3]

[1]Mental Health Nursing College of Applied Medical Sciences, Shaqra University, **Kingdom of Saudi Arabia**
[2]Department of Maternity, Obstetrics & Gynecological Nursing, College of Applied Medical Sciences, Shaqra University, **Kingdom of Saudi Arabia**
[3]Department of Maternity, Obstetrics & Gynecological Nursing, Faculty of Nursing, Assiut University, **Egypt**

***Correspondence:** e.makhlouf@su.edu.sa **Received 11-03-2020, Revised: 10-04-2020, Accepted: 12-04-2020 e-Published: 16-04-2020**

To determine the prevalence of Obesity and overweight among Saudis females, during reproductive age, to determine its risk factors & lifestyle behavior of Obesity in Al Dawadmi city Saudi population. Finally make health educational intervention about Obesity for women. This study is descriptive cross-sectional study was conducted in Aldawadmi governorate, by examining women in the age group of 18-55 years included 500 women from the general public were given questionnaires regarding the details of their lifestyle patterns, Stepwise approach to non-communicable diseases' 304 (60.8%) study subjects fell within the 20–40-year age range. Also, most of women length between 150 cm to 160 cm comprised (13.8%) and employees comprised 64.6% of the total population. According to the statistics, rate of obesity is 38%, first class estimated 53% of obesity while class 3 estimated 4%. the relations between the BMI with the different categories of study subjects and the presence of obesity and overweight were found to be highly statistically significant. Obesity is regarded as one of the most common health issues in different parts of the world. The obesity prevalence in Aldawadmi city, KSA were 38% and overweight representing 17%.

Keywords: Obesity, overweight, Lifestyle, Reproductive Age, Body mass index Saudi, Guideline.

INTRODUCTION

In recent decades, overweight and Obesity have expanded significantly around the world. The rising pattern of Obesity shows that this expansion isn't just confined to the developed world, yet additionally stretching out towards the developing world. In the unique circumstance, Saudi Arabia is currently among the countries with the highest Obesity and overweight prevalence rates because of various factors (Al Hazzaa HM, Abahussain NA, 2014). Many types of research intended to assess the prevalence of Obesity in Saudi Arabia based on the findings and of previous researches (Al Hazzaa HM, Abahussain NA,2012).The researches show that the rate is high in the nation among various age groups and occupations; at various areas in the nation; and among both gender. The main factors causing Obesity include family history, diet and lifestyle patterns, hereditary elements, marital status, hypertension, and absence of physical exercises; while, the significant outcomes are cardiovascular disorders, diabetes, malignancies, and Ischemic coronary illness (Al Mohaimeed A, et al 2015).

Obesity is considered as a medical problem that fat ratio has accumulated to the extent that it might negatively affect well-being, leading to reduced life expectancy and/or increased health

problems (Al Nozha MM, et. al. 2005).Western nations, the Obesity defined when their body mass index (BMI), an estimation acquired by partitioning a human's weight by the square of the human's length, if the result more than 30 kg/m2, and overweight from the 25 to 30 kg/m2. Some East Asian nations utilize stricter criteria (Al Othaimeen A, et.al.2007). Obesity is an unwanted result of changing the way of life and practices. It is additionally a reversible related factor for the improvement of several debilitating diseases.

General well-being experts agree that overweight and Obesity have arrived at epidemic proportions in right now. General well-being authorities state physical latency and poor diet, also tobacco as a critical danger to well-being. (Al Qwaidhi A, et al. 2014).

As opposed to its consequences for different regions of well-being, the effect of Obesity on fertility has gotten less consideration. Right now, we survey both the impact of weight on reproductive performance by which Obesity applies its unfriendly impacts. Understanding these issues focused on treatments to be created to improve reproductive health between the obese and their offspring. Maybe the most entrenched association among obesity and reproductive issues is the connection between Obesity and infertility, as investigated by Brewer and Balen (2010).(Al zahrani AA, et al. 2016).

Obesity diminishes good pregnancy rates in both normal and assisted conception cycles, with fertility being somewhat reestablished if weight reduction can be accomplished. The mechanism(s) by which Obesity decreases pregnancy rates are intricate and likely multifactorial. Insulin obstruction seems, by all accounts, to be a key factor to obesity-induced ovulation, with significant levels of insulin prompting low degrees of sex hormone-restricting globulin, hyperandrogenemia, and elevated levels of free insulin-like development factor. (Azzam Al, et al .2018).

Obesity is a lot of a psychological as a physical issue. Psychological issues can portend the advancement of Obesity, yet they can likewise follow progressing battles to control weight. Since the psychological relations of Obesity are so significant, psychological evaluation and actions have become a fundamental step of a multidisciplinary way to deal with treating Obesity, which incorporates the utilization of bariatric medical procedures. (Al sheheri A, et., al., 2018).

Literature Review of the Research

Obesity is an unwanted result of changing the way of life and practices. It is additionally a reversible inclining factor for the improvement of a few crippling diseases. Obesity increases the probability of different illnesses, especially obstructive sleep apnea, specific sorts of malignant growth, and osteoarthritis (Azzam Al, et., al., 2018).Obesity is most ordinarily brought about over eat intake, absence of physical movement, and hereditary factors, endocrine issues, medications, or psychiatric. Proof to help the view that some obese individuals eat pretty much nothing yet put on weight because of moderate digestion is constrained. (Twells LK, et al.2014). Obese individuals have more vitality use than their thin counterparts' partners because of the vitality required to keep up an increased body mass, In 2008, WHO reported that 1.5 billion adults were overweight, were 300 million ladies and more than 200 million men were obese. .(Sabra AA, 2014). Obesity has an effect on the reproductive condition. It impacts not only the rate of conception but also the response to fertility rate and elevates the danger of miscarriage, congenital anomalies, and pregnancy complications in addition to potential adverse effects on long term health of both mother and infant .(Saad Salman M. Alqarni, 2016).Women should become a normal BMI before starting any form of fertility treatment. Treatment ought to be conceded until the BMI is less than 35 kg/m2; in spite of the fact that in those with additional time (e.g., under 37 years; ordinary serum FSH focuses), a weight decreases to a BMI of less than 30 kg/m2 is ideal. Clinicians ought to consider conceding treatment to ladies outside these rules. Ladies ought to be given help to get fit, including psychological help, dietary counsel, practice classes, and where proper, weight decreasing specialists or bariatric medical procedures. Indeed, even a moderate weight reduction of 5-10% of body weight can be adequate to reestablish fertility and improve metabolic markers (De Nicola, et al.2015).

Slimming or trimming down, exercise and activity are the fundamental interactions for the reduction of weight. Diet quality can be pitter by decreasing of thick vitality nourishments, for example, those high in fat and sugars, and by expanding the admission of dietary fiber. With a reasonable eating routine, the drug might be taken to diminish hunger or decrease fat absorption. In the event that diet, exercise, and drugs are not compelling, an inflatable may help

with weight reduction, or medical procedure might be performed to decrease stomach volume as well as inside length, prompting feeling full prior and a decreased capacity to ingest supplements from food (EL Nashar DE, et al. 2016).Obesity is a main preventable reason for death around the world, with expanding rates in adults and children. Specialists see it as one of the most genuine general medical issues of the 21st century.(Elbadawi AS, et al. 2015). Obesity is vital in a great part of the advanced world (especially in the Western world). However, it was broadly observed as a sign of wealth and fertility at different occasions in history and still is in certain pieces of the world (Haslam DW, and James.WP, 2005).In 2013, the American Medical Association obesity as a disease, modification of the lifestyle in the form of dietary therapy, and increased physical activity can treat Obesity to a large extent (Horabi GB, et.al. 2005).Nevertheless, achieving clinically significant weight loss is always daunting for both patients and physicians (Khan F., 2014). Knowledge and encouragement are the basic necessities to effect a change in behavior. Kushner, Robert (2007). Explores the prevalence of Obesity among university students in Jeddah, KSA, and tests their attitude to risk factors linked to cardiovascular disease (CVD) Using data from 610 students, the researchers found that 7.9 percent of students are severely obese, 10.7 percent are moderately obese, 29.8 percent overweight and 7.5 percent hypertensive. In fact, the respondents found Obesity strong. (Azzam Al, et al. 2018).

Saudi Arabia is experiencing a rising epidemic of Obesity, which needs an emphasis on healthy eating habits that physicians should encourage and facilitate. It is possible that the importance of proper nutrition would be successfully counseled by physicians taking healthy diets themselves. According to data from the World Atlas, Saudi Arabia is in the list of the world's most obese counties, which resulted from less regular exercise or physical activity, increased Western fast food consumption, and the use of large community plates (LeFevre, M L., 2014).

As indicated by Mahmood and Arulkumaran, the quick development in the pace of Obesity is directly contributed by natural and social components, as opposed to the biological elements. Besides, racial or ethnic contrasts, utilization patterns, and ways of lifestyle impact the rate of Obesity. For example, when contrasted with rural areas, individuals in urban territories have higher obesity rate, conceivably because of utilization of high-fat eating regimens and increasingly sedentary life. For day by day living, the measure of energy spent has additionally diminished throughout the years, which likewise advances Obesity. Obesity is additionally regularly connected with high financial status, as individuals in the developed world are, for the most part, influenced by Obesity (Memish ZA,et al.2014).

In the course of recent decades, Saudi Arabia has gotten progressively westernized, and now it has one of the most elevated Obesity and overweight prevalence rates (Yosipovitch G, et al. 2007). Obesity in the region is a significant reason for concern, where 7 out of 10 individuals are encountering the issue (WHO, 2014) Past investigations identified with the prevalence of Obesity in the Kingdom of Saudi Arabia (KSA) show an expanding pattern in Obesity and overweight, which are significant wellsprings of various different diseases, including hypertension, diabetes, obstructive rest apnea, hyperlipidemia, and osteoarthritis (Rucker D,2007).

Obesity in Saudi Arabia is a developing health problem with well-being authorities expressing that it is one of the main sources of preventable deaths in Saudi Arabia. As per Forbes, Saudi Arabia positions 29 on a 2007 rundown of the fattest nations with a level of 68.3% of its residents being overweight (BMI>25). (Thangaratinam S,et al. 2012) Compounding the issue, as per an introduction at the third International Obesity Conference in February 2014, is that obesity-related medical procedures are not secured under Saudi healthcareWorld Obesity Rates shows that Saudi Arabia is the world's fifteenth most obese country, with a general Obesity pace of 33.7%. Information Source: .(Yanovski SZ, and Yanovski JA , 2014).

MATERIALS AND METHODS

Research Problem:

Obesity and overweight are well-known risk factors for coronary artery disease (CAD) and are expected to increase especially among females during reproductive age in the KSA.

Research Objectives:

The objective of this study is:

1-To determine the prevalence of Obesity and overweight among Saudis females, during reproductive age.

2-To determine its risk factors & lifestyle behavior of Obesity.

3-Make health educational intervention about Obesity for women in Al Dawadmi, Saudi population.

Research Significance:

Obesity and overweight increased with an overall obesity prevalence of 35.5 % in KSA. Reducing overweight and Obesity is of considerable public health importance. Therefore, we suggest a national community-level obesity prevention system to be introduced earlier to encourage leaner and, therefore, safer population.(WHO , 2016 and World Atlas, 2016)

Methodology:

This study is descriptive cross-sectional study was conducted in Aldawadmi city by examining Saudi women in the age group of 18-55 years The study included 500 women from the general public of Aldawadmi city Riyadh, Saudi Arabia, in urban and rural areas. Who were selected by convenient sampling at a female a public sector and were given questionnaires regarding the details of their lifestyle patterns, Stepwise approach to non-communicable diseases' risk factor surveillance, the studied variables included demographic details, dietary habits, physical activity, occupation, body mass index, and unhealthy behavioral habits.

Data collection instruments included a questionnaire, which consisted of different types of questions, including multiple choices, open-ended, and closed questions. Most of the questions are presented in multiple-choice answers, which may be quickly answered by ticking the appropriate boxes. Each question needs one response, and every response will be considered as one. The researches make some changes in the appendix. Obtain opinions of five expertises in nursing practice to check the validity of questionnaires and the effectiveness of achieving aims of the study. A pilot study was carried out

Data are collected by the researcher from dispensary, Shaqra university campus, a female teacher in schools and hospital, prior to distribution of the questionnaire, conduct by examining Saudi women during reproductive age group of 18-55 years Aldawadmi, KSA. The Body Mass Index (BMI) investigated and analyzed to determine the prevalence of overweight (BMI = 25to29.9 kg / m2), obesity (BMI > /=30 kg / m2) and severe (gross) obesity (BMI > /=40 kg / m2) in KSA.

Second step: The educational intervention was given for the theoretical part, which included knowledge about Obesity, the practical part of the study which demonstrates exercises and lifestyle data. Also, the researchers have distributed a learning package to the women. Accordingly, an educational booklet about Obesity is developed. The steps of developing the educational booklet's content included the following:

1.Setting the objectives of the educational booklet.
2.Writing the content of the educational booklet
3.The developed educational booklet about Obesity consists of 10 pages. The clarity and sequence of content are checked by the same expertise, and the booklet is supplemented with the needed illustrations and pictures.

Statistical analysis:

Women's data were analyzed by SPSS version 20. The information taken was coded, analyzed, and arranged. Descriptive analysis was done in this research, including frequencies and rate, additionally utilizing the mean, standard deviation, t-tests.

Ethical considerations:

Before directing this research, ethical clearance was taken from an institutional review board, Shaqra research unit, there were no risks can affect the women during the application of the study. Informed consent was acquired, and the women were resting assured of namelessness and confidentiality. All women shared voluntarily after being briefed in full. No psychological harm was foreseen as it was not possible to link any response to a specific individual.

RESULTS

A total of 500 females were included in the study, including women of the general public from all walks of life as well a Shaqra university, students, schools' teachers, dispensaries (west, south, east, and Almalik Fahd) and Aldawadmi hospital in the same area. All of the study subjects were Saudi nationals with reasonable qualification levels (minimum illiterate to University or above level). Their ages ranged from 18-55 years, 304 (60.8%) study subjects fell within the 20–40-year age range.

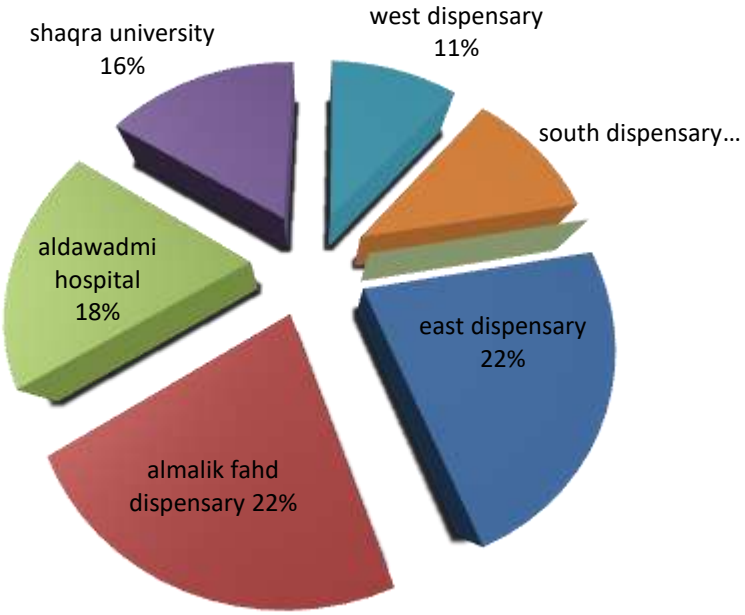

Figure 1: Distribution of the sample according to place

Table 1. Characteristics of the sample (n=500).

Variable	Estimated results
Demographic:	
Age	50 (10%)
<20	304 (60.8%)
20-40	146 (29.2%)
>40	
Residence	
-Urban	42 (8.4%)
-Rural	452 (91.9%)
Occupation	
1 - Housewife	177 (35.4%)
2-employees	323 (64.6%)
- Officer	76 (15.2%)
- Teacher	74 (14.8%)
- Nurse	84 (16.8%)
- Staff member	60 (12%)
-Student	29 (5.8%)
Height	
>150	113(22.6%)
150-160	309 (61.8%)
160-170	69 (13.8%)
<170	9 (1.8) %
Level of education:	
Illiterate	14(1.2%)
Primary&Preparatory	154 (30.8%)
Secondary	36 (7.2%)
Bachelor or above	296 (59.2%)

Also, most women's lengths between 150 cm to 160 cm comprised (13.8%), and employees comprised 64.6% of the total population, as shown in Table 1, which lists demographic details relevant to the study. Figure 1: Including women of the general public from all walks of life as well as shaqra university, students, schools' teachers, dispensary and Aldawadmi hospital in the same area. 22% from the sample were in Almalikfahd dispensary the same East dispensary.

Table 2. Distributions of the sampleregards to pregnancy and childbirth (n=500).

Variable	Estimated results
Number of pregnancies	
Nulligravid	87 (17.4%)
<2	44(8.8%)
2-4	124 (24.8%)
≥5	245 (49 %)
Normal vaginal delivery	
< 2	77 (15.4%)
2-4	32 (6.4%)
≥5	184 (36.8%)
Caesarean-section delivery	
<2	117 (23.4%)
2-4	102 (20.4%)
≥5	00 (20 %)
Number of abortions	
<2	124 (24.8%)83 (16 .6%)
2-4	
≥5	35 (7 %)

As shown in table 2 there were (17.4%) from women were nulligravida and (49 %) had more than 5 pregnancy. Also, 58.6 % had normal vaginal delivery comprised (63.8%) had caesarean-section delivery. While abortion was more than 5 time comprised (7 %).

Figure 2: in this figure shows the obesity prevalence in Aldawadmi city, KSA. According to the statistics, rate of obesity is 38% and overweight represent 17%. Figure 3: In this figure show the prevalence of Obesity, Aldawadmi, KSA. According to the statistics, first class estimated 53% of obesity while class 3 estimated 4%. Table 3 & 4 illustrated the relations between the BMI with the different lifestyle behavior and the presence of obesity and overweight were found to be highly statistically significant. The eating habits of vast majority of the subjects were found to be unhealthy; their diet mostly comprised fast foods instead of a healthy and balanced diet,

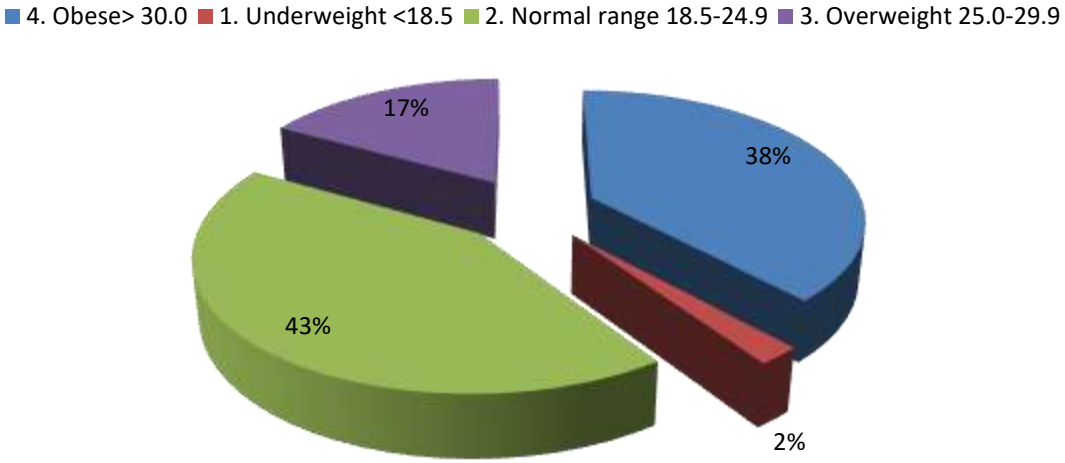

Figure 2: Classification of body mass index BMI (kg/m)2 among the study subjects

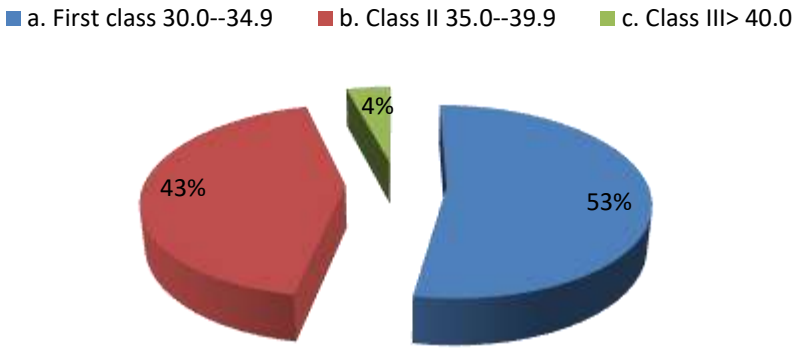

Figure 3: Prevalence of Obesity

Table 3: The relation between lifestyle behavior and BMI

Women lifestyle	Classification of BMI n= 500												p-value
	Underweight N=11			Normal range N=214			Overweight N=84			Obese N=191			
	agree	Neutral	Not agree	agree	Neutral	Not agree	agree	Neutral	Not agree	agree	Neutral	Not agree	
	%	%	%	%	%	%	%	%	%	%	%	%	
Is the obesity transmitted by heredity?	81.8	0	18.2	52.8	15.4	31.8	50	44	6	56.5	33.5	9.9	0.005
Are surgeries one of the easiest ways to lose weight?	54.5	45.5	0	48.6	23.8	27.6	27.4	34.5	38.1	51.3	33.5	15.2	0.000
People with extra weight are more likely to develop diabetes and high blood pressure than others?	54.5	0	45.5	79.9	7	13.1	67.9	15.5	16.7	81.2	18.8	0	0.002
Is our presence in the country of ease and speed increases obesity prevalence	100	0	0	79.4	15	5.6	73.8	15.5	10.7	86.9	6.3	6.8	0.01
Is the weight loss drugs help in weight?	18.2	54.5	27.3	31.8	34.1	34.1	20.2	50	29.8	26.7	46.6	26.7	0.07
Are you from the type who eats food while watching TV, working on the computer, or others?	0	81.8	18.2	11.6	49.5	38.7	10.7	32.1	57.1	24.1	53.4	22.5	0.000
Do you sleep directly after eating some meals?	45.5	27.3	27.2	34.1	50.9	15	54.8	39.3	6	55	28.3	16.8	0.000

Table 4: The relation between lifestyle behavior and BMI

Women lifestyle	Classification of obesity n= 500												
	UnderweightN=11			Normal rangeN=214			OverweightN=84			ObeseN=191			p-value
	Usually	Some times	rarely	Usually	Some times	rarely	Usually	Some times	rarely	Usually	Some times	rare	
	%	%	%	%	%	%	%	%	%	%	%	%	
Do you prefer fast food?	18.2	36.3	45.4	47.6	45.3	7	29.7	48.8	21.4	56.5	13.6	37.7	0.000
Do you have a healthy breakfast during the day?	18.2	36.3	45.4	47.6	45.3	7	29.7	48.8	21.4	56.5	13.6	37.7	0.000
Are you keen to eat healthy and balanced food	27.2	0	72.7	24.7	60.7	14.5	11.9	70.2	17.8	46.5	43.9	9.4	0.000
Do the meals you eat contain a high percentage of proteins	63.3	27.2	9.1	35.5	28.9	35.5	28.5	45.2	26.1	54.9	38.7	6.2	0.000
Does your diet contain a high percentage of carbohydrates	0	100	0	41.1	57.9	0.9	19.1	70.2	10.7	26.1	31.9	41.8	0.000
Do the food you eat contain a high percentage of fat	45.4	45.4	9.1	43.4	27.5	28.9	14.2	50	35.7	18.3	28.7	43.4	0.000
Do you get adequate amounts of vitamins in your meal?	18.2	81.8	0	46.2	39.7	14.1	23.8	58.3	17.8	50.2	36.6	13.1	0.000
Do you eat sweets and sugars at a high rate?	45.4	9.1	45.4	38.7	23.3	37.8	21.4	61.9	16.6	25.6	62.3	12.1	0.000
Do you prefer salt with a high percentage in food?	0	63.3	36.3	29.4	32.2	38.3	23.8	40.4	35.7	7.3	47.6	18.8	0.001
Do you drink an adequate amount of water per day?	54.5	45.4	0	13.5	61.6	24.7	30.9	36.9	32.1	30.3	54.4	15.1	0.003
Do you participate in a gym	0	54.5	45.4	13.5	35.9	50.4	38.1	21.4	40.4	50.2	10.4	39.2	0.000
Are you keen to chew food we ll	100	0	0	46.7	45.7	7.4	58.3	38.1	3.5	60.7	36.1	3.1	0.003
Do you eat during theintersection of the main meals?	36.3	27.2	9.1	23.3	29.4	47.1	8.3	66.6	13.1	41.3	34.1	24.6	0.000
Are you keen to eat vegetables & fruits in the meal?	27.2	27.2	45.4	29.4	58.4	12.1	21.4	54.7	23.8	24.6	67.1	8.3	0.002

DISCUSSION

A total of 500 females were included in the study, including women of the general public from all walks of life as well a Shaqra university, students, schools' teachers, dispensaries (west, south, east, and Almalik Fahd) and Aldawadmi hospital in the same area, 22% of the sample from almalikfahd dispensaryas the same east. All of the study subjects were Saudi nationals with reasonable qualification levels (minimum illiterate to University or above level). Their ages ranged from 18-55 years, 304 (60.8%) study subjects fell within the 20–40-year age range. Also, most women's lengths between 150 cm to 160 cm comprised (13.8%), and employees comprised 64.6% of the total population. According to Azzam ,et., al., 2018 found that the study population had a mean age of 30.13 ± 12.15 years and comprised 202 (31.3%) male and 444 (68.7%) female subjects, included employed (35.3%), unemployed (23.8%), and others (1.7%). The majority (48.3%) had a university-level education, 386 (59.8%) study subjects fell within the 20–40-year age range and students comprised 39.2% of the total population.

According to the findings of the study, as shown there were (17.4%) from women were nulligravida and (49 %) had more than 5 pregnancy. Also, 58.6 % had normal vaginal delivery comprised (63.8%) had caesarean-section delivery. While abortion was more than 5 time comprised (7 %).

According to study findings the obesity prevalence in Aldawadmi city were 38% and overweight represent 17%. This finding adjective unanimous with study done by Azzam, et. al., 2018 found that the BMIs of 39.3%. Also Saad Salman M. Alqarni, 2016, shows that Saudi Arabia has a relatively high rate of overall obesity and overweight and considered 15th most obese country, with an overall obesity rate of 33.7%. According to the Al-Mohaimeed et al., found that childhood obesity in KSA is increasing consistently, the prevalence of obesity was 34.3%.

According to the prevalence of obesity, Aldawadmi city, KSA, we found that the first class estimated 53% of obesity while obesity class 3 estimated 4%. Agreement with Al-Nozha MM1,et.,al, 2005 shown that The prevalence of overweight was 35.5% in KSA with an overall prevalence of 35.6% ,while severe (gross) obesity was 3.2%. Females are significantly more obese with a prevalence of 44% than males 26.4%.

Adjective unanimous with study done by Al-Quwaidhi et al. who forecasts that the overall obesity will increase to 41% in men and 78% in women by 2022 in Saudi Arabia. Also Baig et al.2015. Examine prevalence of obesity in Jeddah, KSA, among university students and find that 7.9% of the students are severely obese, 10.7% are moderately obese, and 29.8% are overweight.

According to the relations between the BMI with the different lifestyle behavior and the presence of obesity and overweight were found to be highly statistically significant. The eating habits of vast majority of the subjects were found to be unhealthy; their diet mostly comprised fast foods instead of a healthy and balanced diet, these findings are in contrast with El Nashar D E, et, al., 2016. Also agreement with Azzam, 2018 who was conducted study with the primary aim of determining the relationship between certain lifestyle factors and the increasing trends of obesity and undue weight gain in a general population from Unaizah City, Qassim.

CONCLUSION

There is an increasing in the prevalence of obesity and overweight in Saudi. The obesity prevalence in Aldawadmi city were 38% and overweight represent 17%. , also the prevalence of the first class obesity was estimated 53% of obesity while obesity class 3 estimated 4%. The different lifestyle behavior and the presence of obesity and overweight were found to be highly statistically significant. The eating habits of vast majority of the subjects were found to be unhealthy; their diet mostly comprised fast foods instead of a healthy and balanced diet, There is a direct need to raise the issue at the national level, and design efforts and strategies to combat obesity in the country, through involvement of all stakeholders.

CONFLICT OF INTEREST

The authors declared that present study was performed in absence of any conflict of interest.

ACKNOWLEGEMENT

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AUTHOR CONTRIBUTIONS

Entesar & Attalah designed and performleed the experiments and also wrote the manuscript. Entesar & Attalah performed data analysis. and reviewed the manuscript. All authors read and approved the final version.

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