RESEARCH ARTICLE

TO STUDY THE KNOWLEDGE, ATTITUDE AND PRACTICES ON LIFESTYLE CHOICES AMONG THE ADULT OBESE POPULATION PRESENITNG TO ESTIQLAL HOSPITAL, KABUL CITY.

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Manuscript Info	*Abstract*
	…………………………………………………………… **Background:** Obesity is a major public health problem and causes for significant morbidities and mortalities among the population in both developed and developing countries. It is important to study the knowledge, attitude and practices regarding lifestyle choices among obese adult population of Afghanistan, to have evidence-based recommendations for developing obesity control programs and strategies. interventional strategies. **Method:** This analytical cross-sectional study was conducted in March and April 2018 in Estiqlal Hospital, Kabul. A total of 399 adult obese clients of the Hospital were interviewed. The Cochran Formula was used to determine the sample size. Two interviewers (surveyors, a male and a female) were fully trained. Data was collected by strictly following the three steps of Screening, where weight and height of each correspondent were measured to calculate the body mass index (BMI), written consent and interviewing to fill the questionnaires. Data was analyzed through CS-Pro 6 and STATA 13 and excel. **Results:** A total of 399 clients who met the criteria were approached by the surveyors and participated in the study. BMI of the respondents in this study varies up to 40 and above, III obesity. Majority of respondents were found in class I obesity. Out of 399 respondents, 202 (50.63%) were found to have class I obesity that was followed by class II obesity with 154 (38.6%) respondents and class III obesity with 40 (10.03%) respondents (figure 1). This study revealed that the number of obesity cases are higher in females than in males. Of the total 399 participants 261 (65.41%) were female interviewees, whereas, a total of 138 (34.59%) were male interviewees. **Conclusion:** Obesity is one of the major risk factors for Non-communicable diseases and it causes a great burden on society and health system. The prevalence of obesity high and increasing in Afghanistan like other low- income and mid-income countries. A multisectoral approach is required to control the obesity through increasing awareness, knowledge and sports and welfare facilities, as well as strategies for behavioral changes in societies.

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Introduction: -

Obesity is one of the major public health problems and causes quite large morbidity and mortality to the population of both developed and developing countries. The World Health Organization declared obesity as a global epidemic in 1998[1]. The worldwide prevalence of obesity nearly tripled between 1975 and 2016 and overall, about 13% of the world's adult population was obese in 2016.[2]

Afghanistan is one of the backward and developing countries; which has experienced 4 decades of war and conflicts and the entire country's infrastructure has been severely devastated. Health sector is also very much affected and has been very backward. Fortunately, over all governmental system, public sectors and private sectors have significantly improved since 2001, but, still the health and all other social indicators are very much low.

Afghanistan is currently in post emergency and relief situation; a good progress of development has been started. Health system has reached several significant achievements in areas of policy, strategy, fund raising, human resource development, service delivery, control of communicable disease, researches, system reforms and improving some of key health status indicators e.g.; child mortality, maternal mortality, control of TB (Tuberculosis) and Malaria, increase coverage of routine EPI (Expanded Program for Immunization) and many others.

Ministry of Public Health (MoPH) has not given full attention to non-communicable diseases i.e. CVD (Cardiovascular disease), musculo-skeletal disorders, cancers etc., for which obesity is one of the main predisposing factors. MoPH has recently developed a National strategy for prevention and control of NCDs but MoPH does not have specific policy, strategy and programs for control and prevention of obesity. There is no updated and valid information regarding obesity prevalence, associating factors and data regarding the KAP on lifestyle choices in obese adults of the country, therefore it seems essential to conduct the KAP study on lifestyle choices and obesity as well as to estimate prevalence and identify associating factors of obesity in the community population.

Overweight and obesity are commonly understood as abnormal or excessive fat accumulation that may impair health. Body mass index (BMI) is a simple index of weight-for-height that is widely used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his/her height in meters (kg/m^2).

For adults, WHO defines overweight and obesity as: overweight is a BMI greater than or equal to 25(25 to 29.9); and obesity is a BMI greater than or equal to 30. BMI provides the most useful population-level measure of overweight and obesity as it is the same for both sexes and for all ages of adults[2].

Classification of Obesity: -

BMI	Classification
< 18.5	underweight
18.5–24.9	normal weight
25.0–29.9	overweight
30.0–34.9	class I obesity
35.0–39.9	class II obesity
≥ 40.0	class III obesity

Overweight and obesity are associated with severe health concerns. Risk increases gradually as Body Mass Index increases. High Body Mass Index is a major risk factor for several chronic diseases which leads to early death and significant morbidity such as; cardiovascular disease that is already number one cause of death worldwide, 17 million people are killed each year due to cardiovascular diseases[3], diabetes that has become as an epidemic in the world. According to WHO report, deaths due to diabetes will increase by more than 50% in the world in coming 10 years[3], musculoskeletal disorders (especially osteoarthritis), some cancers such as; endometrial, breast, and colon cancers and psychological disorders. Someone is not going to be obese in just few days, but obesity happens gradually due to the basic causes of inappropriate diet and lifestyle choices and, from your genes (to some extent) and as well as from some medical causes;

Lifestyle choices play a major role in weight control. Harmful eating behaviors are transferred in families, as bad eating habits are learnt from parents. Obesity in childhood can lead to weight-related health consequences in adulthood, showing that learned unhealthy eating habits and other lifestyles continue into late life.

Physical activity is another major factor in influencing weight. Few people take regular exercise, many people sit on desk for most of the day and use their cars to get around. People tend to watch television or play computer games during relax time. Physical exercise is needed to use the energy provided by food and if someone does not take physical exercise, the extra calories are stored as fat in their bodies.

Genes is another factor that causes transfer of obesity in family members; some people are not obese and maintain the same weight for long term without adopting any measures, whereas others get weight quickly if they do not take care of weight control measures. Appetite is increased if having some specific genes that cause eating too much. Some specific genes have role of controlling fat storage in the body, so having a particular genetic variation leads to store more fats.

Some medical conditions also cause getting weight such as Cushing syndrome and Polycystic Ovary Syndrome[4]. Taking several medicines such as corticosteroids, combined contraceptive pills and antidepressants can contribute to weight gain. Weight gain can also be a side effect of taking and from quitting smoking.

Reference to WHO new data, many low- and middle-income countries are now facing a "double burden" of disease. Afghanistan is a less developed country which has been severely affected by four decades of conflicts, but recently progress toward development has been started and significant positive social changes have been made and the lifestyles of many people have become prone to obesity which indicates that Afghanistan is also a prone country for high prevalence of obesity, so there was/is need for a study to explore the lifestyles choices in the community in regard to obesity for further programming for control and prevention of obesity.

The life styles in Afghanistan are generally unhealthy due to the low level of literacy, low awareness of health issues, severe poverty, so there is need to study these harmful lifestyles through a study for designing appropriate health promotion interventions for promoting healthy life styles in the communities.

The prevalence of Non-communicable chronic diseases as cardiovascular problems, hypertension, diabetes, psychological disorder and cancers are increasing in Afghanistan. As obesity is one of the major associating factors of many of non-communicable diseases, so there is need to address lifestyle choices to reduce and control non-communicable diseases.

Study Objectives: -
1. Primary objective of the study is to study lifestyle choices among obese adult clients who come to Estiqlal Hospital.
2. Secondary Objective is to determine risk factors of Obesity (and other NCDs) among obese adults come to Estiqlal Hospital.

Review of Literature:
A research has found that quality of life decreases with increasing levels of obesity, the relationship between obesity and health related quality of life was examined in people aged 18 and older, after adjusting socioeconomic factors and disease status of the study groups[5].

Fundamentally obesity is caused by an imbalance between energy intake and energy expenditure by physical activity and metabolic processes. Four main groups of acknowledged etiological factors refer to gaining weight: Behavioral factors determined by complex socio-psychological determinants such as habits, emotions, attitudes, parental feeding practices and strategies, beliefs, etc. Biological factor such as gender, age, neuroendocrine factors and genetic predisposition. The environmental factors i.e. the individual's physical, economic and sociocultural surroundings which in turn influence individual behavior and, iatrogenic factors (when weight gain may be caused by medication). All mentioned four factors in combination are a likely source for the existence of obesity[6].

Obesity has multidimensional cost on the society. Apart of the cost of well-being and survival of population, as obesity results in disabilities and disease, so it puts a high burden on health system. Mainly the population of

economically productive age is affected by obesity which causes to lose of professional work force to the employers and affect the family, social and as well as national economic development in countries.

Some key factors are associated to the increasing obesity rates such as; low physical activity, high energy intake, harmful eating habits and inappropriate lifestyle, cultural and social factors as the obesity is sign of wealth and power in some societies, using of vehicles for transportation even for very short distances, mechanization of all types of human activities, preference for fatty foods and rapidly increasing urbanization.

High energy intakes decreased physical activity, cultural factors, changing diets and lifestyles, the increasing use of motorized vehicles and machines for all types of human activities, the importation of fatty foods and increased urbanization.

Global aspect of the study: -
Reference to WHO updates on obesity; some recent WHO global facts are as follow.
1. In 2016, more than 1.9 billion adults aged 18 years and older were overweight. Of these over 650 million adults were obese.
2. In 2016, 39% of adults aged 18 years and over (39% of men and 40% of women) were overweight.
3. Overall, about 13% of the world's adult population (11% of men and 15% of women) were obese in 2016.
4. The worldwide prevalence of obesity nearly tripled between 1975 and 2016.

In 2016, an estimated 41 million children under the age of 5 years were overweight or obese. Once considered a high-income country problem, overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings. In Africa, the number of overweight children under 5 has increased by nearly 50 per cent since 2000. Nearly half of the children under 5 who were overweight or obese in 2016 lived in Asia.

Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016. The prevalence of overweight and obesity among children and adolescents aged 5-19 has risen dramatically from just 4% in 1975 to just over 18% in 2016. The rise has occurred similarly among both boys and girls: in 2016 18% of girls and 19% of boys were overweight. While just under 1% of children and adolescents aged 5-19 were obese in 1975, more 124 million children and adolescents (6% of girls and 8% of boys) were obese in 2016.

Overweight and obesity are linked to more deaths worldwide than underweight. Globally there are more people who are obese than underweight – this occurs in every region except parts of sub-Saharan Africa and Asia[2].

Worldwide, the proportion of adults with a body-mass index (BMI) of 25 kg/m (2) or greater increased between 1980 and 2013 from 28·8% (95% UI 28·4-29·3) to 36·9% (36·3-37·4) in men, and from 29·8% (29·3-30·2) to 38·0% (37·5-38·5) in women. Prevalence has increased substantially in children and adolescents in developed countries; 23·8% (22·9-24·7) of boys and 22·6% (21·7-23·6) of girls were overweight or obese in 2013. The prevalence of overweight and obesity has also increased in children and adolescents in developing countries, from 8·1% (7·7-8·6) to 12·9% (12·3-13·5) in 2013 for boys and from 8·4% (8·1-8·8) to 13·4% (13·0-13·9) in girls. In adults, estimated prevalence of obesity exceeded 50% in men in Tonga and in women in Kuwait, Kiribati, Federated States of Micronesia, Libya, Qatar, Tonga, and Samoa. Since 2006, the increase in adult obesity in developed countries has slowed down[7].

The fifth leading risk of global death is overweight and obesity. Obesity in childhood age is leading to premature death and disability in adulthood. (WHO/Obesity and overweight, 2009) The annul number of deaths due to overweight and obesity is at least 2.8 million. Also, obesity contributes to 44% of the diabetes burden, 23% of the ischemic heart disease burden and between 7% and 41% of certain cancer burdens[8].

In 2010, around 43 million children under five were overweight. Once considered a high-income country problem, overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings. Close to 35 million overweight children are living in developing countries and 8 million in developed countries.

Many low- and middle-income countries are now facing a "double burden" of disease. While they continue to deal with the problems of infectious disease and under-nutrition, at the same time they are experiencing a rapid upsurge in chronic disease risk factors such as obesity and overweight, particularly in urban settings. It is not uncommon to

find under-nutrition and obesity existing side-by-side within the same country, the same community and even within the same household. This double burden is caused by inadequate pre-natal, infant and young child nutrition followed by exposure to high-fat, energy-dense, micronutrient-poor foods and lack of physical activity.

Overweight and obesity are linked to more deaths worldwide than underweight. For example, 65% of the world's population live in countries where overweight and obesity kill more people than underweight[9] (this includes all high-income and most middle-income countries).

Approximately 1 in out of four adults was obese in 2008 in England, 23% of women and 42% of men were overweight. As well as one in six boys and one in seven girls were obese and around 1 in seven overweight in England in 2008[10].

Obesity is the second leading cause of preventable deaths in the United States; smoking is the first. The prevalence of obesity among adults and children is increased dramatically over the past several decades in the United States and now it is reaching epidemic level. In the United States; the prevalence of obesity is 30, 5 in adults in 1999- 2000. Approximately 65 percent adults were considered to be either overweight or obese and nearly 6 million U.S. adults were considered morbidly obese in 2001. An Estimated of 15 percent of all children aged 6 to 19 years were overweight in 2002[11].

Women generally have higher rate of obesity than men, although men may have higher rates of overweight. In Framingham, USA study, men were found to gain most weight between the ages of 25 and 35 years, while women gain most between 45 and 49 years of age.
The total annual economic cost of obesity in the United States is about $117 billion, including more than $50 billion in avoidable medical costs, also obesity results annually in the loss of 39 million working days.

Chronic diseases more occur in obese people than non-obese individuals, so obese people spend $10,000 more during their lifetime for medical care of chronic diseases than non-obese individuals[12].

Lifestyle and behavior choices are important factors in influencing weight status. Unhealthy diets and physical inactivity are major risk factors for overweight and obesity as well as many chronic health conditions including cardiovascular disease, diabetes, some cancers and high blood pressure. Obesity and higher body weight are strongly associated with a sedentary lifestyle and lack of physical activity in the adult population of the European Union.[24] Nonetheless, they are consistent with the view that a reduction in energy expenditure during leisure time may be the main determinant of the current epidemic of obesity[24].

Regional aspect of the study: -
Iran: -
A Systematic Review and Meta-Analysis Study showed[13]; a total of 144 articles with the sample size of 377858 people (134588 males and 164858 females) were enrolled in the study. The prevalence of obesity in populations above the age of 18 was estimated as 21.7% (CI 95%: 18.5% - 25%) and in populations below 18 as 6.1% (CI 95%: 6.8%-5.4%).

Obesity prevalence in Iran in age 15-49 male and female was 14.4 and overweight prevalence is 29 which was find out in the result of a survey consisting of 89404 sample size, conducted in 2007 in Iran[14]. (International Association for the Study of Obesity, 2011).

Pakistan has witnessed an unprecedented growth in the number of overweight and obese individuals in its population, and obesity is proving to be an issue of considerable public health concern.[15]

The prevalence of overweight and obesity, weighted to the general Pakistani population, was 25.0% (95% confidence interval [CI] 21.8%−28.2%). The prevalence of obesity was 10.3% (95% CI 7.0%−13.2%). The factors independently and significantly associated with overweight and obesity included greater age, being female, urban residence, being literate, and having a high (v. low) economic status and a high (v. low) intake of meat[16].

In India, the non-communicable risk factors survey phase 2 was carried out in 2007 − 2008, in the states of Andhra Pradesh, Kerala, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttarakhand and Mizoram. The survey shows high

prevalence of overweight in all age groups except in 15 – 42-year group. Overweight prevalence was higher among females than males and in urban areas than in rural areas. Law prevalence was recorded among lower level of education (ill-literate and primary level), and in people whose occupation was connected with agriculture or manual work (Govt. of India ,2014. National Health Profile 2011, Ministry of Health and Family Welfare, New Delhi).

Obesity and overweight are increasing in Kingdom of Saudi Arabia (KSA) with an overall obesity prevalence of 35.5%. The prevalence of overweight was 36.9%. Overweight is significantly more prevalent in males (42.4%) compared to 31.8% of females (p<0.0001). The age-adjusted prevalence of obesity was 35.5% in KSA with an overall prevalence of 35.6% [95% CI: 34.9-36.3], while severe (gross) obesity was 3.2%. Females are significantly more obese with a prevalence of 44% than males 26.4% (p<0.0001)[17].

National aspect of the study: -

Many searches and efforts were done to find national level literature; unfortunately, the researcher was not able to find specific national literatures related to the topic of the study. There are quite large variations in the prevalence of obesity and overweight in different studies; conducted in various cities of Afghanistan, where variations represent the lack of reliable conducted studies in the country. Below are some examples of studies with varying figures of the prevalence of Obesity and overweight.

1. A study was conducted using WHO STEP wise approach among adults of age group of 25-70 years in November 2015 in Kabul city[19]. Out of 1172 study subjects, 599 (51.1%) were females and 573 (48.9%) males. The prevalence of overweight was 36.9% with differentiation of male 32.7% and female 41.2% and the prevalence of obesity was 20.6 % with differentiation of obesity stage I, 14.8% obesity stage II, 4.2% and obesity stage III, 1.6%. The overall mean of BMI was 26.22±5.39 while there is much difference in terms of females (27.33±6.07) and males (25.07±4.28).
2. A cross-sectional study prevalence and associated risk factors for obesity, was conducted in Jalalabad city[20] within May–June 2013; Approximately one third of adult population in Jalalabad city is suffering from obesity. The overall prevalence of obesity was 27.4% with significant difference between sexes (35.9% females and 16% males).
3. A study was conducted from December 2011 through March 2012 and involved a survey of 1169 respondent, aged 40 years and above. The overall prevalence of obesity, hypertension and diabetes mellitus was 31.2%, 46% and 13.3%, respectively[22].

Methodology: -

Operational Definitions: -
1. Obese: anyone who's BMI is 30 or above.
2. Overweight: anyone who's BMI is 25 to 29.9.
3. Adults: Aged 18(completion of 18 years) and above.
4. BMI: Kg/m2

Study Type: -
Cross sectional analytical (Hospital based) study design was used to achieve the above-mentioned study.

Study site and target population: -
This study was carried out at Estiqlal Hospital, Kabul city. It is in the southwest of the city. It has three OPDs, Internal medicines, General surgery and Gene/obs. Clients are visiting from all part of the city, surrounding districts and neighboring provinces. All patients were considered as population of the study with following inclusion and exclusion criteria:

Inclusion criteria: -

All obese adults of 18 and above age who came to Estiqlal Hospital had been included in the study, regardless of gender. Obese and non-obese were determined by observations and measurement of BMI and waist circumference. The study subjects were including patients and their attendant's/care takers, and other visitors.

Exclusion criteria: -

Medical professionals, pregnant, under eighteen and normal weight adults were excluded.

Sampling Technique: -

For a representative sample Cochran formula was used to find out the size of the sample needed for the study. Cochran (1977) developed a formula to calculate a representative sample for proportions as: $n=(z^2 \, pq)/e^2$ where, n is the sample size, z is the selected critical value of desired confidence level, p is the estimated proportion of an attribute that is present in the population, q= 1-p and e is the desired level of precision. We assumed the maximum variability, which is equal to 50% (p =0.5) and taking 95% confidence level with ±5% precision, the calculation for required sample size will be as follows-- p = 0.5 and hence q=1-0.5 = 0.5; e= 0.05; z =1.96 , therefore, $n=((1.96)^2 \, (0.5)(0.5))/ \llbracket (0.05) \rrbracket^2 =384.16=384$, have been estimated as a representative sample. To have a real-based representative sample, we increase it to 400 patients. Finally, we have 399 who were interviewed during this interval at Estiqlal Hospital.

Survey Team Training: -

Two interviewers (Ms. Manizha and Mr. Sayed Shabeer) and one doctor of the mentioned hospital (Dr. Mohammad Nazir Amin, as monitor) were trained for data collection and interviewing. They were provided with skills and knowledge needed for interviewing and data collection. Specifically, the interviewers have been trained for the following issues:
1. Ethical Consideration in research particularly during the data collection and interview with the respondents;
2. Confidentiality assurance;
3. Weight and height measurement;
4. BMI calculations;
5. Filling of the questionnaires.

Data Collection: -

Data collection for each participant involved three steps: Screening for eligibility in accordance with inclusion and exclusion criteria, consent and interview. Comprehensive questionnaire, scale and measuring meter for determining weight and height of the respondents, were used by the surveyors for the accuracy of the data. Bothe surveyors were directly observed and monitored during the interviews and data collection as to limit the selection bias and assure quality of the data.

Data management and quality control: -

Each questionnaire contained cells for the date of entry/filling, name of the interviewer and signature or fingerprint of the interviewees. After completing the interview, the questionnaire was handed over to the supervisor. Each questionnaire was checked by the supervisor and interviewers were asked to correct any error found. The supervisor signed and securely stored the questionnaires. Only supervisor had the access to the questionnaires. each questionnaire contained a unique number for confidentiality concerns.

Confidentiality assurance: -

A system was put in place to assure the confidentiality of the respondents' data. The following points were used for making sure that the system worked regarding confidentiality:
1. Interviewers were trained on the definition of confidentiality, its importance and on human subject's research.
2. Each questionnaire had a study ID number, no individual identifiers were recorded.
3. Informed consent was part of each questionnaire and administered before interview
4. Participants were informed of the study objective and system to ensure strict confidentiality.

Ethical Consideration: -

Inform consent was discussed and each respondent agreement were taken prior of engaging them in interview. Full confidentiality of respondents and data were ensured in the whole study. Anonymous questionnaires were used. Female surveyor was hired for interviewing female respondents. All social norms and values were fully respected. Approvals from University Ethical Committee and IRB of MoPH were obtained to carry out the study.

Data Analysis: -

Data analysis was done through two soft wares (CS-Pro 6 and STATA 13) and excel sheet. A database was created as to enter, and store collected data from each filled questionnaire. CS-Pro 6 used for data base development

and data entry purposes. To analyze the entered data, STATA 13 was used that the extracted findings and figures were presented in graphs and table through excel sheet.

Results and Discussions: -

Results: -

A total of 399 clients who met the criteria were approached by the surveyors and participated in the study without any refusal. The reason for this full enrolment of the participants were the ethical consideration that surveyors got during the training.

General and Demographic Characteristics: -

In each face to face interview with selected respondents, their weights and heights were measured to calculate the important variable of the study, BMI.

BMI of the participants in this study varies up to 40 and above, III obesity. Majority of respondents were found in class I obesity. Among the 399 respondents, 202 (50.63%) were found to have class I obesity that was followed by class II obesity with 154 (38.6%) respondents and class III obesity with 40 (10.03%) respondents (figure 1).

Worldwide, the proportion of adults with a body-mass index (BMI) of 25 kg/m (2) or greater increased between 1980 and 2013 from 28·8% (95% UI 28·4-29·3) to 36·9% (36·3-37·4) in men, and from 29·8% (29·3-30·2) to 38·0% (37·5-38·5) in women[7].

Analysis and its results of the collected data revealed that the number of obesity cases are higher in females than in males. Of the total 399 participants 261 (65.41%) were female interviewees, whereas, a total of 138 (34.59%) were male interviewees. The non-communicable risk factors survey phase 2 was carried out in 2007 – 2008 in India, which showed that prevalence of the overweight and obesity were higher in females rather than in males.

Table 1 shows that most of the male respondents have been recorded in class I obesity with 108 (78.60%) number and percentage respectively. Results shows that there is a congruency among the data of our study and risk factor survey phase two conducted in India as well as in Framingham, USA study, in which men were found to gain weight mostly between the ages of 25 and 35 years, while women gain most between 45 and 49 years of age.

Table 1: -Obesity Classification based on gender.

Obesity Classification	Male		Female	
	Frequency	**Percent**	**Frequency**	**Percent**
Class I Obesity	108	78.60%	97	37.16 %
Class II Obesity	24	17.39%	130	49.87%
Class III Obesity	6	4.01%	34	13.03%
Total	138	100%	261	100%

In this study, respondents' age varies from 18 to 80, years. The study found that majority of the participants were in age range of 31 – 40 years, 116 (29.07%) followed by 41 – 50 years age range with 97 (24.31%) numbers and percentages. If we compare the findings of our study with a study conducted in Iran as in regional level, a little bit differences are existed in both studies. Obesity prevalence in Iran in age 15-49 male and female was 14.4 and overweight prevalence is 29 which was find out in the result of a survey conducted in 2007 in Iran[14].

Table 2: -Age of the respondents VS Obesity classification.

Age Ranges	Classification			
	Class I Obesity n (%)	Class II Obesity n (%)	Class III Obesity n (%)	Total n (%)
18 – 20	4 (1.98)	3 (1.95)	0	7 (1.75)
21 – 30	31 (15.35)	19 (12.34)	4 (10)	54 (13.53)

31 – 40		54 (26.73)	57 (37.01)	5 (12.50)	116 (29.07)
41 – 50		46 (22.77)	35 (22.73)	16 (40.00)	97 (24.31)
51 – 60		49 (24.25)	30 (19.48)	12 (30.00)	91 (22.81)
61 – 70		16 (7.92)	9 (5.84)	3 (7.50)	28 (7.02)
71 – 80		5 (2.48)	1 (0.65)	0	6 (1.50)
Total		202 (100)	154 (100)	40 (100)	399 (100)

Table 2 shows that most of the respondents with class I and class II obesity were in age between 31 – 40 years with 54 (26.73%) and 57 (37.01%) numbers and percentage respectively.

The analysis of this study indicates that most of the study participants are illiterate (figure 3). Nearly half of the total sample of the study was illiterate, which are 220 (55.14%). In most affluent societies, there is an inverse relationship between educational level and prevalence of overweight & obesity.

Lifestyle and behavioral choices are important factors in influencing weight status. Unhealthy diets and physical inactivity are major risk factors for overweight and obesity as well as many chronic health conditions including cardiovascular disease, diabetes, some cancers and high blood pressure.

In this study most of the respondents as stated before, were female, that most of them were the household workers. Table 3 divulges that more than half of the respondents 236 (59.15%) stated during the interviews that they were working as household women. Sedentary life style particularly inactive occupation and recreation such as watching TV, promote it. Thus, household working as inactive occupation specifically in urban areas paws the way for weight gain due to physical inactivity.

Table 3:-Occupation and Obesity Classification among the study participants.

Occupation	Classification			
	Class I Obesity n (%)	Class II Obesity n (%)	Class III Obesity n (%)	Total n (%)
Jobless	12 (5.94)	4 (2.6)	0	16 (4.01)
Worker/Labor	12 (5.94)	2 (1.3)	3 (7.50)	17 (4.26)
Household Women	82 (40.59)	121 (78.57)	33 (82.50)	236 (59.15)
Teacher	14 (6.93)	5 (3.25)	2 (5.00)	21 (5.26)
Retired	1 (0.50)	0	0	1 (0.25)
Self-Employment	84 (41.58)	22 (14.29)	2 (5.00)	108 (27.07)
Total	202 (100)	154(100)	40 (100)	399 (100)

Study findings show that most of the respondents 151 (37.84%), owned home in city with carpet followed by those who possessed home in city, car/vehicle and carpet 68 (17.04%). The relationship of obesity to social class has been studied in some detail. There is a clear inverse relationship between socio-economic status and obesity. Within some affluent countries, however, obesity has been found to be more prevalent in the lower and middle socio-economic groups, as found in this study where majority of respondents are within middle social class.

Obesity Knowledge and Awareness: -
The second part of the questionnaire were contained 14 questions regarding the knowledge and awareness evaluation of the respondents. Health education has an important role in promoting health lifestyle and in the reduction and control of overweight and obesity.

Obesity Knowledge: -
Out of 399 respondents 141 (35.34%) had wrong definition about the obesity and 65 (16.29%) had right definition about obesity. however, the vast majority of the participants didn't know about obesity and its definition.

At the meantime, during the interview respondents were asked to indicate the source that they heard about obesity. In accordance with the study findings mass media has played effective role in raising awareness for audience about the obesity, as out of the entire sample 334 (83.71%) have heard about obesity from the mass media (TV, Radio and New paper). (See Table4)

Table 4: -Knowledge of Respondents about Obesity.

Knowledge about obesity				
What is Obesity?	Responses			
	Right definition n (%)	Wrong definition n (%)	Don't know n (%)	
	65 (16.29)	141 (35.34)	193 (48.37)	
From what main source you have heard about Obesity?	Mass media n (%)	Books n (%)	Health Provider n (%)	Family and Friend n (%)	Other n (%)
	334 (83.71)	11 (2.76)	33 (8.27)	12 (3.01)	9 (2.26)
Do you need to get more information about Obesity?	Yes n (%)	No n (%)	Don't know n (%)	
	302 (75.69)	79 (19.80)	18 (4.51)	

Obesity Awareness: -
Among the total sample, huge number of respondents, 297 (74.44%) thought that obesity is somewhat serious in comparison with respondents who thought that obesity is very serious condition. From the total participants, 364 (91.23%) respondents have stated that obesity is associated to some health problems. (See Table 5).

Table 5: -Awareness of Respondents about Obesity.

Obesity Awareness				
In your opinion, how serious a condition obesity is?	Responses			
	Not serious n (%)	Somewhat Serious n (%)	Very Serious n (%)	Don't know n(%)
	12 (3.01)	297 (74.44)	80 (20.05)	10 (.51)
Do you know, obesity is associated to any health problem or not?	Yes n (%)		No n (%)	
	364 (91.23)		35 (8.77)	

Obesity is a health hazard and detriment to well-being and health, which is reflected in the increased morbidity and mortality. Obesity is a precipitating risk factor for hypertension, diabetes, gall bladder disease and coronary heart disease and certain types of cancers, especially the hormonally related and large bowl cancers.

During the interviews with respondents, most of them stated that obesity is leading factors to some diseases. Out of the 399 participants, 199 (54.67%) believed that overweight and obesity causes cardiovascular diseases and diabetes.

Meanwhile, respondents have been asked that how they will determine someone is overweight or obese? Among the total participants, 190 (47.62%) mentioned that they determine the overweight and obesity of someone from his/her high weight and Big size. 83 (20.8%) of the respondents believed that high weight is characteristic for them to determine someone is overweight or obese. (See Figure 7).

Obesity Prevention: -
Weight control is widely defined as approaches to maintaining weight within the 'healthy' (i.e. normal or acceptable) range of body mass index of 18.5 to 24.9 kg/m2 throughout adulthood. (WHO, Expert Committee, 1995). It should also include prevention of weight gain of more than 5 kg in all people. In those who are already over-weight/obese, a reduction of 5-10 percent of body weight is recommended as an initial goal.

This study found that out of the total respondents 380 (95.24%) assumed that overweight and obesity is preventable, but enormous number of the participants, 384 (96.24%) were unaware about the preventive or weight reducing services and related facilities. Meanwhile, out of the 399 participants, 390 (97.74%) responded that it is possible for obese people to reduce their weight and prevent obesity.

Table 6: -Knowledge of Respondent about Obesity Prevention.

Knowledge of Obesity Prevention				
Are you aware of any obesity preventive or weight reducing services?	Responses			
	Yes n (%)	No n (%)	Don't know n (%)	
	7 (1.75)	384 (96.24)	8 (2.01)	
Which are these facilities and services for prevention of Obesity and reduction of weight?	Health facility/professional for health education	Any exercise means and health facilities	Any exercise means /facilities	Availability of any specific foods and exercise means
	5 (31.25)	1 (6.25)	9 (56.25)	1 (6.25)
Is obesity preventable?	Yes n (%)		No n(%)	
	380 (95.24)		19 (4.76)	
Is it possible for obese people to reduce their weight?	Yes n (%)		No n (%)	
	390 (97.74)		9 (2.26)	

Prevention of obesity should begin in early childhood. Obesity is harder to treat in adults than in children. This can be achieved by healthy lifestyles and behaviours, dietary changes, increased physical activities, etc.

Of the total number of respondents, 189 (49.61%) were believing that less eating and doing exercise are the leading contributor towards the prevention of getting obese, while 102 (26.77%) of the participants thought that the dietary principles apply to both prevention and treatment of the obesity. Of the respondents 22 (5.77%) considered increased physical activities as an important part of weight reducing program.

Obesity Attitudes: -
Lifestyle choices and attitudes play a major role in weight control. Harmful eating behaviors are transferred in families; as bad eating habits are learnt from parents. Obesity in childhood can lead to weight-related health consequences in adulthood, showing that learned unhealthy eating habits and other lifestyles continue into late life.

Attitudes of individuals and behavioral choices are important factors in influencing weight status. Unhealthy diets and physical inactivity are major risk factors for overweight and obesity as well as many chronic health conditions including cardiovascular disease, diabetes, some cancers and high blood pressure. Some people are not obese and maintain the same weight for long term without adopting any measures, whereas others get weight quickly if they do not take care of weight control measures

During the interview, most of the respondents 63 (15.79%) believed that overeating and family history have inclusive rule in overweight gain and obesity development. Meanwhile, 30 (7.52%) of the respondents stated that inactive lifestyle (without physical activities) and family history are the leading factors in overweight gain and obesity development. (See Table 7)

Table 7: -Perception of the participant regarding obesity development.

Mainly what kind of people are more likely to get obese?	Frequency	Percentage
Anybody	21	5.26
Only rich people - People who eat high calories food	24	6.02
People who eat a lot	32	8.02
Only rich people - Family history	9	2.26

People who eat a lot - People who eat high calories food	31	7.77
People who eat a lot - People who eat high calories food - Family history	12	3.01
People who eat a lot - Family history	63	15.79
People who doesn't do physical activities	14	3.51
People who doesn't do physical activities - People who eat high calories food	19	4.76
People who doesn't do physical activities - People who eat high calories food - Family history	12	3.01
People who doesn't do physical activities - Family history	30	7.52
People who eat high calories food	19	4.76
People who eat high calories food - Family history	25	6.27
Family history	18	4.51

As bellow table explains that out of the 399 respondents, 246 (61.65%) respondents were the witness of their parents/grandparents' obesity and 149 (37.34%) of the participants weren't the witness of such obesity in their family to confirm the transmission of obesity from their parents/grandparents. In accordance with the responses of the study participants, 60 (15.04%) of them believed that men are more likely to get obese than women because they eat a lot and put on weight. About their attitudes towards the obesity 243 (60.90%) thought that they can get obese due to some reasons and 156 (39.10%) didn't think so. Meanwhile, the vast majority of the participants, 378 (94.74 %) didn't smoke or use other type of tobacco. (See Table 7)

Table 8:-Obesity Attitudes Among the Study Respondents.

Obesity Attitudes				
Is/ was anyone of your parent/ grandparents obese?	Responses			
	Yes n (%)	No n (%)		Don't know n (%)
	246 (61.65)	149 (37.34)		4 (1.00)
Who are more likely to get obese (men or women)? Why do you say that?	Men are more likely to get obese. n (%)	Women are more likely to get obese. n (%)	Men and women have the same risk to get obese n (%)	Don't Know n (%)
	60 (15.04)	44 (11.03)	23(5.76)	272 (68.17)
Do you think you can get obese?	Yes n (%)		No n (%)	
	243 (60.90)		156 (39.10)	
Do you use table salt?	Yes n (%)		No n (%)	
	106 (26.57)		293 (73.43)	
Do you smoke or use any other form of tobacco?	Yes n (%		No n (%)	
	21 (5.26)		378 (94.74)	

Children and adolescents with obesity face stigmatization and discrimination in many stages of their lives, and it has been assumed that their psychological well-being will be compromised as a result.

In this study, out of the entire sample, 154 (38.6%) mentioned that their concerns about overweight and obesity, is the raise for cardiovascular diseases, which is followed by the diabetes with 60 (15.04%) numbers and percentage. (See Figure 9).

Based on face to face interviews with clients, study determined that the reactions of 361 (90.7%) persons from the total sample, towards the weight gain and obesity, were sadness or hopelessness due to the existed stigma and outcomes of the obesity that was followed by shame. (See Figure 10).

Figure 10: Reaction of the respondents to the overweight gain and obesity Considering and paying attention to changes in weight gain and BMI can be a protective factor in obesity prevention. One of the questions in our study focused on the perception and consideration of the clients regarding the changes towards the weight gain and obesity in their body. This study indicates that, among the study group, 356 (89.22%) subjects considered themselves as obese ones during the interview with surveyors, whereas, 31 (7.77%) of the study subjects considered themselves as overweight. (See Figure11)

During the interview, most of the study subjects 175 (43.86%) stated that they used carbohydrates and Fats, which is followed by the number of subjects who consumed vegetables and fruits with 85 (21.3%) numbers and percentage. (See table 8).

Table 9: -Diet of the study subjects.

Mainly which kind of food's elements do you use more?	Frequency	Percentage
Carbohydrates (bread, rice, sweats and potatoes) & Fats (oily food, butter, cream).	175	43.86
Carbohydrates (bread, rice, sweats and potatoes	22	5.51
Fats (oily food, butter, cream and fried food	18	4.51
Vegetables – Fruits	85	21.3
Proteins	13	3.26
Vegetables	13	3.26
Carbohydrates (bread, rice, sweats and potatoes - Fats (oily food, butter, cream and fried food – Proteins	10	2.51
carbohydrates (bread, rice, sweats and potatoes - Vegetables – Fruits	10	2.51
Carbohydrates (bread, rice, sweats and potatoes - Proteins	12	3.01

If we compare the result of the bellow table with table 7, we will find out the partially the same result for both tables, where 202 (50.63%) of the subjects believed that carbohydrates and fats make someone obese or weight gain. (See table 9).

Table 10: -Study Subjects insight regarding the foods that make someone obese

What do you think which type of food make someone obese?	Frequency	Percentage
Carbohydrates – Fats	202	50.63
Carbohydrates – Fats – Proteins	71	17.79
Fats – Proteins	27	6.77
Carbohydrates	24	6.02
Carbohydrates – Proteins	18	4.51
Proteins	17	4.26
Fats	16	4.01
Vegetables	8	2.01
Fruits	8	2.01

This study found that most of the respondents who participated in the study have not consumed protein as they consumed fats in their daily diet or all meals. Out of the 399 subjects, only 15 (3.76%) of the participants stated that they consumed proteins in their all meals. Whereas, vast majority of the subjects 120 (30.08) mentioned during the interview that they consume protein only in weekly base. (See Table 9).

Table 11:-Protein Consumption amongst the subjects.

How often do you consume Proteins (Meets, Eggs, Milk)?	Frequency	Percentage
In my all meals	15	3.76
In my two main meals (Lunch and Dinner)	78	19.55

Once a day	43	10.78
2,3,4 or 5 times in a week	41	10.28
Once in a week	120	30.08
Once in two weeks	102	25.56

Out of the 399 respondents, 132 (33.08%) said that they consumed the fates in their two main meals (Lunch and Dinner), whilst 132 (30.33%) of the respondents mentioned that they consumed fats only once in a week. (See table 11)

Table 12: -Fats consumption in study subjects.

How often do you consume Fats (Oily foods, butter, Cream, Fried food)?	Frequency	Percentage
In my all meals	2	0.5
In my two main meals (Lunch and Dinner)	132	33.08
Once a day	39	9.77
2,3,4 or 5 times in a week	40	10.03
Once in a week	121	30.33
Once in two weeks	65	16.29

Results of the studies and researches conducted in other regions and countries shows that inactive lifestyle is the leading factor for overweight gain and obesity development. This study also has found out that great majority of the subjects 331 (82.96%) didn't do any exercise for weight reducing purposes.

Obesity Practices and Care-Seeking Behaviors: -
As stated earlier, unhealthy diets and physical inactivity are major risk factors for overweight and obesity as well as many chronic health conditions including cardiovascular disease, diabetes, some cancers and high blood pressure. Obesity and higher body weights are strongly associated with a sedentary lifestyle and lack of physical activity in the adult population of the European Union.

Based on the interviews with respondents, out of the entire subjects of the study, 213 (53.38%) respondents stated that they considered the risk of obesity while consuming the foods, meanwhile 186 (46.62%) haven't considered the risk of obesity when they consumed the various foods. Reference to studies, physical activities have the extraordinary role in reduction of weight and prevention of the obesity.

In this study, most of the respondents mentioned that they didn't have any exercise as to control their weight gain and prevent the obesity. Of the 399 study subjects, clear majority of them, 269 (67.42%) indicated that they didn't have any exercise in this regard, which can be a contributor to weight gain and obesity development. At the same time, during the interview respondents were asked about their behaviors change towards the weight loss. From the 399 respondents, for most of the study subjects, 381 (95.94%); it was not cleared if their behaviors will reduce the risk of becoming obese, whereas, 2.76% had the perception about their behaviors for reducing the risk of becoming obese. (See Table 8 and Figure 12).

Table 13: -Obesity Practices and Care-Seeking Behaviors of the participants.

Obesity Practices and Care-Seeking Behaviors			
Do you consider the risk of obesity while consuming various foods?	Responses		
	Yes n (%)		No n (%)
	213 (53.38)		186 (46.62)
Do you exercise for the sick of not becoming obese?	Yes n (%)		No n (%)
	130 (32.58)		269 (67.42)
How you tried to lose the weight in the past?	Yes, many time n (%)	Yes, occasionally n (%)	No, never n (%)

	80 (20.05)	235 (58.90)	84 (21.05)
Do you think you can change your behaviors to reduce the risk of becoming obese?	Yes n (%)	No n (%)	Don't know n (%)
	11 (2.76)	7 (1.75)	381 (95.49)

Though, it is generally not possible to markedly reduce weight in severely obese patients, surgical treatment (e.g. gastric bypass, gastroplasty, jaw-wiring) to reduce the absorption of food, with successes to some extent, but accompanied by other health discrepancies.

In this study, when respondents were asked about their opinion if they are found to be obese. 43% of the respondents indicated that they will visit the doctor and 25% of the respondent said that they will adopt a comprehensive measure of dieting and physical exercises for the control and prevention of overweight and obesity. (See Figure 12).

Discussions: -

The purpose of the study was to explore the lifestyle choices of the adult obese associated with weight gain and obesity who present to Estiqlal hospital for care-seeking or nursery purposes in Kabul Afghanistan.

Lifestyle choices play a major role in weight control. Harmful eating behaviors are transferred in families; as bad eating habits are learnt from parents. Obesity in childhood can lead to weight-related health consequences in adulthood, showing that learned unhealthy eating habits and other lifestyles continue into late life.

The finding of the study revealed a little bit differences in BMI measurement among the male and female respondents of the study and showed that women are more likely to get obese than men. The findings of the study in this regard are in line with, USA study in Framingham, in which men were found to gain most weight between the ages of 25 and 35 years, while women gain most between 45 and 49 years of age. It has been claimed that women's BMI increases with successive pregnancies. On the other hand, in many developing countries, consecutive pregnancies at short interval are often associated with weight loss rather than weight gain. In Afghanistan women particularly in urban areas rather than in rural areas have inactive lifestyle, whereas, this kind of lifestyle is contributor factor for weight gain and obesity enhancement.

If we compare the findings of our survey with a study conducted in Kingdom of Saudi Arabia (KSA), we will perceive a slight difference that overweight is significantly more prevalent in males (42.4%) compared to 31.8% of females, while in our study females (1.15%) are more likely to overweight gain than in male, but in class one obesity study findings indicates that male (78.60%) are more likely than females. While in class two and class three obesity as sever (gross) obesity the findings of our study in male 17.39% and in female 49.87% are in line with KSA study where females were significantly more obese with a prevalence of 44% than males 6,4%. Our study finding approximately overlap the prevalence from the global perspective, as in 2016, 39% of aged 18 years and over (39% of men and 40% of women) were overweight. Overall, about 13% of the world's adult population (11% of men and 15% of women) were obese in 2016. (17)

In national level if we compare the finding of the survey with a study which was conducted using WHO STEP wise approach among adults of age group of 25-70 years in November 2015 in Kabul city, the slight similarity is existed from sex aspect. Out of 1172 study subjects, 599 (51.1%) were females and 573 (48.9%) males. The prevalence of overweight was 36.9% with differentiation of male 32.7% and female 41.2% and the prevalence of obesity was 20.6 % with differentiation of obesity stage I, 14.8% obesity stage II, 4.2% and obesity stage III, 1.6. (10)

Obesity can occur at any age, and generally increase with age. Infants with excessive weight gain have an increased incidence of obesity in later life. It has been well established that most adipose cells are formed early in life and those obese infant lays down more of these cells (hyperplastic obesity) than the normal infant. Hyperplastic obesity in adults is extremely difficult to treat with conventional methods.

Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016. The prevalence of overweight and obesity among children and adolescents aged 5-19 has risen dramatically from just 4% in 1975 to just over 18% in 2016. The rise has occurred similarly among both boys and girls: in 2016 18% of girls and 19% of boys were overweight. (17)

The result of the KAP study identified the similarity with the results of other studies in regional and global aspects, as the percentage of overweight and obesity are increasing insensibly from 31 – 50 age, explicitly class one obesity in 31 – 40 age 57 (37.01%) and class two obesity in 41 – 50 age 46 (22.77%).

Findings of the study approximately overlap with a Systematic Review and Meta-Analysis Study in which a total of 144 articles with the sample size of 377858 people (134588 males and 164858 females) were enrolled in the study. The prevalence of obesity in populations above the age of 18 was estimated as 21.7% (CI 95%: 18.5% - 25%) and in populations below 18 as 6.1% (CI 95%: 6.8%-5.4%). (9)

In most affluent societies, there is an inverse relationship between educational level and prevalence of overweight. Results of the study revealed that there is a slim relationship between the education level and overweight & obesity occurrence among the respondents. As the findings showed that 42.27% of the study subjects in class one obesity and 45% of the respondents in class two obesity were ill-literate.

Finally, personal and behavioural features such as age, illiteracy and low education, low awareness, practices and attitudes like physical inactivity, sedentary lifestyle, dietary changes (imbalance between energy intake and reduction in activity without the compensatory decrease in habitual energy intake) are the risk factors that have led to weight gain and obesity development. While the presence of these factors does not guarantee that people will get obese, it makes them more susceptible.

Recommendations: -

Below are a cumulative set of recommendations, based on findings from the survey conducted in Istiqlal Hospital. These recommendations are aimed to improve public knowledge and raise awareness towards the current context regarding the overweight and obesity in Afghanistan particularly at Kabul city. Recommendations also focus on the programs and interventions to control and prevent the trend and further increase of the obesity, particularly the severe (gross) obesity among the susceptible populations.

Extend KAP survey to other regions, applying the same research protocol

Many searches and efforts were done to find national level literature; unfortunately, not able to find specific national literatures related to the topic of the study. Despite lack of reliable data regarding the obesity prevalence, the available data has a lot of variations. Therefore, this kind of surveys should be conducted in other sites and cities of the country as to draw up a comprehensive picture towards the current situation of overweight and obesity.

Raise awareness population about the health results and outcomes of obesity.
In general, poor information and awareness regarding the obesity and its effects on health paws the way for weight gain and obesity. Hence, awareness raising programs should be boosted up through multi-sectorial approach (Ministry of Education, Ministry of Higher Education, and Ministry of Public Health,) and various channels such as Mass media, social media, scientific conference and etc… As the respondents' awareness and lack information are the contributory factors in increasing the prevalence of obesity of the society, as revealed in this study.

Extend awareness programs in order that bring apparent changes in dietary regimes. Public should be kept informed of the food products and their usage. Relevant institutions and organization should initiate and re-organized the awareness raising programs and campaigns according the ground realities as to increase the knowledge and awareness of the societies about the health outcomes of the obesity. An appropriate community level awareness raising and BCC (Behaviour Change Communication) campaign shall be initiated to increase the knowledge of public in   regard of obesity and change the unhealthy lifestyles4. Increased physical activities

This is an important part of weight control program. Regular physical exercise is the key to an increased energy expenditure. Thus, families should persuade their members to exercise regularly for weight losing and obesity prevention purposes. It is of crucial importance to increase the sports facilities, parks, other welfare facilities and to inform people of the existence and locations of these facilities, by state government, provincial authorities, municipalities and other entities. As this revealed in this studies that most of the respondents do not do exercise and

not aware of the facilities, where can do exercises. Health education regarding obesity should be provided to all overweight and obese clients who come to health facilities

Limitations: -
1. Although there were no any major limitations in conducting this research in the mentioned Hospital, but
2. People reactions were slightly strange to these activities. This might be due to people are not used to such procedures and they are neither asked nor participated.
3. The desire of participations was low. This may be because the issue of obesity was not important for them as they or their closed ones were in acute conditions or lack of lack information about the consequences of obesity.
4. The co-occurrence of several blasts in the vicinity of Hospital during the data collection time, which caused high flow of casualties to the Hospital also affected the data collection.

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