Analyzing the Health Risks of Obesity: A Quantitative Study of Lifestyle and Well-being Among University Students

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Abstract

Obesity is a growing public health concern with significant implications for individual well-being, particularly among university students who are often at risk due to lifestyle changes and dietary habits. This study investigates the impact of obesity on the health of students at the University of Chenab, Gujrat, employing a quantitative research methodology to provide a comprehensive analysis of health outcomes related to obesity. Utilizing a sample of 100 students from various departments, including Pharmacy, Biotechnology, and IT, the research integrates descriptive statistics, correlation tests, and multivariate analysis to uncover patterns and relationships. Key findings reveal that a notable proportion of students are aware of obesity-related health risks such as hypertension (23.4%) and cardiovascular disease (18.8%), though awareness of other risks like cancer remains low (0.6%). The study identifies a significant portion of the population engaging in sedentary behavior (22.7%) and highlights a range of dietary habits, with 30.5% of respondents maintaining a balanced diet. Notably, 82.5% of participants reported no medication use, while lifestyle factors and dietary choices varied widely. Factors contributing to obesity among students include poor dietary habits (12.3%) and lack of physical activity (24.7%). Health conditions observed include type 2 diabetes (2.6%), hypertension (7.1%), and mental health issues (13.6%). The results underscore the complex interplay between lifestyle, dietary practices, and health outcomes, providing valuable insights into the current state of student health in Gujrat. This research contributes to the understanding of obesity's multifaceted impact on student health and offers a foundation for future studies aiming to address obesity-related challenges within academic environments. The findings emphasize the need for targeted health interventions and educational programs to mitigate the adverse effects of obesity and promote healthier lifestyle choices among university students.

1. Introduction

Obesity is an increase in the lipid content of the body mainly reflected in an increase in adipose tissue. "Increase" can be operationally defined either as an increase above the average of a specific "normal" population, or an increase above a putative optimum or "ideal" level of body fat at a given height. The basis for defining obesity is measurement of total body lipid (body fat) or adipose tissue. The only method for exact determination of body lipid would be chemical analysis of whole human carcasses, which apart from its emotional constraints is extraordinarily cumbersome. Furthermore, the selection of cases is so limited that the relevance to a living obese population is questionable (Kral & Heymsfield, 1987).

2. Classification of obesity based on BMI

Table1: BMI Range (Nuttall, 2015).

BMI	Weight status
Below 18.5	Underweight
18.5-24.9	Healthy
25.0-29.9	Overweight
30.0 and higher	Obesity

1.1. History

The accrued evidence for a multifactorial etiology of obesity notwithstanding, the available information from thermodynamics of food metabolism has clearly established what had long been intuitively assumed—that in the final analysis. The cause of excess subcutaneous and visceral fat deposition in an individual is the cumulative effect of an imbalance between the energy of ingested food and that expanded in the course of daily activities. 1, 2, 3 Essentially, the deposition of fat is an adaptive (Eknoyan, 2006; Pott et al., 2009).

1.2. Background

Obesity is a significant global health crisis, including in Pakistan, where it has adverse effects on public health. Prevalence rates of overweight and obesity among adults in Pakistan have increased notably in recent decade.

The rise in obesity rates is attributed to genetic predisposition, adoption of a Westernized diet high in processed foods and saturated fats, and sedentary lifestyles due to rapid urbanization and technological advancements. Understanding the multifaceted factors contributing to obesity among Pakistanis is crucial for developing effective interventions and policies to address this growing epidemic (Pott et al., 2009).

1.2.1. Background of obesity in Pakistan

Pakistan is a country where people's perceptions of a healthy diet vary. Pakistani diets are often energy dense, with a greater percentage of saturated fats, trans fatty acids, and free sugar contributing to a high caloric intake. Ghee consumption, a substantial meat intake, and the prudent use of sweets in commemorating important life events are all traditional dietary patterns in Pakistan. Due to rising prices of staple foods such as cereal, vegetables, and fruits, most people prefer cheaper sources of energy such as fats and sugars. The use of industrially processed food, fast food, junk food, and sugared fizzy drinks is becoming increasingly popular among the younger generation(Shabana & Hasnain, 2015; Tanzil & Jamali, 2016).

According to a WHO survey, over 26% of women in Pakistan suffer from obesity while it affects only 19% of men. According to the 2013 report, the rate was 28% for men and 38% for women, indicating a significant gender discrepancy (Pott et al., 2009).

Obesity rates are greater in urban regions (56% in males and 67% in women) than in rural areas. Obesity is increasing rapidly among young people as well. According to 2013 figures, it was 10%, which is a big number. In 2010, around 3.4 million people died due to obesity. Rapid urbanization and modernization are also leading to the constructive high fat diet rather than the conventional low fat diet. Pakistan, as the ninth most obese nation, requires adopting a national strategy to combat obesity in its population by implementing the suggestion of the WHO worldwide strategy on diet, physical activity, and health (Shabana & Hasnain, 2015; Tanzil & Jamali, 2016).

1.3 Risk Factors of Obesity

Figure No:01 Risk factor associated with Obesity (Hebebrand, 2009).
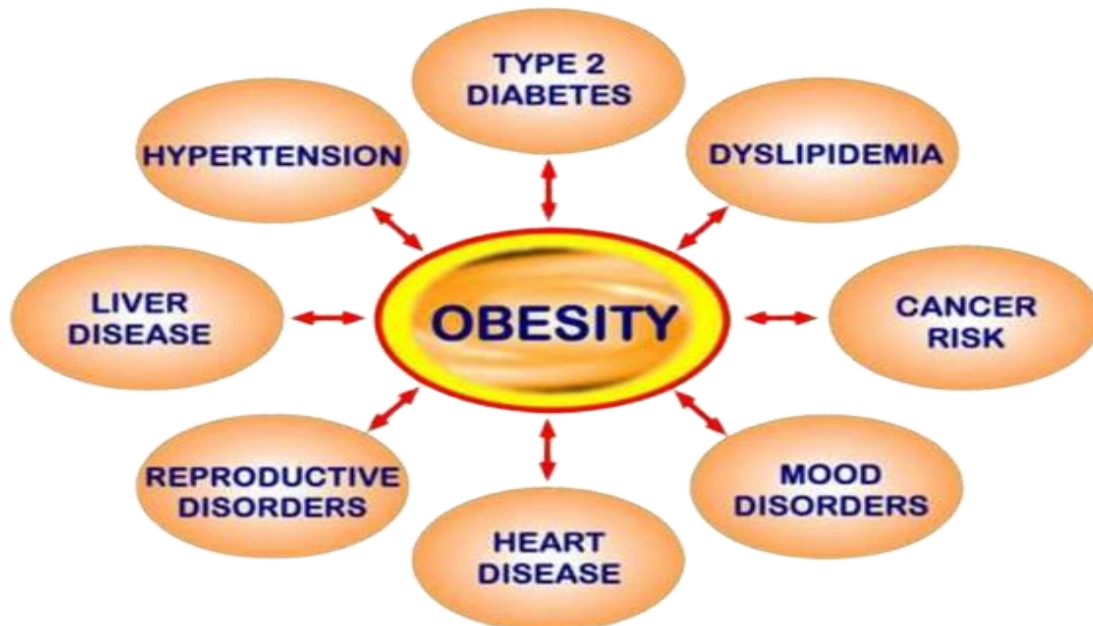
1.3.1. High stress levels

Stress affects the brain. It also triggers the release of hormones, such as cortisol, which helps to control energy use and hunger. These hormonal changes may cause a person to eat more and their body to store more fat (Adam & Epel, 2007).

1.3.2. Lack of sleep

Studies have shown that sleep deprivation and obesity share a bidirectional link. Lack of sleep may lead to fatigue and lower capacity to exercise, along with changing chemicals in the body that can promote weight gain. Meanwhile, obesity may increase a person's risk of experiencing sleep disorders. In other words, experiencing one condition may increase the risk or worsen the effects of the other condition (Cooper et al., 2018).

1.3.3. Certain health conditions

Some health conditions that can lead to obesity include, Cushing's syndrome, polycystic ovary syndrome, underactive thyroid, other conditions that limit activity levels or cause changes to metabolism (Uzogara, 2017).

1.3.4. Environment and social factors

Different studies have looked at the effect that a person's ethnicity, gender, and socioeconomic status have on obesity risk .According to a 2019 article, multiple environmental factors can interact with each other and increase obesity risk. They include, food availability — some people may live in "food deserts," where they lack access to fresh, healthy food options or have higher availability of fast food or processed foods, food perceptions — some people believe that calorie-dense and nutrient-deficient foods are more affordable, lack of access to sidewalks, green spaces, parks, or other areas that may encourage more physical activity, higher crime rates, changes in work environments, so people are less physically active, social inequalities that can lead to food insecurity and disruptions in dietary patterns .These factors can play a complex role, with each interacting with the others to create an environment that may make obesity more likely. They may also disproportionately affect certain groups, including, females, particularly if they are non-Hispanic Black, non-Hispanic Asian, or Hispanic, people living in rural neighborhoods, people with low income, people with less education (Hebebrand & Hinney, 2009).

1.3.5. Unhealthy eating habits

Unhealthy eating habits can lead to weight gain and obesity. Poor eating habits include, eating more calories than necessary, consuming foods containing high amounts of
added sugar (less than 10% of total daily calories should come from added sugar), eating foods high in saturated fat (less than 10% of daily calories should come from saturated fat) (Pan et al., 2006) (Al-Jawaldeh & Abbass, 2022).

1.3.6. Lack of physical activity

Physical activity can play an important role in keeping a person healthy and preventing obesity. A rise in sedentary lifestyles due to urbanization, access to transportation, changing employment, and lack of physical movement may have contributed to the global increase in obesity, A person can make small changes to start ingoing for short walks, playing a sport recreationally (Pan et al., 2006).

1.3.7. Certain medications

Different medications may contribute to weight gain. Some common examples of medications that can cause weight gain include, antipsychotics, insulin, beta-blockers, antidepressants, some forms of birth control, glucocorticoids .If a person gains weight while taking any medications, they may decide to speak with a doctor about different medication options that do not cause weight gain. Alternatively, a healthcare professional may be able to help a person manage their weight safely while they use medications (Newcomer, 2007).

1.3.8. Genetics

A person's genes can also play a role in obesity and weight gain. According to a 2021 study, at least 15 different gene defects account for monogenic obesity cases, which refers to obesity that results from a deficiency or mutation of one particular gene. The authors also noted that thousands of variants in genetics make it difficult to treat and prevent genetically based obesity (Speakman, 2004).

1.4. Eating Disorders
1.4.1. Anorexia

Anorexia also called anorexia nervosa, can be a life-threatening eating disorder. It includes an unhealthy low body weight, intense fear of gaining weight, and a view of weight and shape that is not realistic. Anorexia often involves using extreme efforts to control weight and shape, which often seriously interfere with health and daily life (Sowińska-Przepiera et al., 2019).

Anorexia may include severely limiting calories or cutting out certain kinds of foods or food groups. It may involve other methods to lose weight, such as exercising too much, using laxatives or diet aids, or vomiting after eating. Efforts to reduce weight can cause severe health problems, even for those who continue eating throughout the day or whose weight isn't extremely low (Sowińska-Przepiera et al., 2019)

1.4.2. Bulimia

Bulimia also called bulimia nervosa, is a serious, sometimes life-threatening eating disorder. Bulimia includes episodes of bingeing, commonly followed by episodes of purging. Sometimes bulimia also includes severely limiting eating for periods of time. This often leads to stronger urges to binge eat and then purge. Bingeing involves eating food — sometimes an extremely large amount — in a short period of time. During bingeing, people feel like they have no control over their eating and that they can't stop. After eating, due to guilt, shame or an intense fear of weight gain, purging is done to get rid of calories. Purging can include vomiting, exercising too much, not eating for a period of time, or using other methods, such as taking laxatives. Some people change medicine doses, such as changing insulin amounts, to try to lose weight. Bulimia also involves being preoccupied with weight and body shape, with severe and harsh self-judgment of personal appearance (Mohajan & Mohajan, 2023).

1.4.3. Binge-eating disorder

Binge-eating disorder involves eating food in a short amount of time. When bingeing, it feels like there's no control over eating. But binge eating is not followed by purging. During a binge, people may eat food faster or eat more food than planned. Even when not hungry, eating may continue long past feeling uncomfortably full. After a binge, people often feel a great deal of guilt, disgust or shame. They may fear gaining weight. They may try to severely limit eating for

periods of time. This leads to increased urges to binge, setting up an unhealthy cycle. Embarrassment can lead to eating alone to hide bingeing. A new round of bingeing commonly occurs at least once a week (Giel et al., 2022).

1.4.4. Complications of obesity

People with obesity are more likely to develop a few potentially serious health problems, including, heart disease and strokes Obesity increases your chance of having high blood pressure and bad cholesterol levels, both of which are markers for heart disease and stroke., Type 2 diabetes. Obesity can change how the body uses insulin to regulate blood sugar levels. This increases the risk of insulin resistance and diabetes, Certain cancers. Obesity can raise the risk of cancer of the uterus, cervix, endometrium, ovary, breast, colon, rectum, esophagus, liver, gallbladder, pancreas, kidney and prostate., Digestive problems. Obesity raises the risk of having heartburn, gallbladder disease, and liver difficulties., Sleep apnea .Obese people are more likely to suffer sleep apnea, a potentially dangerous condition in which breathing regularly stops and starts while sleeping, Osteoarthritis. Obesity increases the load on weight-bearing joints. It also stimulates inflammation, which causes swelling, pain, and a sensation of heat in the body. These risks may result in consequences like osteoarthritis, Fatty liver disease Obesity raises the risk of fatty liver disease, a disorder caused by excessive fat deposits in the liver. In some circumstances, this might result in severe liver disease, known as liver cirrhosis (Kopelman, 2000).

1.5. Pathophysiology of obesity

Pathophysiology of obesity is the study of disordered physiological processes that cause, result from, or are otherwise associated with obesity.

A number of possible pathophysiological mechanisms have been identified which may contribute in the development and maintenance of obesity (Zhang et al., 2014).

1.5.1. Appetite

Leptin and ghrelin are thought to have complimentary effects on appetite, with ghrelin produced by the stomach modifying short-term appetitive control (e.g., eating when the stomach is empty and stopping when the stomach is stretched). Adipose tissue produces leptin, which signals the body's fat storage reserves and regulates long-term appetitive regulation. Although leptin injection may be beneficial in a small fraction of obese people who are deficient in leptin, the majority of obese people are assumed to be leptin sensitive and have high leptin levels This resistance is assumed to be one of the reasons why leptin administration has not been found to be successful in decreasing hunger in the majority of obese people. Whereas leptin and ghrelin are produced peripherally, they regulate appetite via acting on the central nervous system. They, and other appetite-related hormones, primarily act on the hypothalamus, a brain area responsible for regulating food intake and energy expenditure. The hypothalamus contains multiple pathways that contribute to its role in regulating appetite, the most well understood of which being the melanocortin pathway The circuit starts with an area of the hypothalamus, the arcuate nucleus, which has outputs to the lateral hypothalamus (LH) and ventromedial hypothalamus (VMH), the brain's food and satiety centers, respectively (Hutchison, 2016).

1.5.2. Arcuate nucleus

The arcuate nucleus is made up of two separate clusters of neurons, the first group expresses both neuropeptide Y (NPY) and agouti-related peptide (AgRP), with stimulatory inputs

to the LH and inhibitory inputs to the VMH. The second group expresses both pro-opiomelanocortin (POMC) and cocaine- and amphetamine-regulated transcript (CART), with stimulatory inputs to the VMH and inhibitory inputs to the LH. As a result, NPY/AgRP neurons promote feeding while inhibiting satiety, whereas POMC/CART neurons increase both satiety and feeding. Leptin regulates both types of arcuate nucleus neurons. Leptin inhibits the NPY/AgRP group and stimulates the POMC/CART group. Thus, a deficit in leptin signaling, either through leptin deficiency or leptin resistance, leads to overfeeding and may explain for some genetic and acquired types of obesity(Parker & Bloom, 2012).

1.5.3. Immune system

Obesity has been linked to a chronic, low-quality inflammatory state known as meta-inflammation Meta-inflammation is subclinical, which means that there is an increase in circulating pro-inflammatory factors but no clinical signs of inflammation, such as heat, discomfort, or redness Meta-inflammation involves both innate and adaptive immune system cells. There are several types of obesity based on where fat cells are housed. Abdominal obesity, defined as increased fat cell formation in abdominal adipose tissue, has a stronger association with meta-inflammation .Adipose tissue evolved to operate as an immunological organ. The immune cells found in adipose tissue play a crucial role in regulating metabolism. Obesity suppresses immune cells that are necessary for maintaining metabolic homeostasis because excess fat buildup in adipose tissue affects immune cell function and quantity. Excess fat buildup can cause insulin resistance, which has been associated to meta-inflammation. Insulin resistance causes an increase in macrophages, mast cells, neutrophils, T lymphocytes, and B lymphocytes while decreasing eosinophils and certain T lymphocytes (Calcaterra et al., 2021).

1.6. Diagnosis of Obesity

**Figure No:02** Body weight chart (Tanaka, 2004)

1.6.1. Body Mass Index (BMI)

BMI is widely used as most simple and reliable way of finding out whether a certain person is obese or not according to their height. For most adults, having a BMI of 18.5 to 24.5 is a healthy

weight and a BMI of 25 to 29.5 is overweight and BMI of above 30 is considered obese. Visiting your general practitioner, your GP may ask about, Your lifestyle – particularly your diet and how much physical activity you do; they will also ask about whether you smoke and how much alcohol you drink., Any possible underlying causes for your obesity – for example, if you are taking medication or have a medical condition that may contribute to weight gain, How you feel about your weight – for example, if it makes you feel depressed or low, How motivated you are to lose weight, Your family history – as obesity and other health conditions such as diabetes, are often more common in families, As well as calculating your BMI, your GP may also carry out tests to determine whether you're at increased risk of developing health complications because of your weight., these could include measuring your, blood pressure, glucose (sugar) and cholesterol levels in a blood sample, waist circumference (the distance around your waist) (Romero-Corral et al., 2008) .

1.7. Treatment of Obesity

Figure No:03 Obesity management (Roomy, 2024)
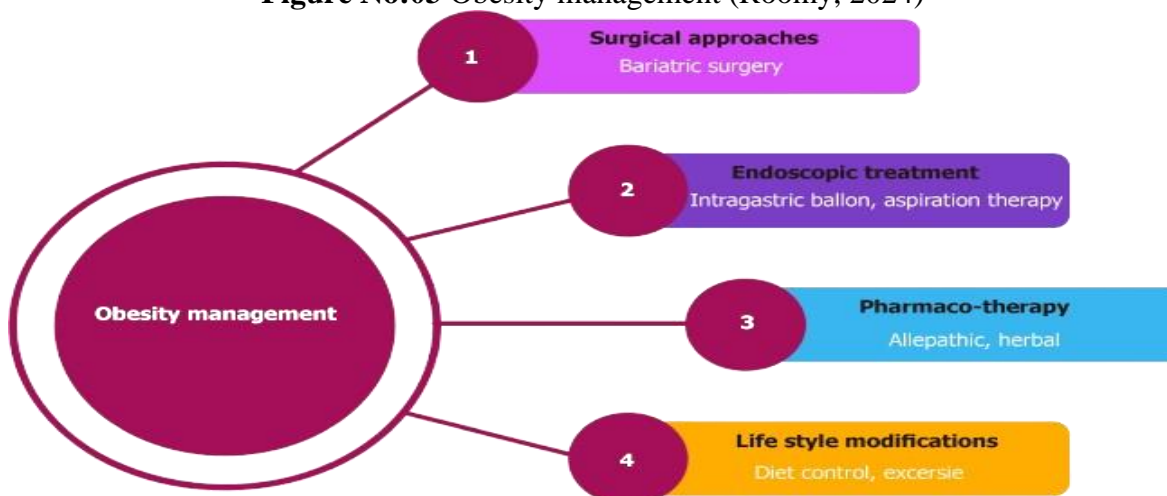
The multifaceted nature of obesity, marked by an excess accumulation of body fat, contributes significantly to chronic diseases worldwide. This review advocates for a comprehensive treatment strategy extending beyond mere caloric restriction (Thompson et al., 2007).

1.7.1. Lifestyle Modifications

Dietary Approaches Implementing a sustainable and well-balanced diet, emphasizing whole foods, fruits, vegetables, lean proteins, and whole grains, emerges as a foundational approach to weight loss. Individualized nutritional counselling is imperative to accommodate diverse dietary preferences and cultural variations, Physical Activity: Regular exercise, combining aerobic workouts, strength training, and flexibility exercises, proves crucial for both weight management and overall health. Customized exercise plans should be devised based on individual fitness levels and preferences (Manekar, 2024).

1.7.2. Behavioural Therapy

Cognitive Behavioural Therapy (CBT): Addressing the psychological factors contributing to obesity becomes paramount. CBT serves as a valuable tool in identifying and modifying negative thought patterns and behaviours associated with overeating. Therapeutic interventions must be tailored to address specific triggers and coping mechanisms (Wadden & Foster, 2000), (Hetrick et al., 2016).

1.7.3. Pharmacotherapy

Medications such as orlistat, liraglutide, and phentermine/topiramate have demonstrated efficacy in weight management. However, careful consideration of potential side effects and individual patient characteristics is crucial (Simpson et al., 2003).

1.7.4. Bariatric Surgery

Surgical Interventions: Bariatric surgery, encompassing procedures like gastric bypass and sleeve gastrectomy, presents an effective option for individuals with severe obesity or obesity-related comorbidities. A thorough preoperative assessment and postoperative support are indispensable for successful outcomes (Chacon et al., 2022).

2. Literature Review

Maciej Banach et al. (2018) study protocol, registered with PROSPERO, aimed to identify prevalence studies in Asian countries focusing on children and adolescents from January 1, 1999, to May 30, 2017. Among over 22,000 identified citations, 41 studies met the inclusion criteria, totaling a sample size of 71,998 children and 353,513 adolescents Given the associated health risks and the burden on healthcare systems, the study emphasizes the urgent need for the implementation of monitoring and prevention programs to address unhealthy weight gain in this population throughout Asian countries (Banach et al., 2018).

Kumar et al. (2017) worked on obesity development, epidemiology, factors, health hazards, and management. They described that Obesity, regarded as a complex and multifactorial disease, was globally experienced by individuals, stemming from a combination of genetic predisposition, dietary habits, lifestyle choices, and environmental influences. This condition was noted for triggering a cascade of diseases, including diabetes, hypertension, cardiovascular diseases, stroke, osteoarthritis, sleep apnea, certain cancers, and inflammation-related ailments. Natural products, with their potential for synergistic effects and multi-targeted actions, were seen to hold promise in combating obesity (Kumar & Kelly, 2017).

Sana Tanzil and Tanzil Jamali (2016) conducted a study on 'Obesity, an emerging epidemic in Pakistan'. They describe that Pakistan is suffering from epidemic of obesity, affecting all age groups. Urban population, particularly women shows considerable higher burden of obesity as compared to men and women from rural population. However, among children and adolescents there is variation in prevalence of obesity. Effective interventions are required at population level to prevent and control this emerging public health issue (Tanzil & Jamali, 2016).

Rosin et al. (2008) they describe that over the last 30 years, obesity rates were dramatically increased. The rising obesity was developed into a significant worldwide public health problem with notable economic and social consequences. In this paper, a broad survey of the recent and growing economic literature on the causes of obesity was provided. The literature, encompassing both theoretical and empirical approaches, aimed to explain the rising trend of obesity and to identify the factors contributing to it. Understanding the causes of obesity allowed for the consideration of policies that might have stemmed the global increase in obesity (Rosin, 2008).

D. J. Nanan(2002) worked on 'The obesity pandemic--implications for Pakistan' .He describe that In South Asia, including Pakistan, social and environmental changes are occurring rapidly, with increasing urbanization, changing lifestyles, higher energy density of diets, and reduced physical activity. The coexistence of underweight in early life with obesity in adults may presage both a higher prevalence and incidence for noncommunicable diseases (NCDs) such as hypertension and diabetes (Nanan, 2002).

They describe that an increase in the number of obese Americans, defined by a body mass index (BMI) of 30 or higher, was noted. While it was widely acknowledged that weight gain resulted from a caloric imbalance—wherein more calories were consumed than expended—the underlying reasons for the dramatic surge in obesity prevalence remained unclear. Findings revealed that cigarette smoking emerged as the factor with the most substantial impact: the decline in cigarette smoking accounted for about 2% of the increase observed in weight measures over time. (Monda et al., 2013) .

3. Material and Methodology
3.1. Introduction
In this chapter we discuss about the research methods including (Type of research, Population, Sample Size, Sampling Scheme, Research Design, Data Collection Tool, Description of Data Collection Tool, Data Analysis, Software, Limitations of Study), and apply the descriptive statistics, multivariate analysis of variances and correlation tests.

3.2. Type of research
Methodology plays an important role in applied research. To achieving objectives and find out their answer to a research question always used an appropriate research method. I use a quantitative research methodology for my research because it is a structured predetermined methodology and reliable for my objectives and it explain clearly my opinion and nature of issue. According to this methodology our results are necessary.

3.3. Population
In this study we want to find the impact of obesity on students' health in Gujrat city. My population was Gujrat City but due to shortage of time I take perception about impact of obesity on students from University of Chenab. My target population is University of Chenab and my sampled population, from where I take samples it is University of Chenab Gujrat.

3.4. Sample size
I take 100 samples because of the shortage of time I was unable to take a large sample and draw conclusion on the bases of the large sample.

3.5. Sampling scheme
In my study, Simple Random sampling technique was applied. Because I have University of Chenab as population then I take 100 samples as Simple random sampling. By this I got data from different departments. For Example: Pharmacy, BDNS, Biotechnology, IT, English, DPT, Nursing and MIT etc.

3.6. Data collection tool
Data collection tool is helpful for our research because they present picture of our work and help us to get information, clarify the process and identify the methods. By systematic data

collection tool one can get good and accurate results for their research or study. To get more accurate and appropriate results following data collection tools can use.

There are six types of data collection tools Questionnaire, Interview, Focus group discussion, Surveys, E-mails, and Observation

Questionnaire:

I conduct a method of questionnaire for collecting the data because it is structured approach. Because of the shortage of time, I was unable to interview 100 people and then collect data. Questions are based in five order Likert scales that have categories of strongly disagreeing, disagree, neutral, agree and strongly agree.

3.7. Research design

There are 3 types of research design like Cross Sectional Design, Longitudinal Design & Experimental Design.

3.7.1. Cross sectional design

Research design is a strategy to investigate the answer of a research questions properly and validly. I use the cross sectional study for my research because I just evaluate the impact of obesity on students' health in current time period.

3.8. Data analysis techniques

For univariate analysis I perform descriptive statistics (frequency distribution, bar chart Pie Chart). And use correlation test for bivariate analysis. About impact of obesity on students' health I apply the frequency distribution on each variable individually and check the frequency. We take sum of the five Likert scale variables and make indexes; on these indexes I apply Pearson test because our data is normal. We use a software SPSS 16.0 version for our research analysis.

4. Results and discussion

In this chapter we discuss about our research results by using the descriptive statistics. All the output result is shows in Appendix A and B.

4.1. Descriptive statistics

I use descriptive statistics to construct the characteristics of collected data. These statistics provide the basic needed information about the data, and result is shown in the appendix-II. These statistics can understandable easily through the appendix table.

4.2. Respondents gender and awareness of health risks caused by obesity

Table 2 shows the gender of the respondents. There are 61 males and 93 females respond the answers out of 154 respondents. Table 3 shows the awareness of health risk caused by obesity. There are 16.9% respondent who are aware of Type 2 diabetes caused by obesity,23.4% respondents are aware of hypertension caused by obesity,18.8% respondents are aware of CVD,0.6% did cancer, 5.2% respondent did sleep apnea,1.3% did osteoarthritis,13% respondent faces mental issue, and 20.8% respondents did not know any health risk caused by obesity.
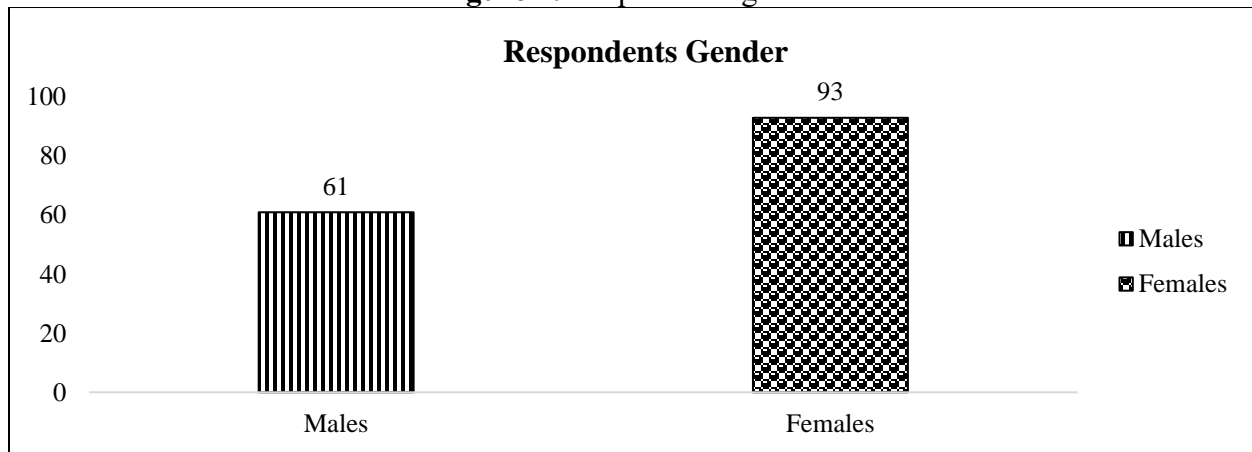
Figure 4: Respondents gender

Table 2: Respondents gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	61	39.6	39.6	39.6
	Female	93	60.4	60.4	100.0
	Total	154	100.0	100.0	

Figure 5: Awareness of risk factors
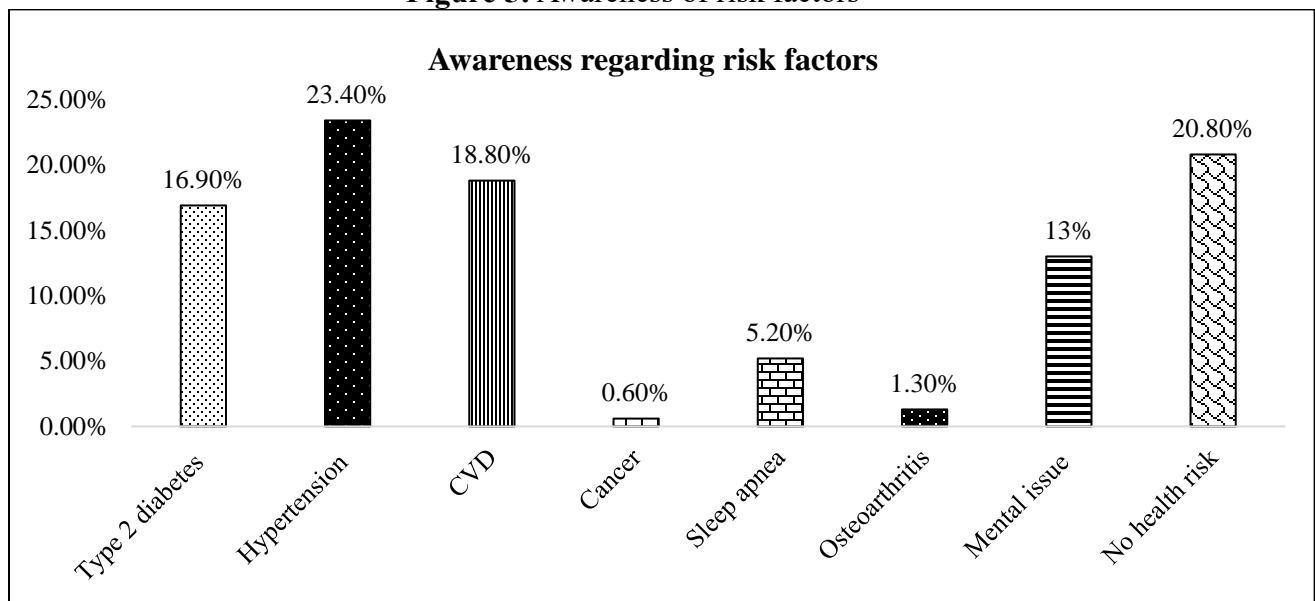
Table 3: Awareness regarding the risk factor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	type 2 diabetes	26	16.9	16.9	16.9
	hypertension	36	23.4	23.4	40.3
	CVS	29	18.8	18.8	59.1
	cancers	1	.6	.6	59.7
	sleep apnea	8	5.2	5.2	64.9

osteoarthritis	2	1.3	1.3	66.2
mental issue	20	13.0	13.0	79.2
none	32	20.8	20.8	100.0
Total	154	100.0	100.0	

4.4. Medications and lifestyle regarding physical activity in daily routine

Table-III shows the medications. There are 2.6% respondents who are taking antidepressents,2.6% are taking antipsychotics. 3.2% are taking corticosteroids,8.4% are taking painkillers. There are 82.5 % respondents who are taking no medication. Table-IV shows Lifestyle regarding physical activity in daily routine. 22.7 % respondents who did sedentary (little to no physical activity). 50.6% are lightly active ,14.9 % are moderately active and 11.7% are very active.
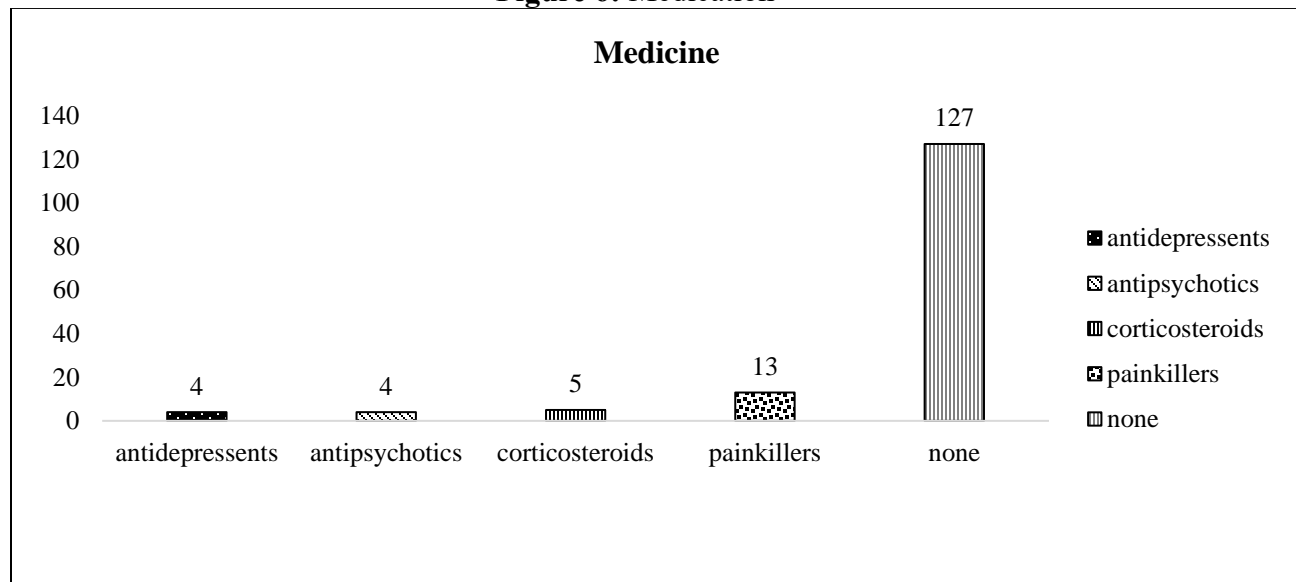
Figure 6: Medication

Table 4: Medication

		1	.6	.6	.6
	antidepressants	4	2.6	2.6	3.2
	antipsychotics	4	2.6	2.6	5.8
Valid	corticosteroids	5	3.2	3.2	9.1
	painkillers	13	8.4	8.4	17.5
	none	127	82.5	82.5	100.0
	Total	154	100.0	100.0	
		Frequency	Percent	Valid Percent	Cumulative Percent

Figure 7: Physical activity

Physical activity bar chart: Sendatory 35, Lightly active 78, Moderately active 23, Very active 18
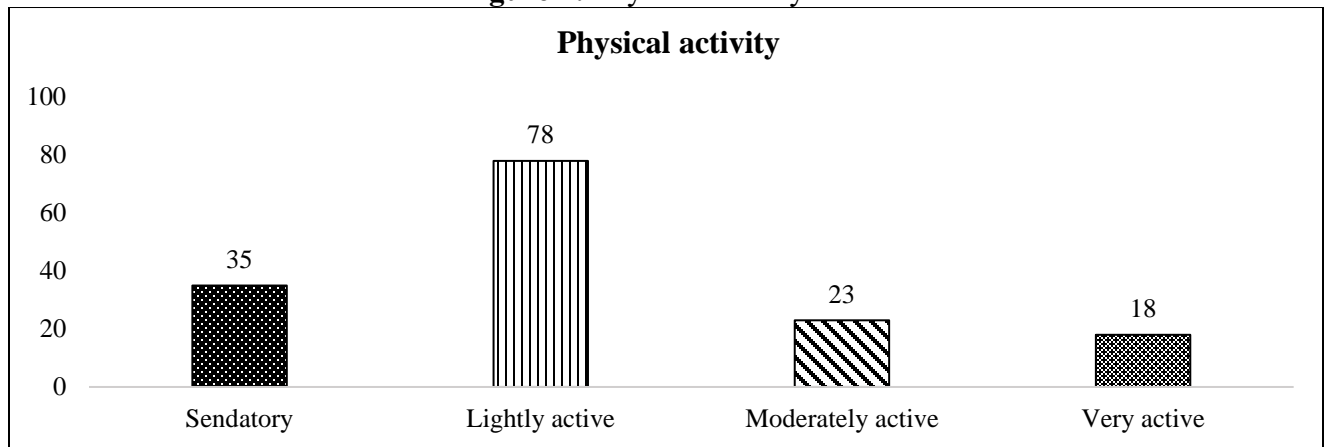
Table 5 : Physical activity

		Frequency	Percent	Valid Percent	Cumulative Percent
	Sedentary	35	22.7	22.7	22.7
	Lightly active	78	50.6	50.6	73.4
Valid	Moderately active	23	14.9	14.9	88.3
	Very active	18	11.7	11.7	100.0
	Total	154	100.0	100.0	

4.6. Factors causing Obesity

Table-V shows factor causing obesity. There are 12.3% respondents who did poor dietary habits, 24.7% did lack of physical activity,20.1 % did genetics ,9.1% did socioeconomics factor,14.3% did physiological factors,14.9 % did increase fast food consumption.
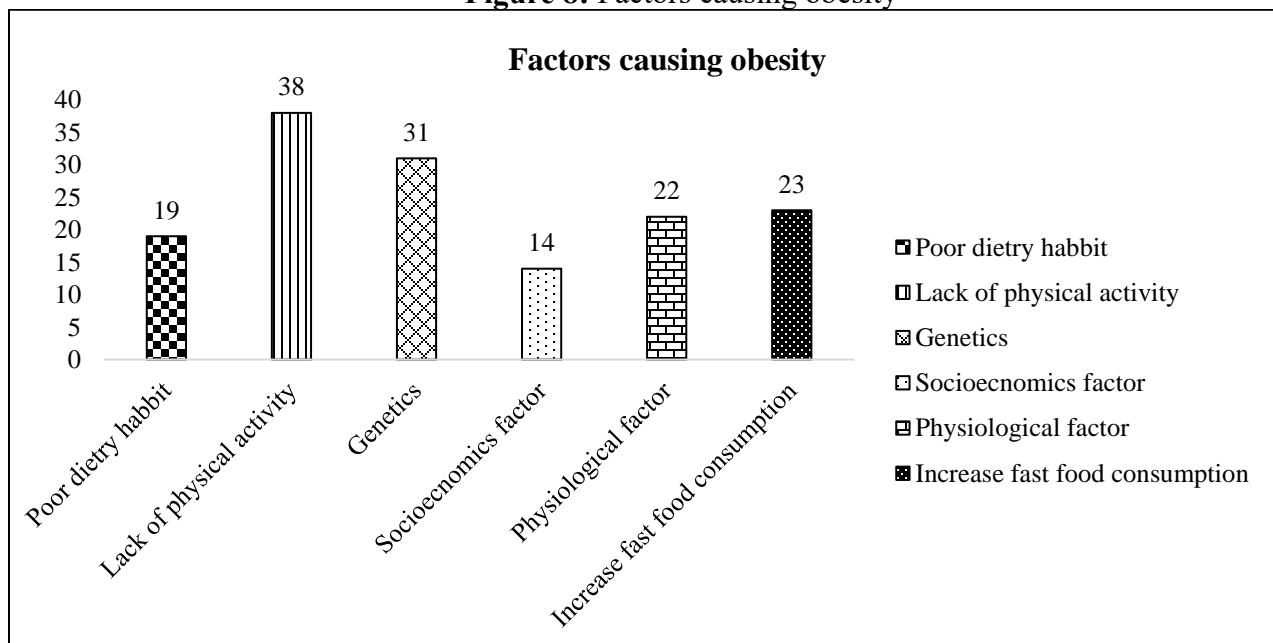
Figure 8: Factors causing obesity

Factors causing obesity bar chart: Poor dietry habbit 19, Lack of physical activity 38, Genetics 31, Socioecnomics factor 14, Physiological factor 22, Increase fast food consumption 23

Legend:
- Poor dietry habbit
- Lack of physical activity
- Genetics
- Socioecnomics factor
- Physiological factor
- Increase fast food consumption

Table 6 : Factors causing obesity

		Frequency	Percent	Valid Percent	Cumulative Percent
		6	3.9	3.9	3.9
	poor dietary habits	19	12.3	12.3	16.2
	lack of physical activity	38	24.7	24.7	40.9
	genetics	31	20.1	20.1	61.0
Valid	socioeconomics' factor	14	9.1	9.1	70.1
	physiological factor	22	14.3	14.3	84.4
	increase fast food consumption	23	14.9	14.9	99.4
	33.00	1	.6	.6	100.0
	Total	154	100.0	100.0	

4.7. Dietary habits in daily routine

Table-VI shows Dietary habits in daily routine. There are 13.6% respondents who are taking diet high in processed food and sugars, 30.5% are taking balanced diet, 14.3% are taking diet low in fruits and vegetables, 11.7% are taking diet high in fats and oils and 7.8% are taking diet low in proteins.
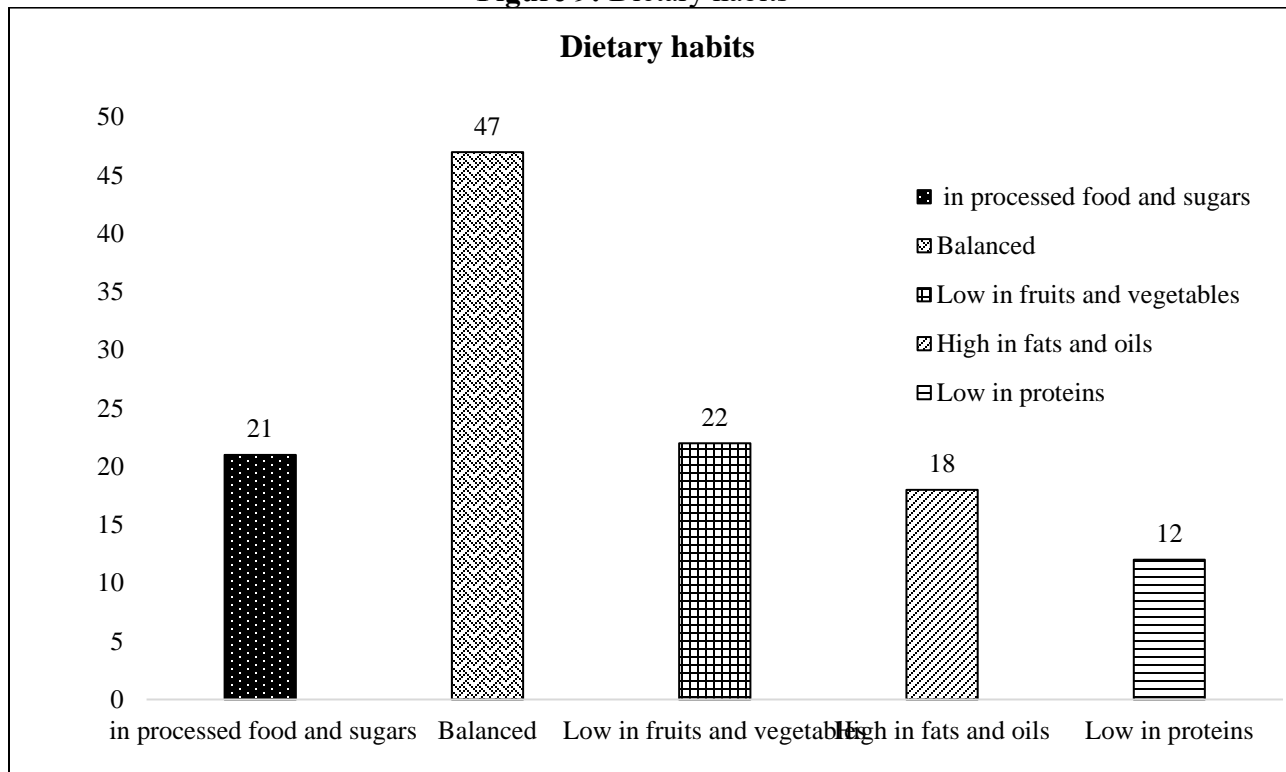
Figure 9: Dietary habits

Table 7: Dietary habits

		Frequency	Percent	Valid Percent	Cumulative Percent
		34	22.1	22.1	22.1
	high in processed food and sugars	21	13.6	13.6	35.7
Valid	balance	47	30.5	30.5	66.2
	low in fruits and vegetables	22	14.3	14.3	80.5
	high in fat and oils	18	11.7	11.7	92.2
	low in proteins	12	7.8	7.8	100.0
	Total	154	100.0	100.0	

4.8. Current Health conditions

Table-VII shows current health conditions. There are 2.6% respondents who have type 2 diabetes,7.1% have hypertension,2.6% have cardiovascular diseases,13.6% have mental issues,4.5% have asthma. There are 65.6% respondents who have other health conditions.

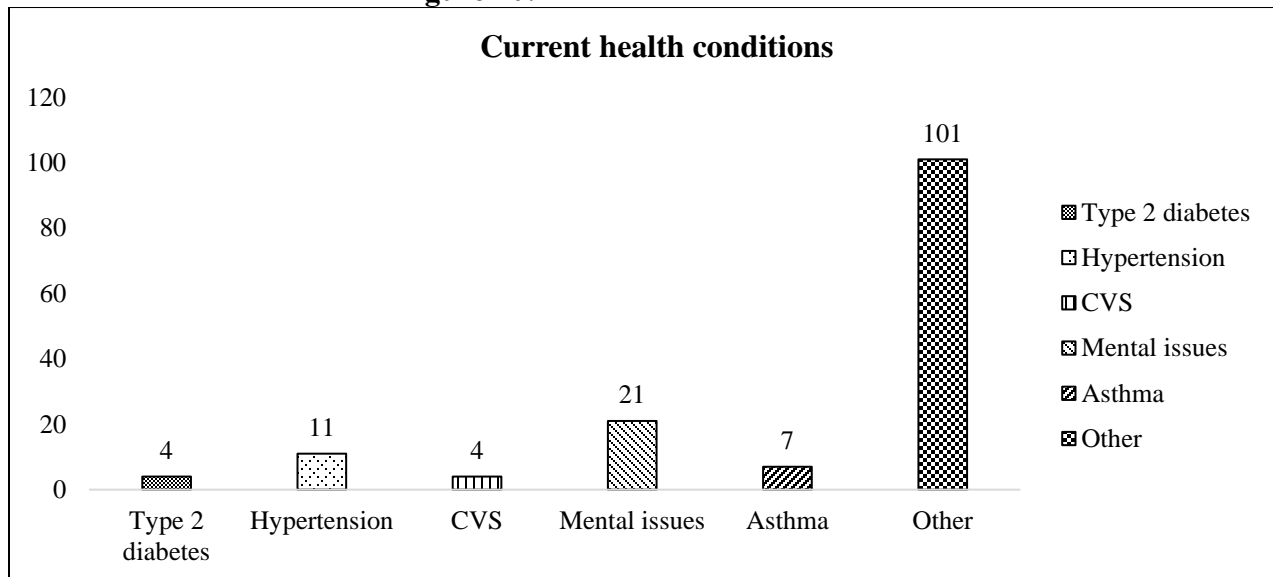**Figure 10:** Current health conditions

Table 10: Current health conditions

		Frequency	Percent	Valid Percent	Cumulative Percent
		6	3.9	3.9	3.9
	type 2 diabetes	4	2.6	2.6	6.5
	hypertension	11	7.1	7.1	13.6
Valid	cvs	4	2.6	2.6	16.2
	mental issues	21	13.6	13.6	29.9
	asthma	7	4.5	4.5	34.4
	other	101	65.6	65.6	100.0
	Total	154	100.0	100.0	

5. Conclusion

In this chapter we discuss about our research results discussion by using the descriptive statistics and correlation.

I use descriptive statistics to construct the characteristics of collected data. These statistics provide the basic needed information about the data. There are 61 male and 93 female respond the answers out of 154 who response me. There are 16.9% respondent who did Type 2 diabetes, 23.4% respondents did hypertension, 18.8% respondent did CVD,0.6% did cancer, 5.2% respondent did sleep apnea,1.3% did osteoarthritis,13% respondent faces mental issue, and 20.8% respondents did not know any health risk caused by obesity. There are 2.6% respondents who are taking anti-depressants, 2.6% are taking antipsychotics. 3.2% are taking corticosteroids,8.4% are taking painkillers. There are 82.5 % respondents who are taking no medication.

There are 22.7 % respondents who did sedentary (little to no physical activity) .50.6% are lightly active ,14.9 % are moderately active and 11.7% are very active, in response to statement showing lifestyle regarding physical activity in daily routine. There are 12.3% respondents who did poor dietary habits, 24.7% did lack of physical activity,20.1 % did genetics ,9.1% did socioeconomics factor,14.3% did physiological factors,14.9 % did increase fast food consumption, in response to statement showing factors causing obesity. There are 13.6% respondents who are taking diet high in processed food and sugars, 30.5% are taking balanced diet, 14.3% are taking diet low in fruits and vegetables, 11.7% are taking diet high in fats and oils and 7.8% are taking diet low in proteins, in response to statement showing dietary habits in daily routine.

There are 2.6% respondents who have type 2 diabetes...7.1% have hypertension,2.6% have CVD,13.6% have mental issues,4.5% have asthma. There are 65.6% respondents who have other health conditions, in response to statement showing current health conditions.

5.1. Future Recommendation

This research study can be used in different ways in further researches like any other researcher carry out this study; obesity. If anyone want to know impact in Gujrat Pakistan, then this research will be helpful for that person. He can use this as literature this will help in his research. If anyone wants to conduct study on this research topic I will just tell them that they can research on different factors of obesity.

5.2. Research implications

The research which I conduct is beneficial for the subcontractors that are struggling to those who determine the impact of obesity on health. To those who find out the "impact of obesity on various health conditions," and for those researchers who identify the "relation between obesity and patients" about their own favorite field of work.

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