بسم الله الرحمن الرحيم

Shendi University

Faculty of Graduate Studies and Scientific Research

Research about:

Obesity Health Indicators Among Patients in Intensive Care Unit in Elmek Nimer Hospital University 2016

A thesis submitted as partial fulfillment requirement of master degree in medical surgical nursing

Submitted by:

Nagla Mohammed Alamin

BSc Shendi University 2006

Supervised by:

Dr: Higazi Mohammed Ahmed Abdallah Awad

Associate professor of medical surgical nursing- Shendi university

December 2016

بسم الله الرحمن الرحيم

الآيـة

قال تعالى:-

﴿ وَظَلَّلْنَا عَلَيْكُمُ الْغَمَامَ وَأَنزَلْنَا عَلَيْكُمُ الْمَنَّ وَالسَّلْوَى كُلُواْ مِن طَيِّبَاتِ مَا رَزَقْنَاكُمْ وَمَا ظَلَمُونَا وَلَكِن كَانُواْ أَنفُسَهُمْ يَظْلِمُونَ﴾

صدق الله العظيم

سورة البقرة الآية (57)

Dedication

I have dedicated this research to my dear parents

Who gave me all efforts and facilities to my study from childhood until adulthood.

Father and Mother

To the soul of my heart really you are terrific and gentleman and thank you for supporting through out the process of completing this degree

My husband

To my children you are treasures from god and I'm blessed (my daughters)

To my dear husband who encourage me to reach this stage

To all my teachers:

Who are teaching me giving without take and patience without tedium.

Also I would like to dedicate it to my remaining brothers and sisters for their continuous assistance and help.

To all my friends:

Those who precede me and no longer with me,

Those who precede me and are still among me,

Those with me,

And to those who will follow me.

Acknowledgement

First of all I thank Allah that for giving me the strength and patience to perform this work .

Sincerest appreciation and Post gratitude to

Dr: Higazi Mohammed Ahmed

for his patience and guidance throughout the work.

A special Word of thanks:

Staff of medicine nursing staff ,intensive care unit and coronary care unit in Elmak Nimer hospital for their greater helps.

And finally I would like to extend our thanks to our families, friend's classmate.

List of abbreviation

Abbreviation	Meaning
BMI	Body mass index
CCU	Coronary care unit
DM	Diabetes mellitus
GC	Glucocorticoid
HDL	High density lipoprotein
ICU	Intensive care unit
PCOS	Poly cystic ovarian syndrome
OTC	Over the counter
VLDL	Very low density lipoprotein

مـلـخص الـدر ا سـة

هذه الدراسة الوصفية أجريت لتقييم حدوث نسبة السمنة في وحدة العناية المركزة والعناية الوسيطة بمستشفي الملك نمر الجامعي بشندي وشملت المرضي خلال فترة الدراسة، عددهم خمس وثلاثون مريضا تم تقييمهم عن طريق استبانه.وفقا للجنس والمستوي التعليمي والوظيفي تم تحليل البيانات بالطرق الإحصائية اليدوية البسيطة.وتوصلت الدراسة إلى عدة نتائج أهمها ثلثي (66%) من المرضي من النساء أكثر من الرجال أيضاً أظهرت الدراسة بأن غالبية المرضي لا يمارسون الرياضة(91%) نسبة لعدم معرفتهم بها وأكثر من النصف (60%) يعانون من السمنة وذلك بمؤشر كتلة الجسم. وجدت الدراسة أن أكثر من الربع (26%) من مجتمع الدراسة أن العوامل المؤهبة للسمنة هي العوامل المرضية للعائلة.

وجد أن أكثر الأعمار إصابة بالسمنة أكثر من 70 سنة ويمثلون نسبة45%، وأيضاً أكثر القبائل إصابة بالسمنة هي قبيلة الجعليين بنسبة 74%. أن 46% يعانون من السمنة نتيجة للحالة الاقتصادية الجيدة، أيضاً أن المتزوجون يعانون من السمنة بنسبة 77%.

وأوصت الدراسة أن ضرورة وضع برنامج تعليمي لزيادة المعرفة بأهمية الرياضة وكيفية ممارستها خلال اليوم وكبار السن اخذ الغذاء الصحي المتوازن، واخذ دورات تثقيفية عن طريق وسائل التعليم المسموعة والمرئية. وأوصت الدراسة أيضا تفعيل دور المنظمات ووزارة الصحة بوضع برامج تثقفية بانتظام للتقليل من زيادة الوزن ومخاطر السمنة خاصة مرضي القلب.

Abstract

This study was descriptive done at Elmak Nimer university hospital to assess incidence of obesity in intensive care unit on period from august to November 2016. Standard closed ended questionnaire composed fourteen (14) questions was distributed among thirty five (35) patients, and the data was analyzed manually by simple statistical method.

The result showed that, two third (66%) of study group were female, also less than half (40%) normal weight, one third(31%) over weight ,and less than quadrant (23%) class I & (6%) class II obese.

Most patients (91%) not performed physical activity& exercise, and more than tow third (71%) had developed complication of heart disease. Also more than quadrant (26%) predisposing factor result to family history.

The result revealed 45% their age more than 70 years of study group had obesity,. The result explained ,majority of study group had married.

Finally, the study was recommended that all patients about diet and how to performed exercise, used mass media and counseling about life style change modification measuring the weight regularly to prevent weight gain.

List of contents

List of tables

List of figures

Chapter One

Introduction

Rationale

Objectives

1-1 Introduction

Obesity from the age problem obesity may be defined as abnormal growth of the dispose tissue due to an enlargement of fat cell size (hypertrophic obesity) or an increase in fat cell number (hyper plastic obesity) or continuation of both obesity is often expressed in terms of today mass index (BMI). [1]

Also it is defined in terms of body mass index (BMI) of30 or more in male and 28.6 or more in female indicate obesity [2]

According to recent statistics on obesity made by the world health organization (WHO), over 1.6 billion adults worldwide are overweight and another 400 million are obese. These are big number. That is definitely a lot of people that really need to lose weight. [1]

Nurses in preventive health care are tasked with improving the health of patient through evidence based recommendation while encouraging individuals to receive preventive services. Through public health education, nurses can inspire life styles and ultimately live longer lives. Preventive health care nurses encourage[3].

Regular exercise: nurse promote regular activity (preferably 30 minutes of exercise at least five days a week) to count at heart condition, high blood pressure and other disease such as stroke, diabetes and arthritis .Weight management: Exercise also encourages weight management. Preventive care includes maintaining and controlling weight with exercise and healthy eating habits to prevent disease such as obesity cardiac vascular disease and osteoarthritis [3].

Avoidance of smoking and drug abuse: Aside from the addiction threat associated with smoking and drug use, there is the risk of lung cancer, emphysema and other form of cancer .Moderated alcohol use: Education about the effects of alcohol consumption, as early screening for diseases such as liver disease, stroke or high blood pressure, can significantly increase the chance of illness prevention. [3].

Control of existing diseases nurses involved with preventive health care work to identify existing condition in the early stages. Modifying on individual's behaviors can control or minimize the effect of particular ailment. Preventive care encompass amide range of techniques to identify, educate, prevent and treat disease in population. [(3)]

1-2 Rationale

Obesity is an endemic health problem in most developed countries reguorly serious public health attention .

Its major causes of cardiovascular disease. Cancer, diabetes mellitus type II, some disease of respiratory ,hypertension, and increase number of admission lead to complication and death [10].

Some patient have misconception about obesity they belief if person is obese is healthy, also belief the daily activity enough and not performed physical activity &exercise.

1-3 Objectives

General objective:

To Identify incidence obesity among intensive care unit patients (ICU – CCU).

Specific objective:

1. Identify the predisposing factor (health indicators) of obesity.
2. Effect on obesity of levels of age-sex-occupation –level of education.

2-Literature review

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health.

Body mass index (BMI) is a simple index of weight-for-height that is commonly used in classifying overweight and obesity in adult populations and individuals. It is defined as the weight in kilograms divided by the square of the height in meters (kg/m2) [4].

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. However, it should be considered as a rough guide because it may not correspond to the same degree of fatness in different individuals[4].

Obesity has become a burden on the health care cost, reducing quality of life with increased the incidence of cardiovascular diseases (CVD) and type 2 diabetes,1and some type of cancers [4].

2.1. Epidemiology of obesity:

Obesity is a growing epidemic in developed countries. There are an estimated 250 million obese people in the world. In the UK, nearly 25% of the adult population are obese according to data in 2006, and 66% of the population are overweight.

In the USA, 66% of adults are overweight or obese and they represent more than 30% of intensive care unit (ICU) admissions Obesity in critically ill patients is typically associated with increased morbidity and mortality [5].

2.2 Classification of obesity:

BMI	Classification
18.5 to 24.9	Normal weight
25 to 29.9	Overweight
30 – 34.9	Class 1 Obesity
35 – 39.9	Class 2 Obesity
40+	Class 3 Extreme Obesity. [1]

2.3 Causes of obesity and overweight:

What Causes Overweight and Obesity?

2.3.1-Lack of Energy Balance:

A lack of energy balance most often causes overweight and obesity. Energy balance means that your energy IN equals your energy OUT.

Energy IN is the amount of energy or calories you get from food and drinks. Energy OUT is the amount of energy your body uses for things like breathing, digesting, and being physically active [(6)].

To maintain a healthy weight, your energy IN and OUT don't have to balance exactly every day. It's the balance over time that helps you maintain a healthy weight [(6)].

The same amount of energy IN and energy OUT over time = weight stays the same More energy IN than energy OUT over time = weight gain

More energy OUT than energy IN over time = weight loss overweight and obesity happen over time when you take in more calories than you use [(6)].

Other Causes:

2.3.2-An Inactive Lifestyle:

Many Americans aren't very physically active. One reason for this is that many people spend hours in front of TVs and computers doing work, schoolwork, and leisure activities. In fact, more than 2 hours a day of regular TV viewing time has been linked to overweight and obesity [(6)].

Other reasons for not being active include: relying on cars instead of walking, fewer physical demands at work or at home because of modern technology and conveniences, and lack of physical education classes in schools [(6)].

People who are inactive are more likely to gain weight because they don't burn the calories that they take in from food and drinks. An inactive lifestyle also raises your risk for coronary heart disease, high blood pressure, diabetes, colon cancer, and other health problems [(6)].

2.3.3 Environment:

Our environment doesn't support healthy lifestyle habits; in fact, it encourages obesity. Some reasons include:

Lack of neighborhood sidewalks and safe places for recreation. Not having area parks, trails, sidewalks, and affordable gyms makes it hard for people to be physically active [6].

Work schedules. People often say that they don't have time to be physically active because of long work hours and time spent commuting.

Oversized food portions. Americans are exposed to huge food portions in restaurants, fast food places, gas stations, movie theaters, supermarkets, and even at home. Some of these meals and snacks can feed two or more people. Eating large portions means too much energy IN. Over time, this will cause weight gain if it isn't balanced with physical activity [6].

Lack of access to healthy foods. Some people don't live in neighborhoods that have supermarkets that sell healthy foods, such as fresh fruits and vegetables. Or, for some people, these healthy foods are too costly [6].

2.3.4-Genes and Family History:

Your genes also may affect the amount of fat you store in your body and where on your body you carry the extra fat. Because families also share food and physical activity habits, a link exists between genes and the environment [7].

2.3.5-Health Conditions:

Some hormone problems may cause overweight and obesity, such as underactive thyroid (hypothyroidism), cushing's syndrome, and polycystic ovarian syndrome (PCOS).

Underactive thyroid is a condition in which the thyroid gland doesn't make enough thyroid hormone. Lack of thyroid hormone will slow down your metabolism and cause weight gain. You'll also feel tired and weak.

Cushing's syndrome is a condition in which the body's adrenal glands make too much of the hormone cortisol. Cushing's syndrome also can develop if

a person takes high doses of certain medicines, such as prednisone, for long periods [7].

People who have Cushing's syndrome gain weight, have upper-body obesity, a rounded face, fat around the neck, and thin arms and legs.

PCOS is a condition that affects about 5–10 percent of women of childbearing age. Women who have PCOS often are obese, have excess hair growth, and have reproductive problems and other health issues. These problems are caused by high levels of hormones called androgens [7].

2.3. 6- Medicines:

Certain medicines may cause you to gain weight. These medicines include some corticosteroids, antidepressants, and seizure medicines.

These medicines can slow the rate at which your body burns calories, increase your appetite, or cause your body to hold on to extra water. All of these factors can lead to weight gain [7].

2.3.7 Emotional Factors:

Some people eat more than usual when they're bored, angry, or stressed. Over time, overeating will lead to weight gain and may cause overweight or obesity [7].

2.3.8-Smoking:

Some people gain weight when they stop smoking. One reason is that food often tastes and smells better after quitting smoking.

Another reason is because nicotine raises the rate at which your body burns calories, so you burn fewer calories when you stop smoking. However, smoking is a serious health risk, and quitting is more important than possible weight gain [7].

2.3.9-Age:

As you get older, you tend to lose muscle, especially if you're less active. Muscle loss can slow down the rate at which your body burns calories. If you don't reduce your calorie intake as you get older, you may gain weight [7].

Midlife weight gain in women is mainly due to aging and lifestyle, but menopause also plays a role. Many women gain about 5 pounds during menopause and have more fat around the waist than they did before [7].

2.3.10-Pregnancy:

During pregnancy, women gain weight to support their babies' growth and development. After giving birth, some women find it hard to lose the weight. This may lead to overweight or obesity, especially after a few pregnancies [7].

2.3.11-Lack of Sleep:

People who sleep fewer hours also seem to prefer eating foods that are higher in calories and carbohydrates, which can lead to overeating, weight gain, and obesity.

Sleep helps maintain a healthy balance of the hormones that make you feel hungry (ghrelin) or full (leptin). When you don't get enough sleep, your level of ghrelin goes up and your level of leptin goes down. This makes you feel hungrier than when you're well-rested.

Sleep also affects how your body reacts to insulin, the hormone that controls your blood glucose (sugar) level. Lack of sleep results in a higher than normal blood sugar level, which may increase your risk for diabetes [7].

2.4-Predisposing factors of obesity:

Common obesity risk factors besides overeating include:

2.4.1-Genetics:

There are some genetic disorders, such as Prader-Willi syndrome, which causes a person to gain an extreme amount of weight [8].

2.4.2-Family History:

If your mother, father, siblings, and grandparents are obese, chances are you may face the same fate if prevention measures are not taken in time [8].

2.4.3-Age:

The older you get, the less active you are likely to become. Additionally, the amount of muscle in the body tends to decrease with age, which is a component that helps burn fat. Lower muscle mass also equates to a lower metabolism [8].

2.4.4- Gender:

Since women possess less muscle mass and tend to burn fewer calories than their male counterparts, they become more susceptible to gaining weight and reaching the status of obesity [8].

2.4.5- Calorie Consumption:

There are many different things that influence calorie consumption, which starts with the way individuals makes their food choices and follows eating habits. Grocery stores are filled with a wide-range of edible selections that pose many problems for some when it comes to choosing healthy meal options. Some of the outside influences that affect calorie consumption include portion control, fast food dining, and unhealthy food preparation habits [8].

2.4.6- Environment:

People are known to make decisions based upon their environment, as well as their community. A walk to the store to increase daily exercise might not be possible when the neighborhood lacks sidewalks.

A community that embraces food and excessive eating influences the adults and children in the area to follow suit. An unequal proportion of dining outlets per population also encourages obesity by temptation [8].

2.4.7- Illness:

Some individuals suffer from underlying illnesses that cause changes in the body that promotes weight gain, such as hypothyroidism [8].

2.4.8- Eating Disorders:

Psychological blocks are one of the main contributors to eating disorders that cause people to gain weight, such as suffering from a binge eating disorder[8].

2.4.9- Medications:

Some medications, such as atypical antipsychotics and some fertility medications are responsible for an increase in weight [8].

2.4.10- Lack of Exercise:

Following a sedentary lifestyle only encourages the accumulation of fat, which is a direct result of not "burning off" the excess calories your body does not use on a daily basis [8].

2.4.11 High Glycemic Diet:

An individual that follows a diet that results in high postprandial blood sugar may lead to obesity [8].

2.4.12- Stress:

Individuals with high stress levels tend to gain more weight, which is sometimes furthered by one's habit of overeating during times of tension and great outside pressures [8].

2.4.13-insufficient Sleep:

A lack of sleep may affect metabolism in such a way that the body begins to accumulate fat rather than lose it [8].

2.4.14- Former Smokers:

One of the major withdrawal complaints regarding the act of quitting smoking is the weight gain that seems to follow as a result [8].

2.4.15-Socio- status economic and level of education:

Factors acting early in life, and during puberty, pregnancy and aging. In both genders rapid weight gain during infancy is an important risk factor for later obesity [8].

2.4.16-Psychological factors:

Psychological status can influence eating habits, because most people eat in response to negative emotions. Stress for example, not only increases consumption of food but also shifts consumption toward high caloric foods that are normally avoided [8].

It is thought that the effect of stress on food intake is mediated via increased adrenal glucocorticoid (GC) output. Chronically elevated GC levels can give rise to increased intake of 'comfort foods' which in turn leads to abdominal obesity [8].

2.4.17-Reproductive fitness:

The BMI of parents has been shown to be positively related to increased number of offspring for both mothers and fathers. Therefore, because of the strong genetic component to BMI this will lead to increased transmission of obesogenic gene variants [8].

2.5-Management:

Management of overweight patients focuses primarily on lifestyle changes such as diet, physical activity, sleep and stress reduction.

A combination of physical activity and dietary changes has been found to be most effective for weight loss. If these measures are unsuccessful after 6 months, then medications, surgery, and other referrals may be required.

Small concrete changes that focus on lifestyle change, behavior modification, healthy eating and physical activity are most likely to be successful in the long run. Progress should be measured on lifestyle change as much as weight parameters as it is known that modifying diet and activity [9].

Treatment goals:

The adverse health outcomes associated with obesity depend on several factors including the presence of other risks and comorbid conditions such as cigarette smoking, family history, hypertension, dyslipidemia, diabetes mellitus, etc. Thus, clinicians should determine treatment goals keeping these in mind rather than on the basis of weight alone [9].

General goals of weight management in obese persons are:

• Reduce body weight.

• Sustain weight loss by minimizing risk of weight gain

• Prevent further weight gain [9].

Lifestyle counseling:

Even within a limited time providers can promote a healthy lifestyle and influence patient behavior.

Lifestyle counseling includes self-management education and support, identifying lifestyle changes, and collaborative goal setting between the provider and patient. The provider works with the patient to identify the patient's biggest concern regarding change. Examples of modifiable behaviors to target include physical activity and television viewing. The patient actually drives the encounter. Using open ended questions and listening skills, the provider helps the patient explore any issues and works collaboratively with the patient to establish a self-management goal [(9)].

Lifestyle counseling means to help patients make informed decisions, identify and overcome barriers, provide health education and appropriate care recommendations, and self-management support. Important steps include:

• Initiating a discussion about nutrition and physical activity [(9)].

• Helping the patient set realistic goals.

• Encouraging open communication between the patient and health care provider.

• Following up on the patient's progress.

The healthcare team can be utilized to provide extended support.

Dietary intervention.

General dietary recommendations to promote weight loss.

Decrease total calories by 500 to 1,000 per day to achieve a weight loss of 1 to 2 pounds per week [(9)].

Sleep:

Short sleep duration is associated with risk for excessive weight gain and obesity.

Clinicians should counsel patients and families on appropriate sleep requirements. Recommendations for age-appropriate sleep durations and strategies for good sleep [(9)].

2.6-Medications

Adult patients medications typically result in little weight loss, but may help prevent further weight gain. Medication may be considered for adults with BMI > 30 kg/m2 or with BMI > 27 kg/m2 and significant medical complications, if diet and activity modifications do not result in weight loss of 5% at 3 months and 10% after 6 months [(9)].

2.6.1-Phentermine:

(short term only) and orlistat are FDA approved for weight loss in conjunction with lifestyle intervention when lifestyle intervention alone is unsuccessful.. Two additional weight loss medications have recently received FDA approval: a combination of phentermine and topiramate (available as Qsymia) and lorcaserin (to be marketed as Belviq), the latter of which is not yet available. All four drugs are contraindicated in pregnancy – use all with caution in women of childbearing age [(9)].

2.6.2-Metformin:

Led to a 1.5-cm greater decrease in waist circumference; however, its use for obesity is not approved by the FDA and is thus considered an off-label use.
Medications that have been approved for other indications that are employed in off label use for obesity and can promote short term modest weight loss include: buproprion, zonisamide and topiramate. However, the USPSTF found no evidence on the maintenance of improvement after discontinuation of medications In general, over –the -counter (OTC) medications are not recommended for weight loss [(9)].

2.6.3-Physical activity. gradual increase in physical activity toward a goal of 60 to 90 minutes of daily moderate -intensity physical activity to sustain weight loss. To then help maintain weight and prevent weight gain, adults should engage in approximately 60 minutes of moderat- to vigorous -intensity activity on most days of the week.

Older adults and those with chronic medical conditions limiting physical activity should be as physically active as their abilities allow. Those at risk of falling should also do exercises to improve balance [9].

Multidisciplinary weight loss clinics.

The most effective strategies for weight management employ a multidisciplinary team working in concert to achieve individualized weight loss goals. Multidisciplinary teams typically include

2.6.4-Physician: evaluates, assesses risk and counsels the patient, coordinates care of the team and who can refer to specialists as needed [9].

2.6.5-Dietitian:

Delivers tailored nutritional information appropriate to the patient's preferences and lifestyle [9].

2.6.6-Exercise physiologist:

Assesses a patient's capacity for exercise and prescribes a regimen that can be done at home, at a gym or in one -on- one session.

Behavioral therapist: offers standard behavioral or cognitive behavioral therapy [9].

2.6.8-Endocrinologist: evaluates for secondary causes of obesity, evaluate and treat complications of obesity such as diabetes and prescribe pharmacotherapy when lifestyle intervention alone results in little success. Bariatric surgery. When other approaches have not resulted in adequate weight control, bariatric surgery may be considered. While bariatric surgery results in significantly greater weight loss than conventional treatment for obese adults, surgery is associated with a greater risk of complications. Bariatric surgery has been found to reduce or resolve obesity-related medical co morbidities including diabetes and hypertension [9].

2.6.9-Bariatric: surgery may be considered for patients with a BMI > 40, or > 35 with weight -related health complications (e.g., hypertension, heart disease, diabetes, polyarthritis, pulmonary hypertension, sleep apnea, or hyperlipidemia).

Before bariatric surgery will be performed, most surgeons and insurers require documented compliance with a medically supervised weight loss program for a minimum of six months (including monthly documentation of weight, dietary, exercise and lifestyle modifications at each visit) without achieving significant weight loss. The supervised weight loss program usually should have occurred within the past 2 years, although some insurance companies will include the past 4 years [9].

Absolute contraindications to bariatric surgery include pregnancy, lactation, active substance abuse, end-stage cardiovascular disease, severe or uncontrolled psychiatric disorders, and anorexia nervosa.

Relative contraindications include unstable medical condition, end-stage renal disease, active binge eating disorder, or bulimia nervosa.

Follow-up and Monitoring The weight and BMI of all patients should routinely monitored at each visit, or at a minimum, annually.

Factors associated with overweight and obesity that should be monitored [9].

2.7.Complications of obesity:

Morbidities related to obesity

2.7.1-Impaired glucose tolerance and Diabetes mellitus:

There is currently no controversy that obesity is associated with impaired glucose tolerance or type 2 diabetes mellitus.

The underlying mechanism is thought to be due to insulin resistance. However, there is currently limited data accurately quantifying insulin resistance using the standard hyperinsulinemic. euglycemic clamp

Hypertension strong association between obesity and hypertension [10].

2.7.2-heart Disease:

There is unequivocal evidence that there is an increased risk of coronary artery disease (CAD) in obesity [10].

2.7.3-metabolic syndrome:

Central obesity and insulin resistance, which leads to altered lipid and glucose metabolism, appear to be the basis for the features seen in metabolic syndrome.

The syndrome was originally intended for prediction of the risk of cardiovascular disease [10].

2.7.4-Dyslipidaemia:

Dyslipidaemia, manifested by reduced high density lipoprotein (HDL) and increased triglycerides, is associated with obesity.

The underlying mechanism is largely due to insulin resistance. Very low density lipoprotein (VLDL) clearance in plasma is dependent on the rate of hepatic synthesis and catabolism by lipoprotein lipase, an enzyme which is also involved in formation of HDL.

In obesity, insulin resistance is associated with increased hepatic synthesis of VLDL and impaired lipoprotein lipase.

There is evidence that dyslipidaemia can still occur in the absence of insulin resistance in obesity. Pulmonary abnormalities obstructive sleep apnea asthma. Osteoarthritis [10].

2.4.8-Osteoarthritis:

Osteoarthritis (OA) appears to follow obesity.

Gastrointestinal abnormalities association between obesity and increased risk of Gastro esophageal reflux disease (GORD Cancer) [10].

2.4.9-Some cancer:

There is considerable evidence of an association between obesity and some cancers.

These include cancer of gallbladder, esophagus (adenocarcinoma), thyroid, kidney, uterus, colon and breast.

However the underlying mechanism linking these cancers to obesity is not clear. For uterus and breast cancers, it is thought to be due to higher oestrogen levels synthesized from fat tissue in obese women [10].

2.4.10-Reproductive disease:

Polycystic ovary syndrome (PCOS), characterized by an ovulation, hyperandrogenism and a polycystic ovary, is associated with obesity as well as insulin resistance [10].

2.4.11-Psychosocial problems:

Obesity in the affluent society has been associated with several untoward outcomes in terms of psychosocial or socioeconomic wellbeing. Obese females for example were found to be less likely to complete school.

Since obesity is such a growing problem in the United States, more and more people are interested in the prevention tips that will help them maintain and control their weight. Below you will find a wide-range of preventive measures that go beyond healthy eating habits and participating in regular exercise [10].

2.5-Prevention of obesity:

2.5.1- Routine Exercise:

One of the most effective things to prevent weight gain is to partake in regular exercise. Usually, 30 to 60 minutes of moderate physical activity is recommended to prevent obesity, which may include biking, running, jogging, swimming, fast walking, and engaging in sports [10].

2.5.2- Select Healthy Meals and Snacks:

When choosing meals and snacks, it is suggested to select foods that are low in fat, low-calorie, and filled with vitamins and nutrients. Some of the best options include fresh fruits and vegetables, lean protein, and whole grains. Keeping the saturated fat content low and limiting the intake of sweets and alcohol are great ways to prevent obesity [10].

It is also important to choose a variety of foods throughout the day in order to gain the best range of nutrients that promote a healthy body and increased rate of metabolism. Snacking is one of the most damaging downfalls that an individual may face when trying to prevent weight gain. Instead of grabbing a cookie, candy bar, or other fat-rich snack, it is important to locate healthier alternatives that will lessen the chances of becoming obese [10].

2.5.3- Recognize Food Traps:

There are certain triggers or circumstances that cause people to overeat. It could be a particular time of the day when hunger seems to strike or the tendency to eat ice cream when feeling stressed. When you are able to recognize the triggers and behavioral patterns associated with obesity, one is able to get more out of their prevention methods [10].

2.5.4- Monitor Your Weight:

Some people are fearful of weighing themselves on a scale, but careful monitoring of weight can serve as encouragement for when a decrease in pounds is seen or help dieters gauge their progress when weight loss is lacking. It may also serve as an alert to help individuals pinpoint the kinds of activities and habits that either encourages weight gain or loss. People should weigh themselves at least once a week, which helps to successfully prevent weight gain. [10].

2.5.5- Consistency:

To prevent obesity, , it is important to stick with a healthy weigh [10].

3-Methodology

3.1.Study design:

This was descriptive cross sectional study done Elmak Nimer university hospital in the period from August-November 2016 to assess incidence of obesity health care indicator among a patients in intensive care unit.

3.2.Study area:

The research is done in Sudan in Shendi town, it is a town in the river Nile state, which is located 172km north of the capital Khartoum. The town is considered a center of Galleen tripe as well other tripes like Shugia, Hassanua, the majority of population profession is farming.

Shendi has three big hospital, the teaching hospital, the military hospital and Elmak Nimer university hospital. All these hospitals have different department which prepare good health services for Shendi area.

3.3. Setting.

Elmak Nimer university hospital established 2002 and consists of medical, surgical and obstetrical department, ENT, renal, ophthalmic dental and pediatric. Unit and private section

There are also major and minor theater emergency room and CCU, ICU and dialysis room .there is also blood bank, laboratory and pharmacy the hospital have more than 200 beds.

3.4. Study population:

It Include all the patient in intensive care unit in Elmak Nimer University hospital during the period of study

3.4.1.Exclusion criteria:

- Critical ill patients
- Comatose patients

3.5. Sampling and sample size:

3.5.1. Sample method: convince sampling technique was used.

3.5.2.Sample size: (35) patients were participated in this study.

3.6.Data collection tools:

Standard interview closed ended questionnaire was developed by the researcher composed of (14) questions. Question from (1–8) about personal data, questions (9) about optimally done, question (10) about classification of obesity. Question (11) about physical activity and exercise, question (12) about causes of obesity, question (13) about predisposing factor of obesity question (14) about complication of obesity.

Body mass index

(BMI): egual weight in kilogram divided be suqure of the height in meter

Material:

Subject's weight was recorded in kilograms - using calibrated floor scales. The measurements were taken with their shoes off. Participant's height was measured standing. BMI equal weight in kilograms divided by the square of the height in meters (kg/m2).

Data collection techniques:

Data was collected during one week during the two shifts, after explanation the purpose of the study, patient was interviewed firstly, then patient weight and height was taken.

Data analysis techniques:

The study was analyzed manually by simple statistical technique and presented in tables and figure.

Ethical considerations:

Permission was been taken from original director of the hospital and from the head nurse of the unit and the purpose of study was explained to each respondent and permission of patients taken verbally.

4. Results

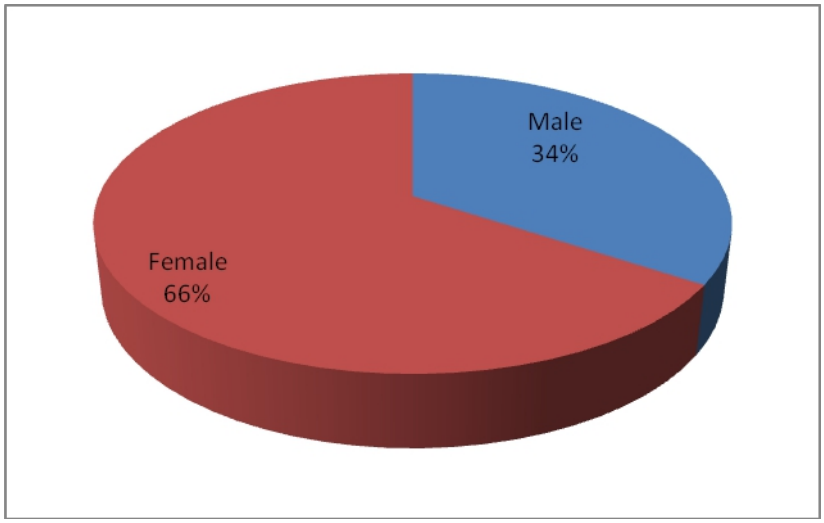

Figure (1) a gender of study group

The result showed that 66% of female and 34% of male.

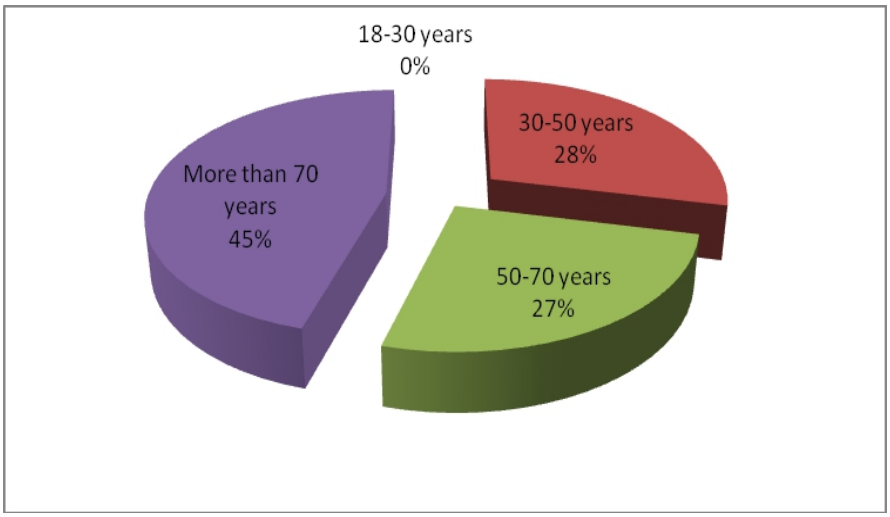

Figure (2): age of study group:

The result explain that 45% of study group more than 70 years ,28% of study group had (30-50)years and 27% of study group had(50-70) years.

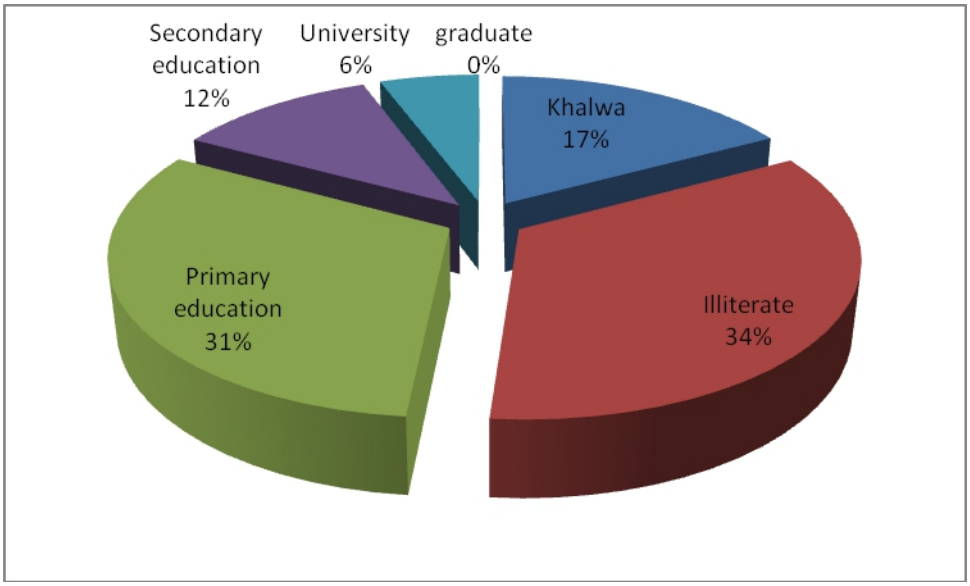

Figure (3): a level of education: of study group:

The result determine that 34% of study group had illiterate ,31% of study group had primary education ,17% of study group had khalwa ,11% of study group had secondary education ,7% of study group had university.

Table (4): Marital Status of study group:

Marital status	Frequency	Percent
Single	6	17%
Married	27	77%
Divorced	2	6%
Total	35	100%

The result showed 77% of study group had married, 17% of study group had single and 6% of study group had divorced.

Table (5):a Tripe of study group:

Tripe	Frequency	Percent
Gali	26	74%
Shauqe	4	11%
nobaa	2	6%
magarbaa	1	3%
rashudaa	1	3%
husanuaa	1	3%
Total	35	100%

The result reveal 74% of study group had Gali ,11% of study group had shauge, 6% of study group had nobaa, and 3% of study group had magarbaa – husanuaa –rashudaa.

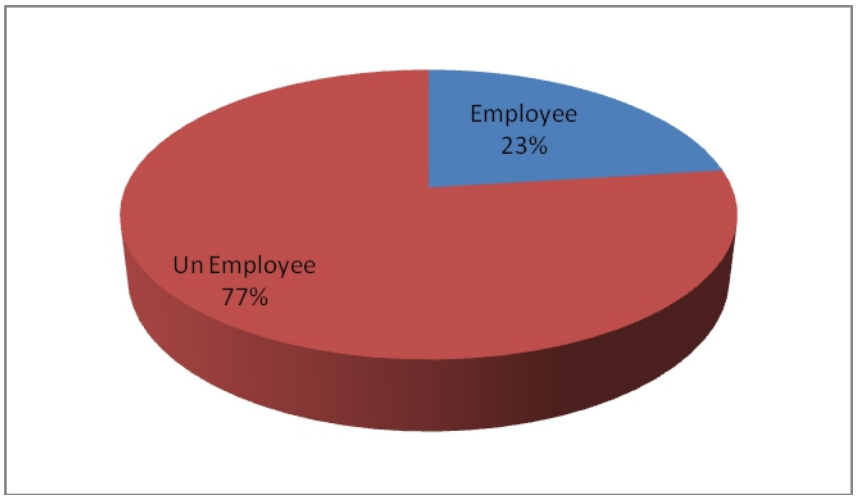

Figure (6): Occupation distribution of study group:

The result explain 77% of study group had unemployed and 23% of study group had employee.

Table (7): Residence of study group:

Residence	Frequency	Percent
Town	12	34%
Village	16	46%
rural	7	20%
Total	35	100%

The result showed 46% of study group had leave in village, 34% of study group had leave in town and 20% of study group had leave in rural.

Table (8): Distribution of study group according to their Socioeconomic:

	Frequency	Percent
Low	6	17%
Medium	13	37%
High	16	46%
Total	35	100%

The result determined 46% of study group had high socioeconomic status, 37% of study group had medium,17% of study group had low.

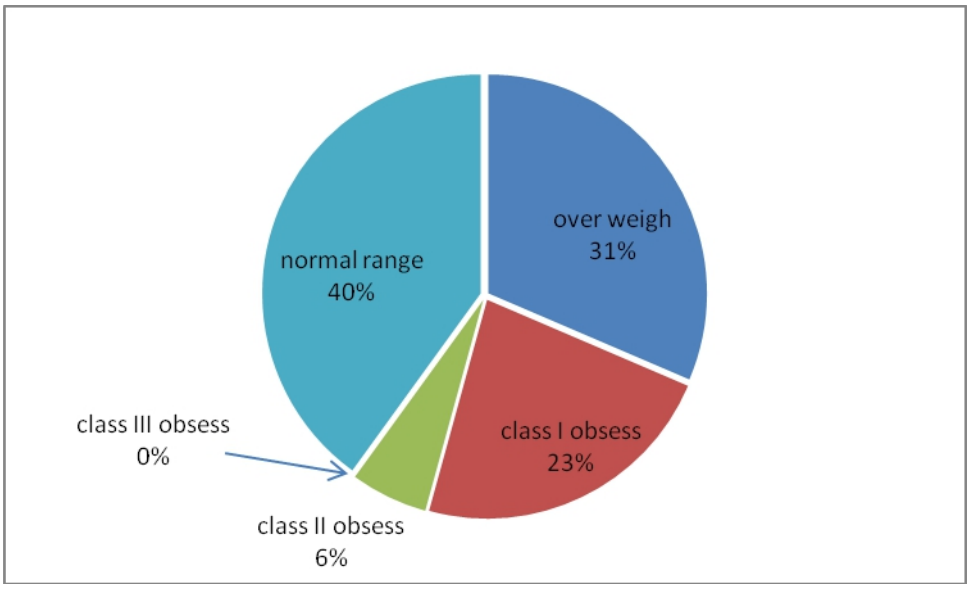

Figure (9): Classification of obesity of study group according to (BMI):

The result reveal 40% of study group had normal weight, 31% of study group had over weight, 23% of study group had class I obsess and 6% of group study had class II obsess.

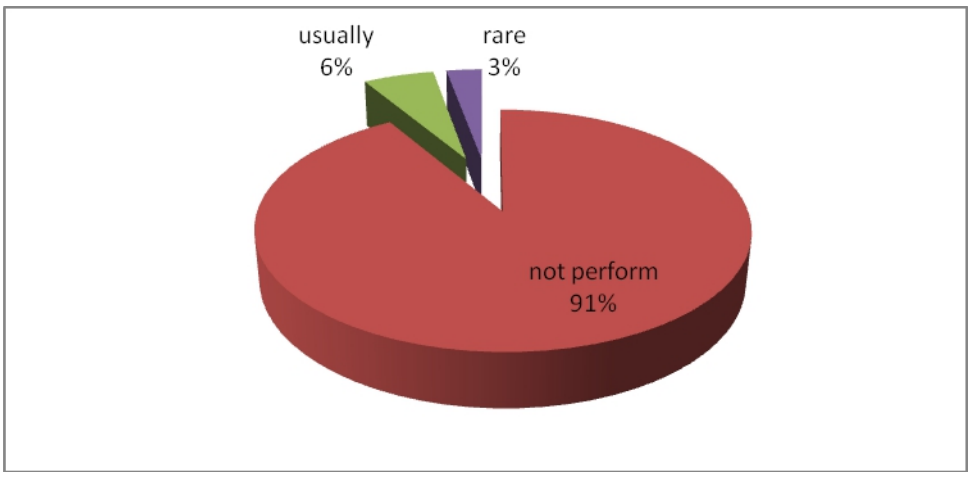

Figure (10): Physical activities & exercise of study group:

The result showed 91% of study group had not performed physical activity & exercise, 6% of study group had usually performed and 3% of study group had rare performed.

Table (11): Causes of obesity of study group:

causes	Frequency	Percent
Age	10	48%
Family history	7	33%
Medication	3	14%
Smoking	1	5%
Total	21	100%

The result reveal 48% of study group had age, 33% of study group had family history,14% of study group had medication and 5% of study group had smoking.

Table (12): Determine the distribution of study group according to their predisposing factor of study group:

Predisposing factor	Frequency	Percent
Family history	9	42%
Age	7	33%
Illness	1	5%
Eating disorder	1	5%
Lack of exercise	2	10%
Smoker	1	5%
Total	21	100%

The result determined 42% of study group had family history, 33% of study group had a age, 5% of study group had illness, 10% of study group had lack of exercise and 5% of study group had smoker.

Table (13): Explain the distribution of study group according to Complication occurred due to obesity:

Complication	Frequency	Percent
Heart diseases	11	52%
Osteoarthritis	4	19%
DM type II	5	24%
cancer	1	5%
Total	21	100%

The result explained 52% of study group had heart disease, 24% of study group had DM type II, 19% of study group had osteoarthritis and 5% of study group had some cancer.

5.1 Discussion

Obesity is an endemic health problem in most developed countries regally serious public health attention. Obesity has become a burden on the health care cost, reducing quality of life with increased the incidence of cardio vascular diseases (CVD) and type 2 diabetes, and some type of cancers .Prevalence of obesity is higher in developing countries, with CVD as the leading cause of death.

This study done to assessment incidence of obesity in intensive care unit in Elemak Nimer hospital more than half (60%) of patient had obesity.

The result showed more than half (66%) of study group had female and more than one third (34%) of study group had male (this agreement of study on Malaysia in 2011) Males had 16% and 48% less chance of being associated with overweight and obesity compared to females.

The present study reflect that more than one third(34%) of study group had illiterate , (31%) of study group had primary education, (17%)of study group had khalwa, while (11%) of study group had secondary education and (7%) of study group had university.

Regarding age less than half (45%) of study group more than 70 years, while(28%)of study group their (30-50)years & and (28%) of study group their 50-70)years.

The result explained majority (77%) of study group had un employee and (23%) of study group had employee.

According to socioeconomic of study group determined (46%) had good, while (37%) of study group had moderate and (17%) of study group had poor.

In addition result revealed less than half (40%) of study group had normal weight, more than one third (31%) of study group had over weight ,less than quadrant (23%) of study group had class I obsess ,while (6%) of study group had class II obsess, this study was in agreement with the study.

Over two thirds (68%) of adult Americans are either overweight or obese article In British journal of community nursing March 2011.

Regarding The physical activity &exercise is essential result showed most (91%) of study group had not performed, (6%) of study group had usually not perform and(3%) of study group had rare performed.

According to causes of obesity the result revealed more than one third (34%) of study group had age, less than quadrant (24%) of study group had family history, (14%) of study group had health condition, while (11%) of study group had lack of energy balance &medication and (3%) of study group had smoking & environment. That agree with Continuing Education in Anesthesia, Critical Care & Pain Advance Access published September 26, 2013.

Related to predisposing factor the result reflect more than quadrant (26%) of study group had family history, (23%) of study group had age, and (20%) of study group had illness, (10%) of study group had socioeconomic status,(6%) of study group had lack of exercise and (3%) of study group had psychological, calorie consumption, eating disorder, stress, smoker .also agree with literature review. Adultpatientsage65years and older tend to have an increase in body fat and decrease in lean muscle mass. Depending on individual patient factors.

In addition to that, complication result explained (71%) of study group had heart disease,(14%) of study group had osteoarthritis, (4%) of study group had DM type II, while (3%) of study group had due to cancer .this agree with literature review. In this review, data from different studies on complications of obesity are summarized and controversies discussed. Areas of current and future research in obesity and its complications have also been highlighted.

5.2 Conclusion

Based on the finding of present study, it was concluded that:

More than half of study population had obesity (60%), regard incidence of obesity continues to increase this need more attention and more than quarter (26%) predisposing factor had family history.

Tow third(66%) of study group had female.

5.3 Recommendations

Based on the study finding and conclusion, come the following recommendation:

1-Educate the people about physical activity &exercise how to perform according to condition (30-60 minute moderate activity per day).

2-counseling to decrease carbohydrate and fat and low Calorie in diet filled with vitamin ,fruit, vegetable.

Life style counseling include, self management education and support, identifying life style change ,measuring weight regularly.

Counseling by used mass media, radio, television because more people had illiterate and to educate target group of community, Provided healthy lifestyle promotion messages to all patients.

3-Education about risk factor and how prevent it ,the family or parent advise the children to eat snake meal filled with vitamin &mineral, avoid high calorie, and participated him in swimming, running and engaging in sport program to avoid weight gain .

4-The government and organization establish health education regularly used radio, television, poster book, lectures about dangers of obesity.

References

1. chap3<spom<www.maso.org.ny -define obesity access 5/10 at 6:30pm.
2. www who-int>media centre>fact sheet—incidence obesity access 5/10at 11:00pm.
3. role…<resource<msm<online.ben.edu-role of nurses-access 7/10 at7:00pm.
4. www.mclvegan way.uk>publications-who obesity and over weight-access22/10 at8:17pm.
5. miscellaneous<https:\\calariebee.com-eipdomlogy of obesity-access 2\11 at9:oopm.
6. docs<coulent<international.aaup.org-nurse practitioners -access2/11 at11:5am.
7. www.edicienet.com>main>mobleart-what causes of obesity and over weight-access 7/11 at9:5am.
8. www.nhlbi.nih.gov>health>topics>obs-causes of obesity –access8/11 at8:00am.
9. https//wwwnhlbi.nih.gov>topics>obe-what are the health risk of overweight -access10/11 at8:55am.
10. www.med.umich.edu>practice guides-treatment and prevent of overweight and obesity access11/11 at9:34pm [pub med].
11. Dsegula, complication of obesity in adult. Malawi medical journal. 26 (1) page (20-24).march 2014-access11/11 at12:00mn

Shendi university

Faculty of post graduate studies and scientific research

Questionnaire about obesity health care indicator among intensive care unit patients in Elmak Nimer Hospital

No ( )

Part one: Demographic chore eristic:

1. **Gender:**

a. male { } b. female { }

2. **Age:**

a. 18-30 years { } b. 30 – 50 years { } c. 50 – 70 years { }

d. more than 70 years { }

3. **Level of education:**

a. khalwa { } b. illiterate { } c. primary education { }

d. secondary education { } e. university education { } f. graduate { }

4. **Marital status:**

a. single { } b. married { } c. divorced { }

5. **Tribe**…….

6. **Occupation:**

a. employee { } b. un employee { }

7. **Residence:**

a. Town { } b. village { } c. rural { }

8. **Socioeconomic status:**

a. mild { } b. moderate { } c. poor { } d. good { }

Part two:

9. **Optimally:**

a. WT { } b. HT { } c. BMI { }

10. **Classification of obesity:**

a. over weight { } b. class I obsess { } c. class II obese { }

d. normal weight { } e. class III obese { }

11. Physical activities & exercise:

a. regular { } b. not perform { } c. usually { } d. rare { }

12. Causes of obesity:

a. lack of energy { } b. health condition { } c. family history { }

d. medication { } e. age { } f. pregnancy { }

h. in active life style { } i. environment { } j. emotional factor { }

k. lack of sleep { } m. smoking { }

13. Predisposing factor:

a. genetic factor { } b. socioeconomic status { } c. level of education { }

d. sleep duration { } e. pharmaceuticals { }f. environmental temperature { }

h. psychological factor { } i. reproductive fitness { } j. family history { }

k. age { } m. gender { } n. calorie consumption { } o. illness { }

p. eating disorder { } q. High glycemic { } u. lack of exercise { }

r. stress { } s. smoker { }

14. Complication:

a. heart diseases { } b. dyslipidaemia { } c. osteoarthritis { }

d. DM type II { } e. cancer { } f. reproductive disease { }

g. psychosocial problem { } h. Metabolic syndrome { }