

# Nutrition Education for Hospitalized Individuals with Diabetes in Omdurman Hospital Medicine Section

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**Abstract:** This study was conducted in Omdurman hospital medicine section. It is aimed to evaluate the nutrition educational program of diabetic patients and the diet ion follow up and the impact for diabetic patients available in the section during this study. 60diabetic patients were randomly selected to take part in the study. The data were collected through the questionnaire designed, for diabetic patients who briefed about the purpose of this study. The questionnaire addressed to diabetic patients, which included demographics information, such as gender, age, education level, occupation and income level as well as medical information such as history of the diabetes and types of treatment and include types and methods of nutrition education and assessment for diabetic patients, and also the evaluation of food services received during data collection period. The second type were collected due to the observation during patient interviewed for questionnaire. The Results obtained, the most of patients were men and their age ranged over 60 to 40 years(50%) ,and75.8%of them were married . most of patients addressed (87.5%) were educated in various education levels (khalwa, primary, intermediate and university) while 12.3 were illiterate. more than tow third of patients (83.15) were came from Khartoum state area and the others came from village round Omdurman and another state above half (62.0%) of interviewed patients were not joined with jobs (unemployed). (56%) %of patients had diabetes more than 10 years and (21%) had diabetes from 10 to 6 years but others with diabetes in less than 5 years. Also the study demonstrated that the frequency of patients admit ion to the hospital which about (28%) of the respondents were admitted to hospital at the first time and (30.0%) were admitted at the second time and (41.7) admitted to the hospital more than two times.

The types of regimen followed by the patients who interviewed in this study were about ( 8.3%) concentrated only in diet control using as treatment and 25% used medical treatment only while most of them (66.7) were used diet control and medical treatment. 91.7 OF interviewed patients received nutrition education in the hospital section, and 75% of them received it from nutritionist while 11.7 % received the nutrition education from doctors and the others5%received it from other health workers in the section, also75% took information about nutrition education directly by education as a group's 66.7% of patients said that they had received enough information and 25% of them responds with received no enough and not satisfied for them, Also there were different resources used by patients out side the hospital and about 31.7% received education from TV while 28.3% received it from radio and the others were used an others resources, also about 75% of patients said that they received printed material prepared by the nutritionist , and 80% of patients who received printed material said that it contains only dietary information, and 10% said its include only medical information but 2.75 said its include medical and dietary control and physical exercises. Also about (75%)of patients received nutrition education directly from nutritionist while some of them (16.7%) received it from doctors and other health workers in medicine section and this information received to patients or co patients individually and not in the group discussion . The study show that 66.7% of patients said that they received enough information but 25% of them said it is not enough nutrition information for blood glucose control. More than tow third of patients (83.3%) said the dietitian visits them daily to the section and some of them 5% said the diet ion visits is weakly and 3.3% responds that is tow time /wreaks. In the evaluation of the food and food services the study show that most of patients disagree with the quantity and quality and food handling, Due to the observation during interviewing diabetic patients, all of the food handlers had not in suitable wearing during food distribution to the patients and some of patients refuse to take the meal had distributed by hospital food handlers.

**Keywords:** Omdurman hospital medicine section, diabetic patients, dietitian visits.

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## 1. INTRODUCTION

**Medicine nutrition therapy:**(MNT), is defined as a process of a nutritional assessment and individualized meal planning in consultation with a nutrition professional and is an integral component in maintaining glycemic control for hospitalized patients with diabetes. The goals of inpatient MNT are to optimize glycemic control, to provide adequate calories to meet metabolic demands, and to create a discharge plan for follow-up care for All patients , A team approach is required to ensure that patients' nutrition care plans work with their medical plan, not against it.

**(American Diabetes Association 2014) .**

Nutrition education should be focuses on seven self-care behaviors that are important to be healthy and fully enjoy life, healthy eating, being active, monitoring, taking medication, problem solving, healthy coping and reducing risks. Diabetes education is usually prescribed by a primary care doctor who writes a referral for diabetes education (sometimes called diabetes self-management training).

Diabetes education programs are found in a variety of places – hospital outpatient facilities, clinics, doctor’s offices, and staffed by diabetes educators. Specialists are healthcare professionals, often nurses, nutritionists and pharmacists. Who focus on all aspects of diabetes care, and are also skilled in counseling, education and communication (IDF, 2006).

Diet is a key in helping to manage type 2 diabetes. The weight and blood sugar should be close to normal ranges. This will help prevent the long term problems that can come from diabetes. If patients are overweight and have diabetes, they should try to lose weight. This is the first step to controlling diabetes because it helps body to be in using insulin better. Patient should know the important of exercise. It helps to control diabetes. and helps to control blood glucose levels. In addition to lose weight and stay healthy. Nutrition- counselor is in the area of education, specifically nutrition education. An important part of the process of translating sciences of nutrition into the skill of furnishing optimal nourishment for people involves teaching. People who take oral diabetes medications usually do not need to adjust the dose of these medications for exercise. If the patients take insulin, it may be possible to reduce insulin dose before exercising to avoid developing low blood glucose. A physician, diabetes educator, dietitian or exercise physiologist can help to determine the best way to adjust the insulin dose before, during, and after exercising. A position paper of the A.D.A on Nutrition Education for the public in 1973 defined nutrition education as the “process by which beliefs, attitudes, environmental influences, and understanding about food lead to practices that are scientifically sound, practical, and consist with individual needs and available food resources” (Stevens, 1979) .

Diabetes mellitus – usually known as diabetes – is an incurable and progressive condition. It is caused by a failure of the pancreas to produce insulin (type 1) or to produce enough adequately functioning insulin (type 2) to enable the glucose from food to enter the body cells and be used as a source of energy. As a result, in both types the glucose level in the blood remains too high. Blood glucose (BG) is commonly determined as HbA1c, which is the hemoglobin bound by glucose, (IDF, 2006).

The prevalence of DM in Sudan reached 3.4% among those more than 25 years of age. The prevalence was particularly high (10.8%) in a certain community in the northern state (Elbagir, 1998).

Diabetes mellitus (DM type 2) in Sudan has prevalence rate of (3.4%) among people of 25 years old. People with (type 2) constitute 6% of the population of Khartoum, 1% of kordofan state population and it is minimal in the rest of the state (federal ministry of the health, 2006). Diabetes is a growing health problem in Sudan. The International Diabetes Federation estimates that the diabetes prevalence in Sudan is 8.7%, (IDF, 2011).

## 2. JUSTIFICATION

Diabetes has become one of a major health problem in Sudan, acquired or inherited. Some people are diagnosed, others not diagnosed, and who probably suspected to have it soon. For this reason nutrition education is important for all people to receive advises for protection, and control , diabetes care in Sudan include the lack of efficient diabetes care in hospital, lack of specially trained personnel, the high cost of anti-diabetic treatments, poor compliance with therapy or diet, ignorance and wrong beliefs, Many factors affect how well diabetes is controlled. Many of these factors are controlled by the person with diabetes, including how much and what is eaten, how frequently the blood sugar is monitored, physical activity levels, and accuracy and consistency of medication dosing. Even small changes can affect blood sugar control. Hospitalized Diabetic patients receive no perfect special care level and nutrition Education, and public awareness are almost diminished. However, the overall health care provided to diabetic patients and to communities is far from optimum need as reported by the operational researches. There are few local Non-Governmental

Organizations (NGOs) which help low income poor population. These need to be strengthening (Federal Ministry of the Health, 2006).

All diabetic patients require a careful balance between nutrient intake, energy expenditure, dose and timing of treatment. Both types (1) & (2) will have so many complications if any of the above is not fully practiced. Additionally personal care of how to deal with minor or major complications need qualified trained staff fully available to give timely advice.

**General objective:**

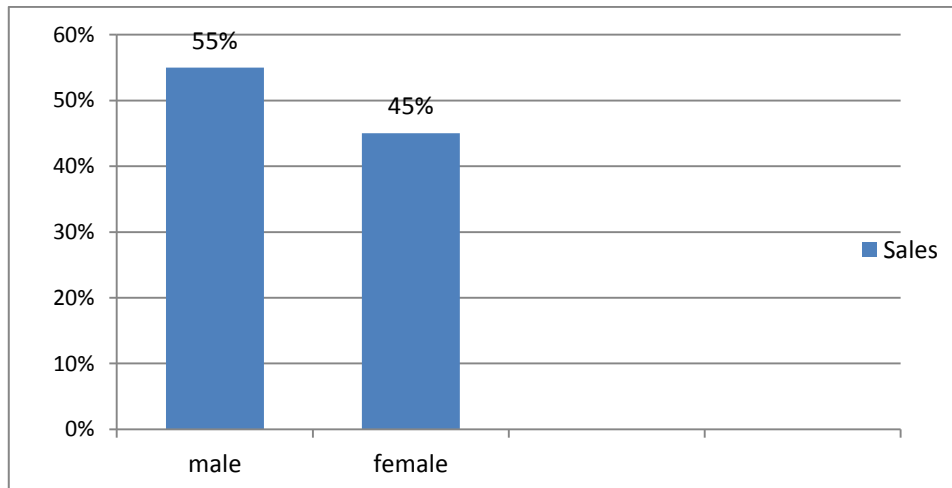
To assess nutrition education program for hospitalized diabetic patients in medicine section in Omdurman hospital

**Specific objectives:**

- 1- To evaluate different nutrition education methods used by dietitians for admitted diabetic patients
- 2- To evaluate the impacts of the nutrition education for the diabetic patients.

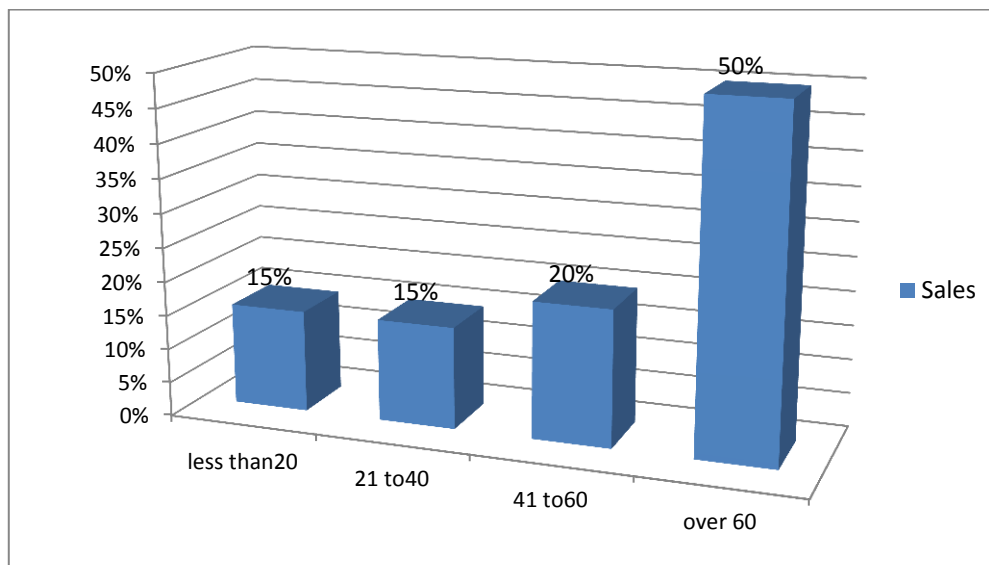
**3. THE RESULTS**

**Figure (1) gender**



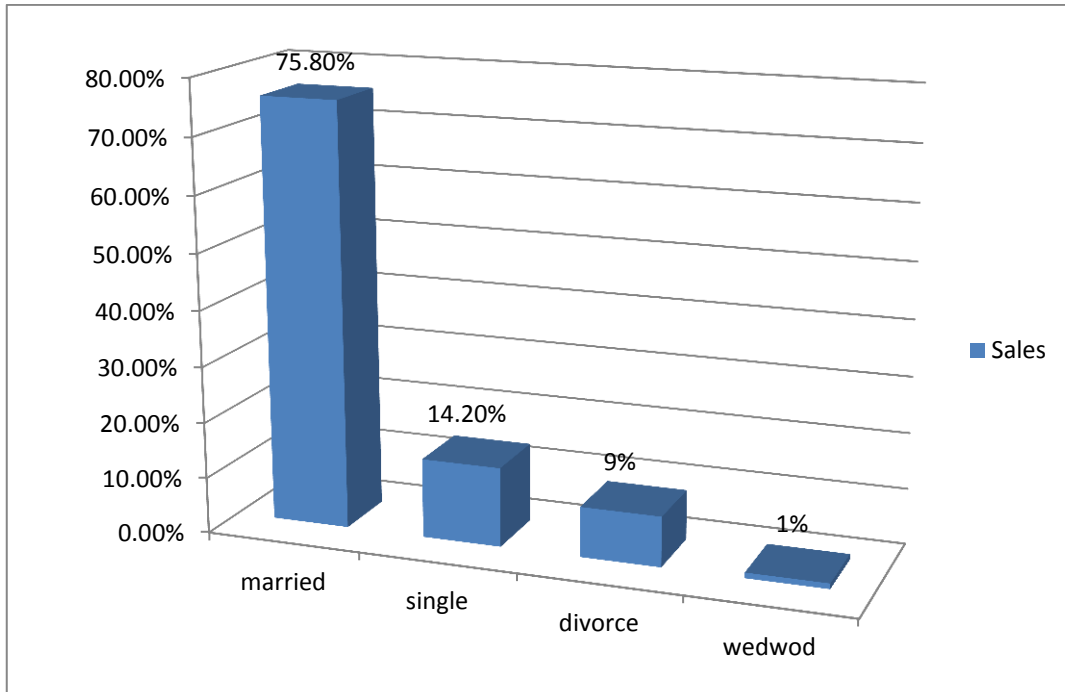
As the above figure (1) the respondents who interviewed in this study were 55% of them were male while 45% were female.

**Figure (2) age groups**



The above shape Shaw the different ages of diabetic patients. Which represent that about 15.0% were at (less than 20 years) of the age group and the same percentage 15 % in the age group (21 – 40 years), and 20%% were at the age group (41-- 60 years), but the high percentage 50% is in the age group above 60 years old.

Figure (3): Social Status:



the above figure(3) represents the social status of the diabetic patients that about 75.8% were married and 14.2% were single while 9% divorce whereas only 1% were widowed .

Figure (4) education level

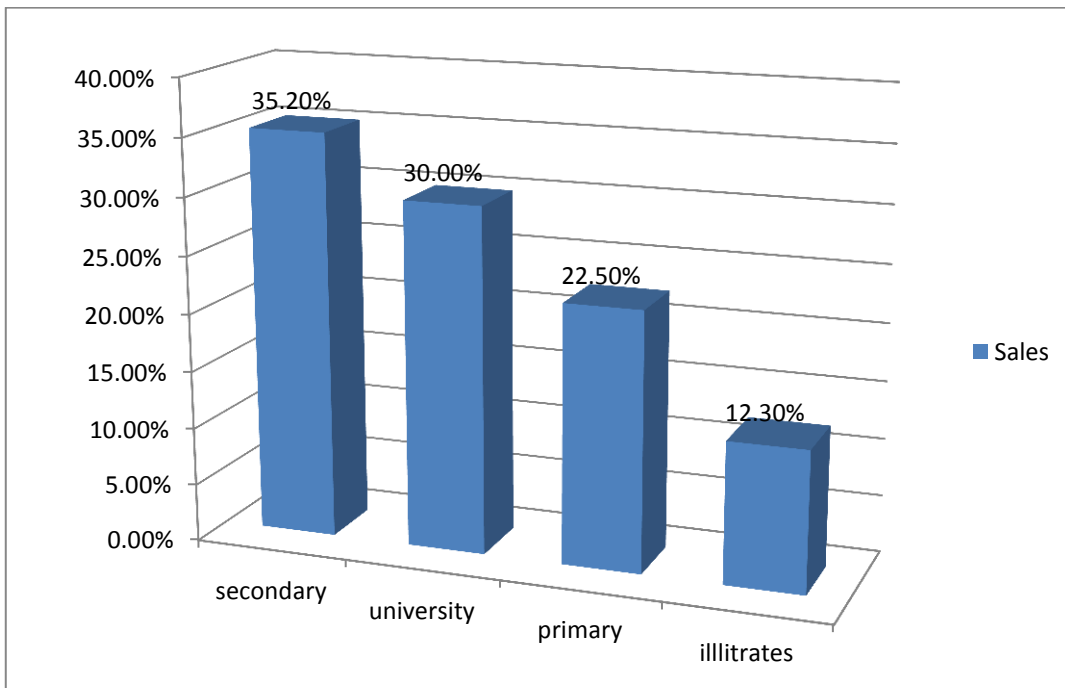
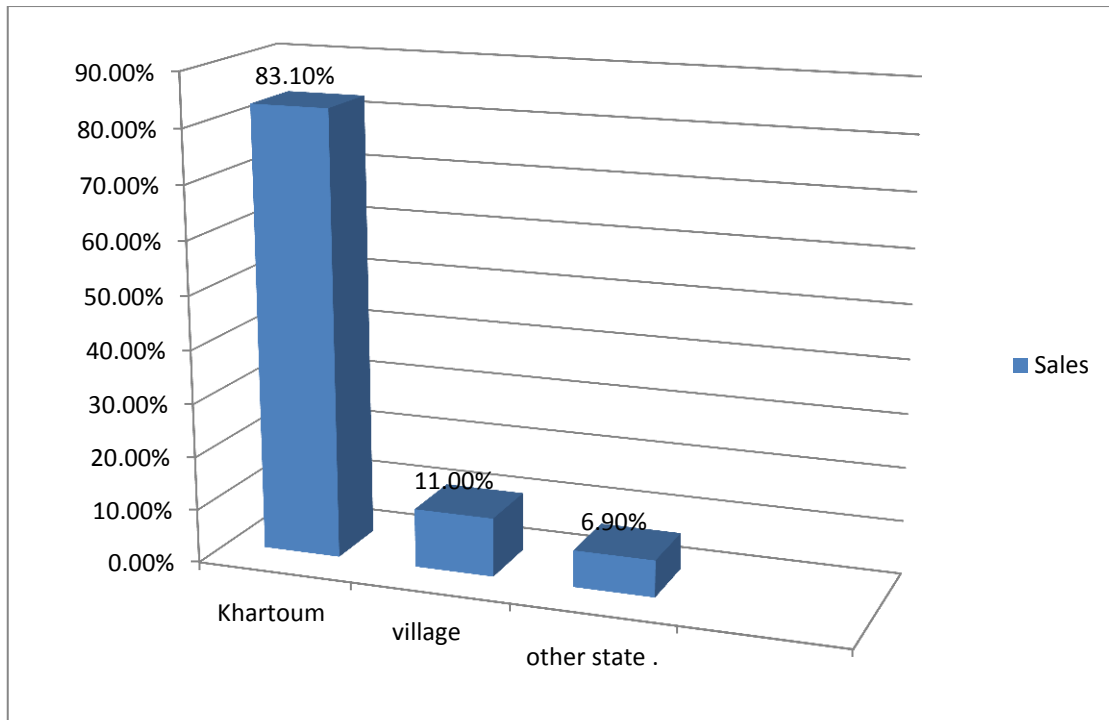


Figure (4) above shows that more than one third (35.2%) had secondary education, and (30%) had university education, and (22.5%) had primary education, while (12.3%) were illiterates.

Figure (5): Residence:



the different residence of diabetic patients show in the above figure (5).represent that above three quarters (83.1%) were from Khartoum state , whereas (11.0%) came from village round Khartoum and (6.9%) came from an other state .

Figure (6): the Occupations:

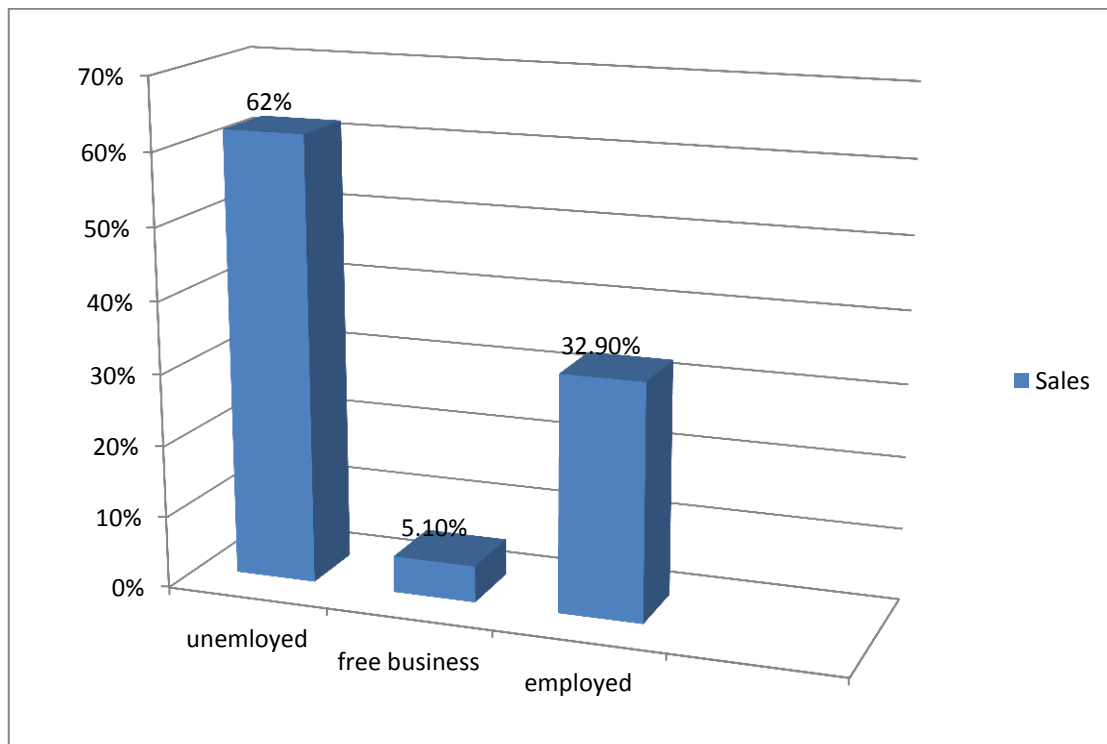
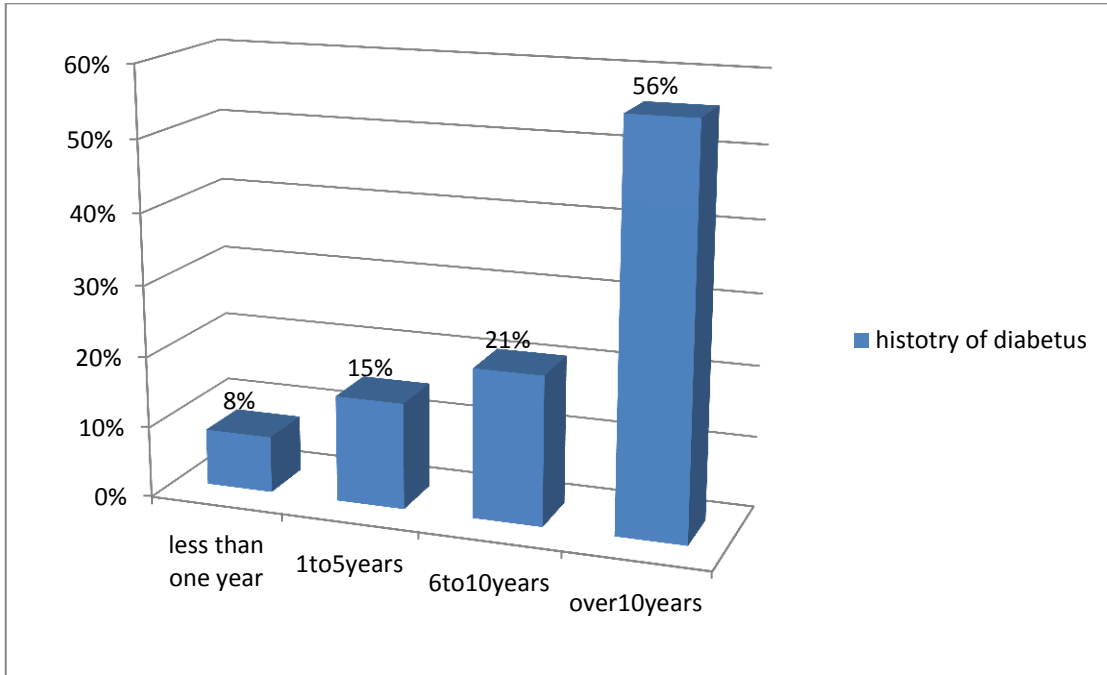


Figure (6) shows occupations of diabetic patients. Which is Above half (62.0%) of the respondents of diabetic patients , were not joined with jobs, and (5.1%) were have free business , while (32.9%) were joined occupations .

**B- Medical background:**

**Figure (7): Diabetes history:**



In the above Figure (8) with regards to history of diabetes, that more than half of diabetic patients (56%) had diabetes for more than 10 years ,and (21%) had diabetes for (6 – 10 years), while (15 %) had history for 1 – 5 years , and only 8% had diabetes disease history for less than one year.

**Figure (8) hospital admissions frequency**

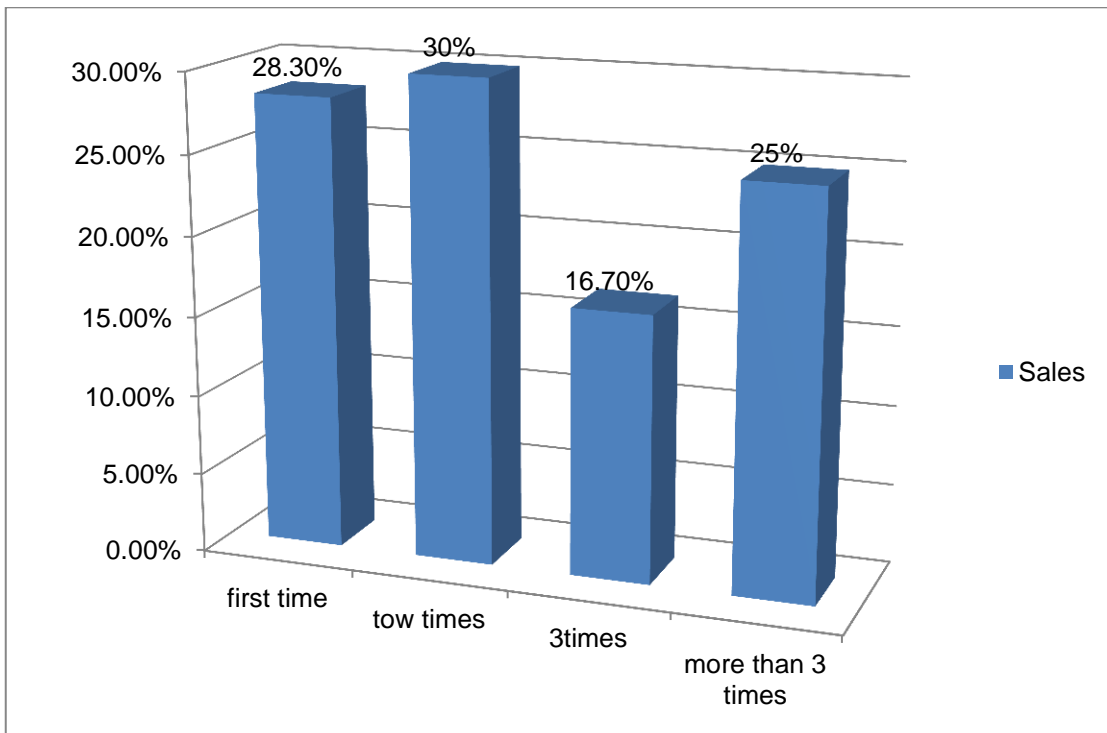


Figure (8) demonstrates the times of diabetic patient’s admitted to Omdurman hospital medicine section. Which is about 28% are at the first time admitted and 30% were admitted about two times ,while 16.7% admitted About 3 times and about 25.3% admitted to the hospital more than 3 times .

Figure (9) types of treatment before hospital admission

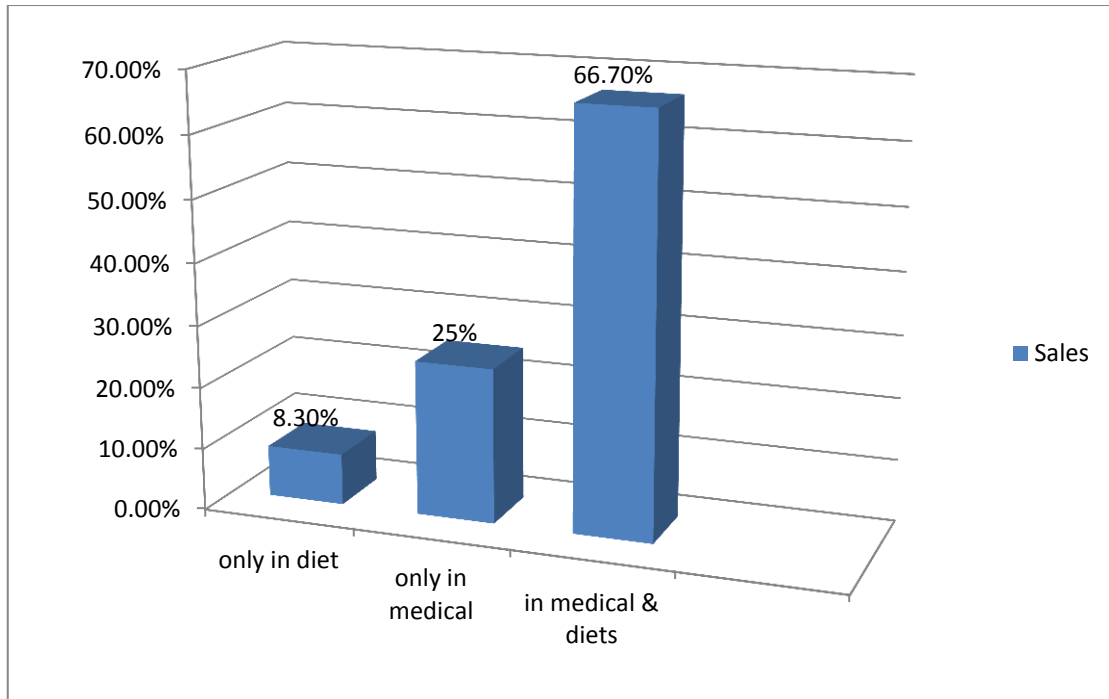


Figure (9) shows the Types of regimen followed by diabetic patients before admission to the hospital, that about (8.3%) of patients were concentrated in diet only, and 25% were used medical treatment only while the others (66.7) were used medical treatment and diets regimen.

**(C): Evaluation of nutrition education:**

Figure (10): nutrition education in the medicine section:

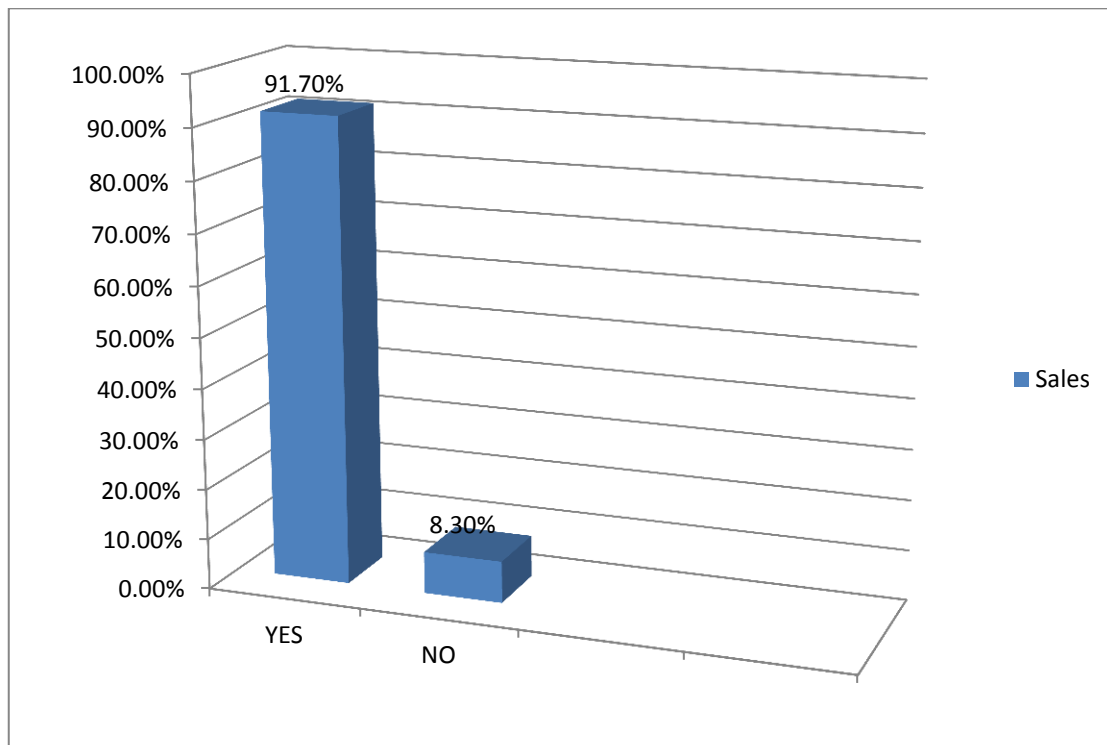


Figure (10) Almost all (91.7%) received nutrition education in the hospital, while (8.3%) didn't received.

Figure (11): nutrition educators:

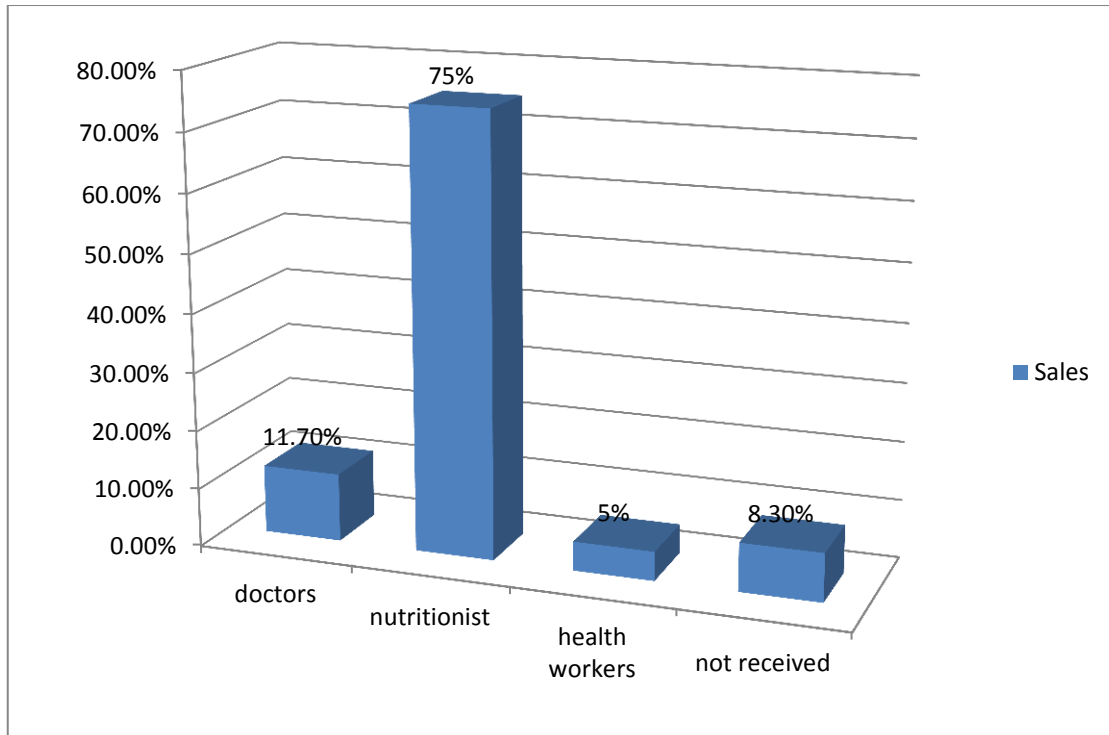


figure (11) shows that ( provider of the nutrition education in the hospital section, .which Almost all (75%) received the nutrition education in the medicine section by nutritionists (11.7%) of patients received the nutrition education from doctors while 5% received from different health workers and 8.3% not received any education .

Figure (12): ways of education receiving:

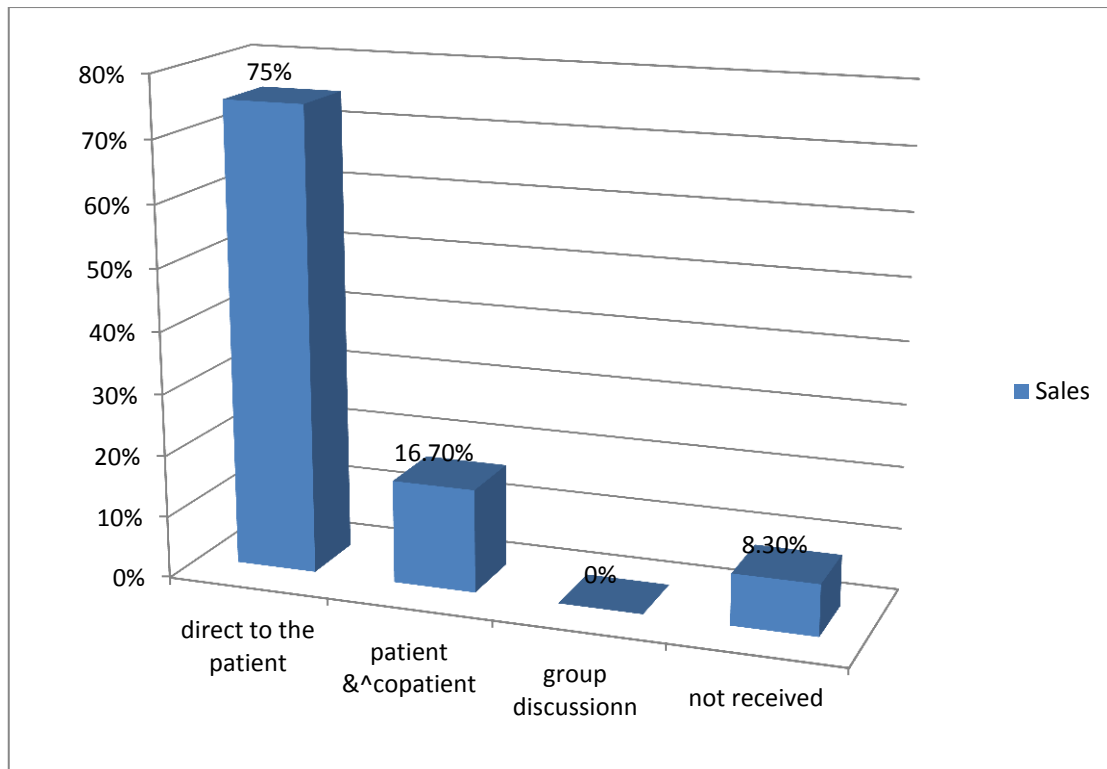
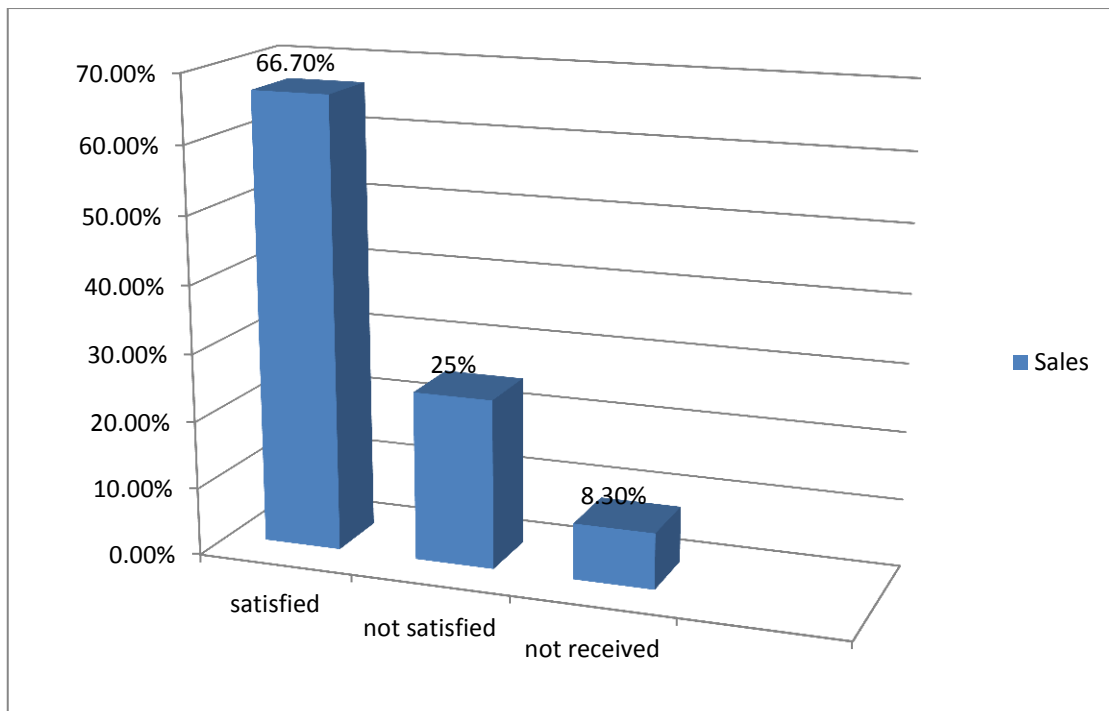


Figure (12) shows that about three quarters of respondents(75%) are received nutrition education directly to the patient but (16.7%) received to the both patient and co patient while non of them received the education in the group discussion .

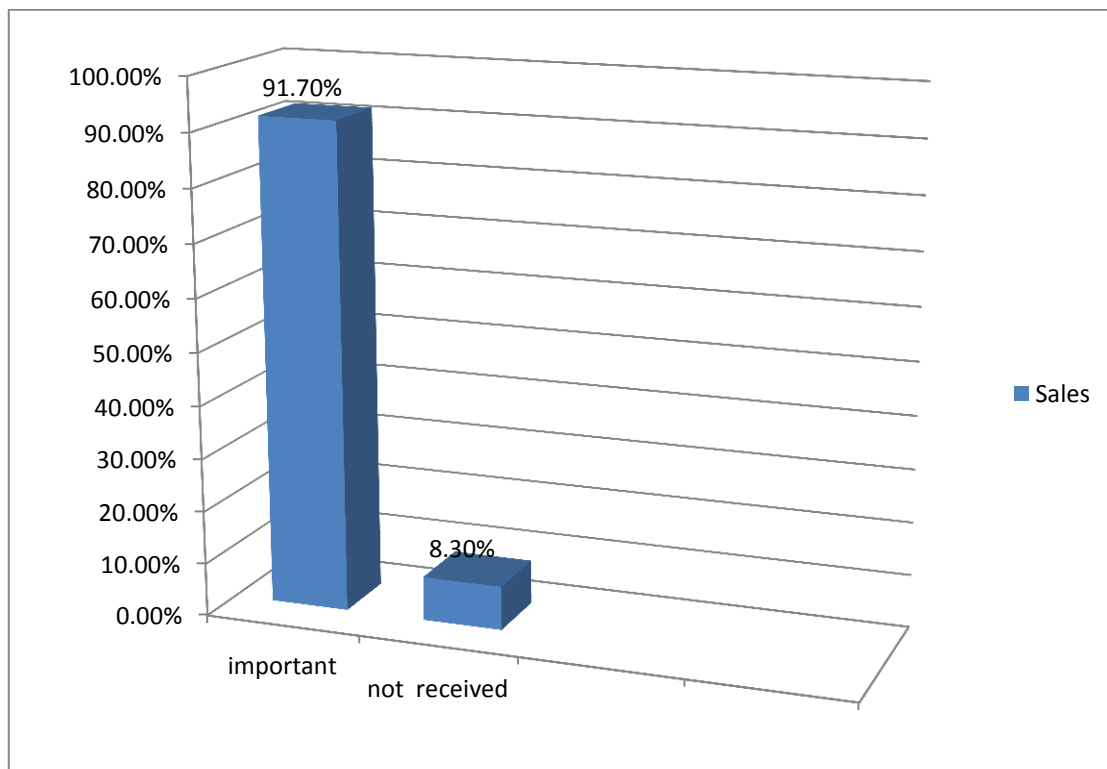


Figure (13): satisfaction of nutrition education



The above figure (13) , showed that almost all (66.7%) had enough information received about diabetes disease ,and (25%) of respondent have no enough information while (8.3%) didn't Received any education.

Figure (14) The impotent of nutrition education for in patient



The above figure (14) above, shows almost all (91.7%) of diabetic patients said that nutrition education is very important , but (8.3 %) didn't receive nutrition education.

Figure (15) other information sources:

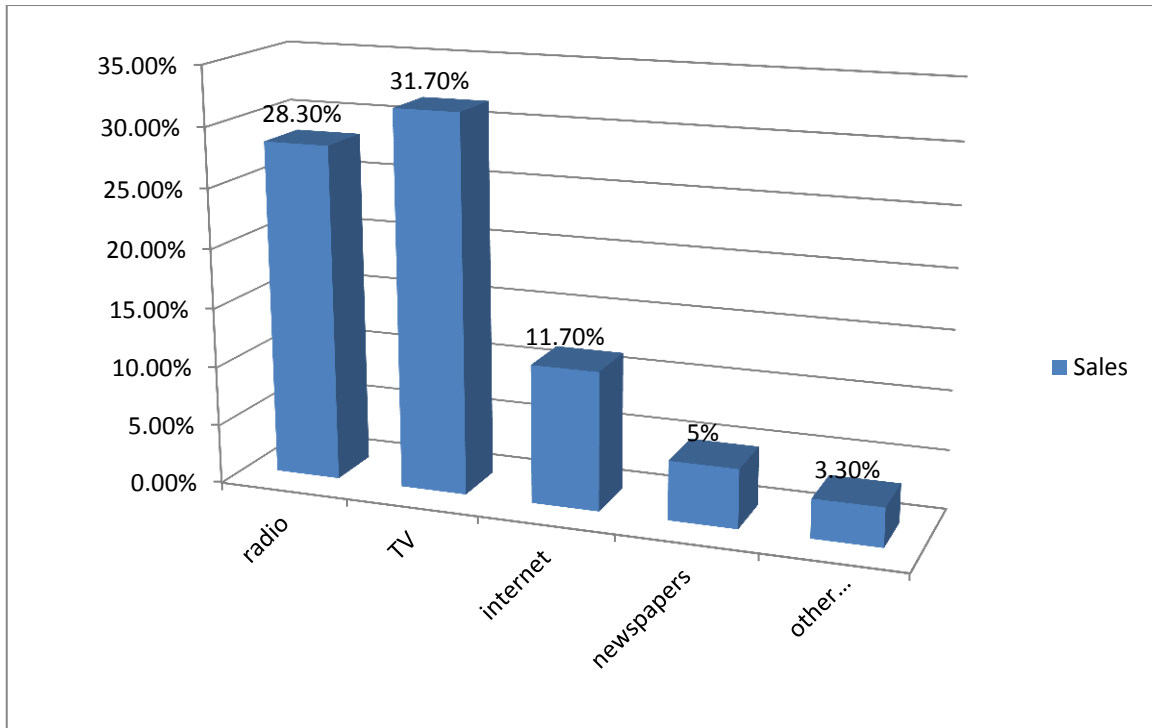
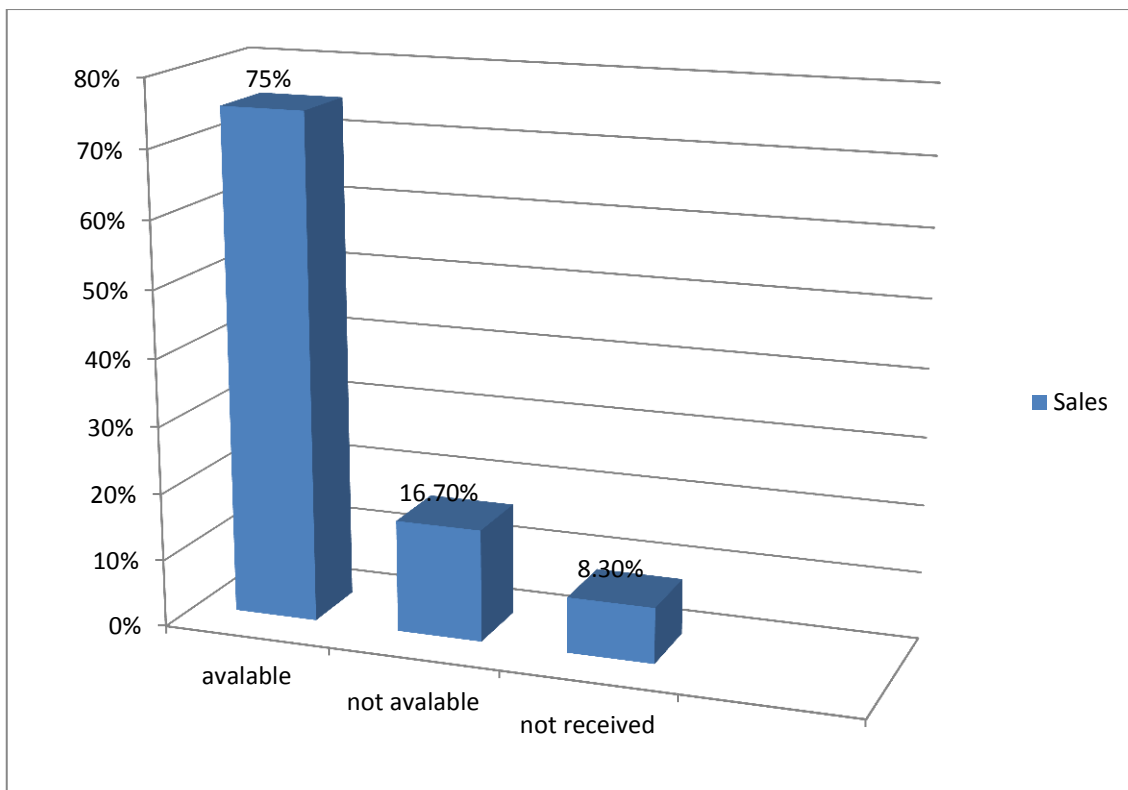


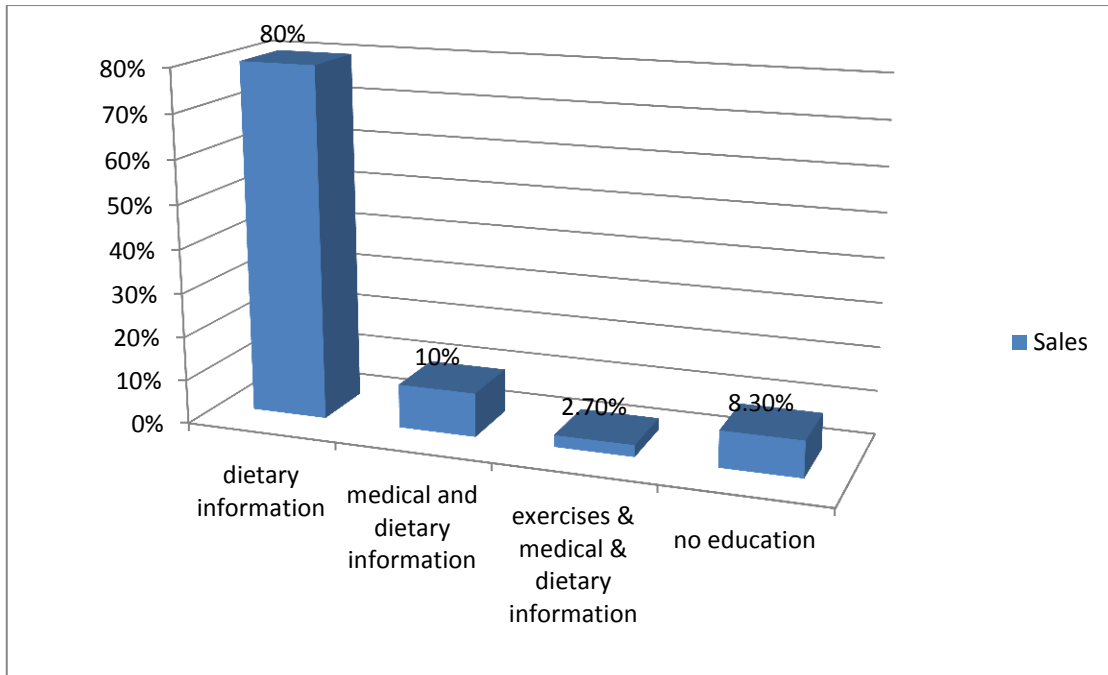
Figure (15) shows other sources of information outside the hospital which the highest of patients (31.7%), received nutrition education from TV, and (28.3%) from radio, and (11.7%) from internet while other respondents were received from other sources like posters, newspapers, or other sources is only 8.3%.

Figure (16) Availability of Nutrition printed material :



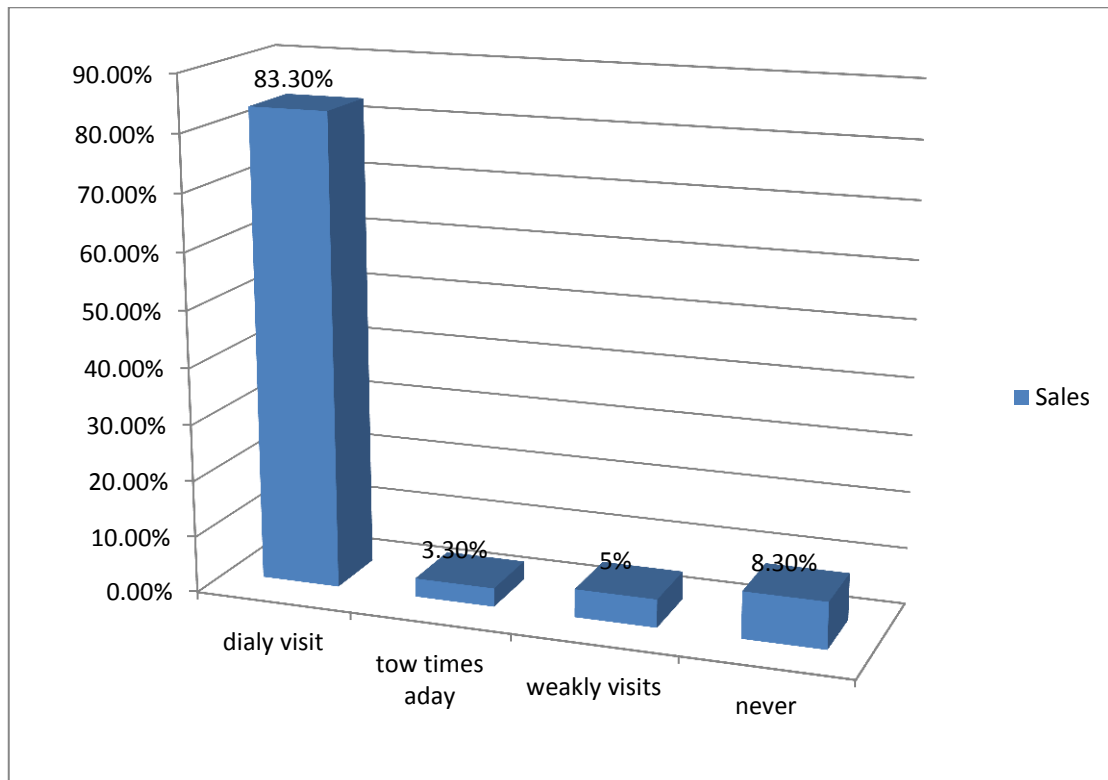
The above figure (16) show that 75% of respondents received printed material but 16.7% were said that printed materials is not available.

Figure (17)Types of printed nutrition information received



The above figure (17) shows that almost all (80%) of the diabetic patients who had received nutritional printed material in the section, contained the dietary information and (10%) of patients said that the printed materials contained medical in addition to dietary information and the others (2.7%) said that there is exercises information in addition to dietary and medical information while (8.3%) they didn't receive printed materials for nutrition education.

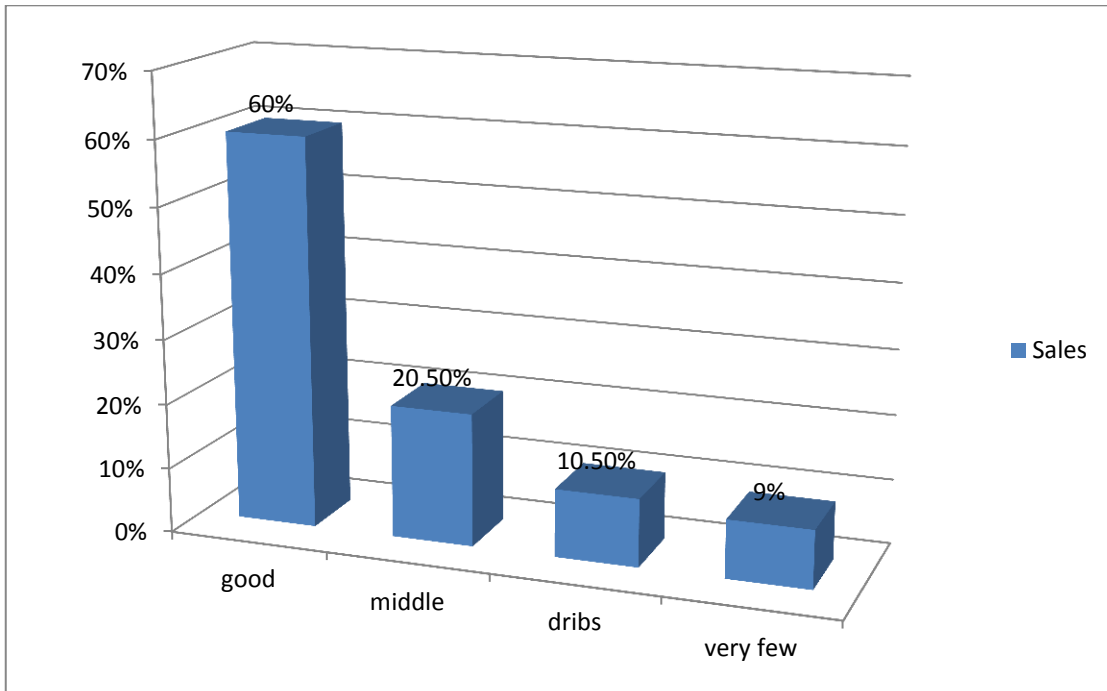
Figure (18) frequency of dietitian visits of patient



In figure (18) about 83.3% of the patients said that the dietitian visits them daily and 5% said the dietitian visits is weakly and (3.3%) responds that is tow times /day but 8.3% said never.

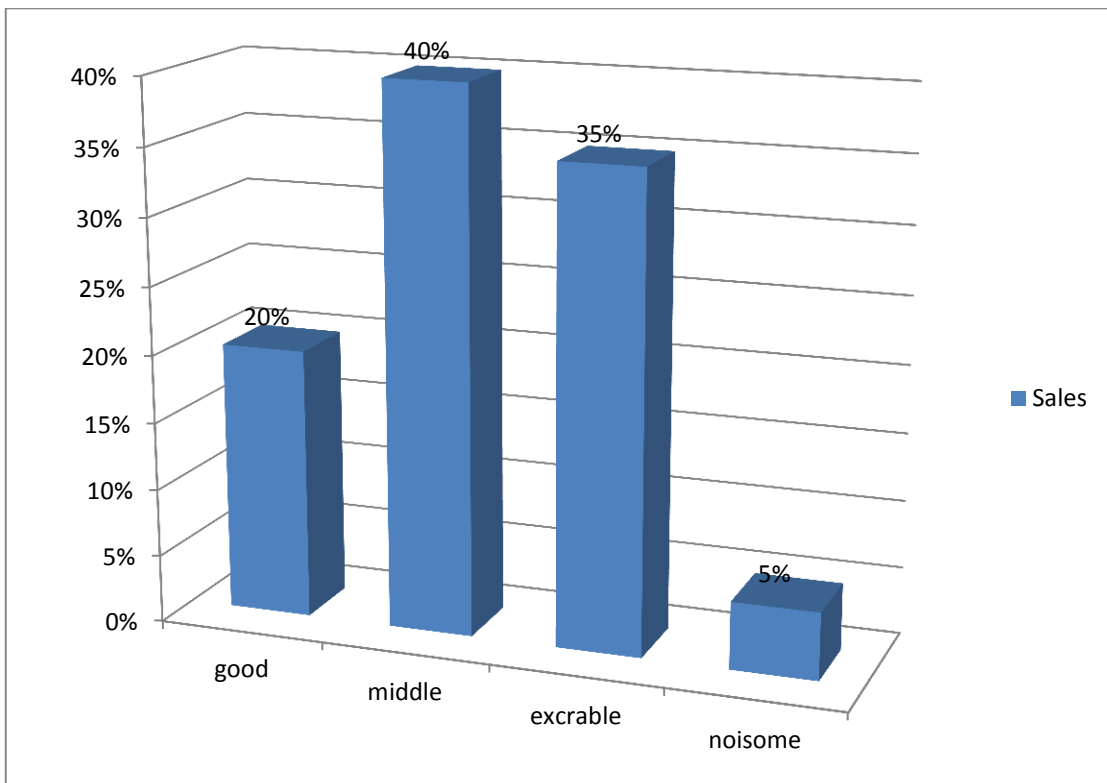
**D-Evaluation of food:**

**Figure (19 ) the quantity**



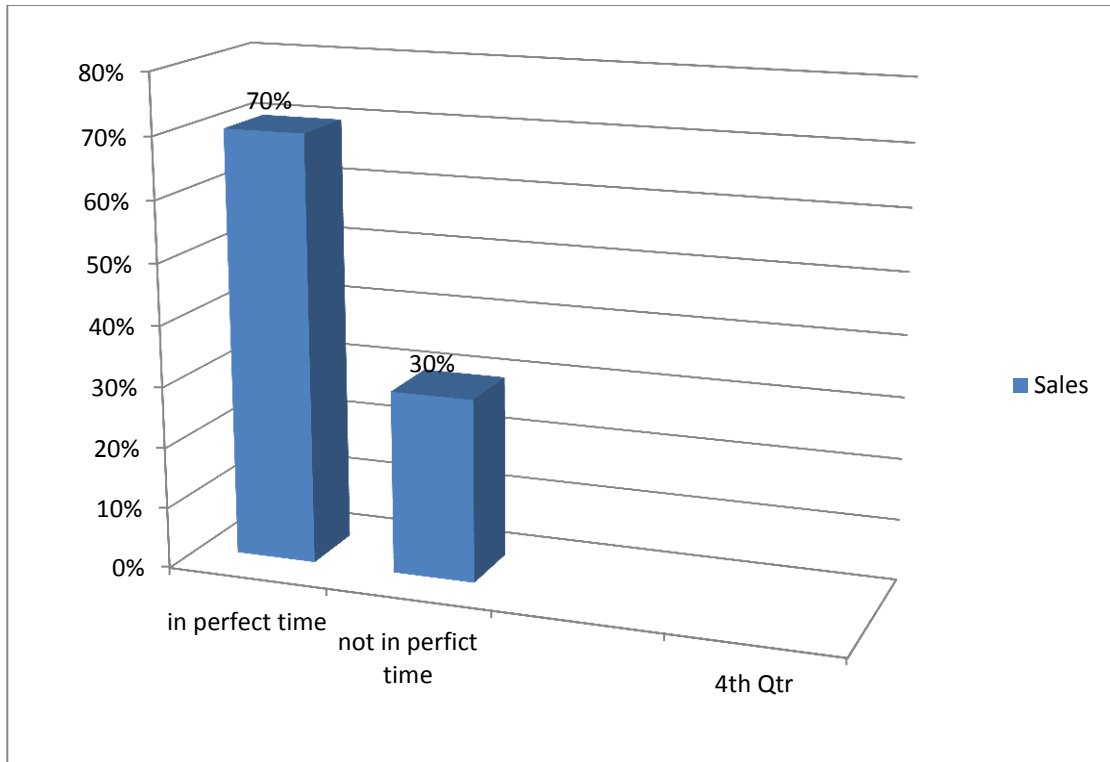
The above figure(19 ) revealed that more than half (60%) of patients agree with the quantity of food received but 20.5 % said it is middle quantity and 10,5 % said that it is few while others were totally disagree and said that it is very few quantity of food.

**Figure (20)- Food quality**



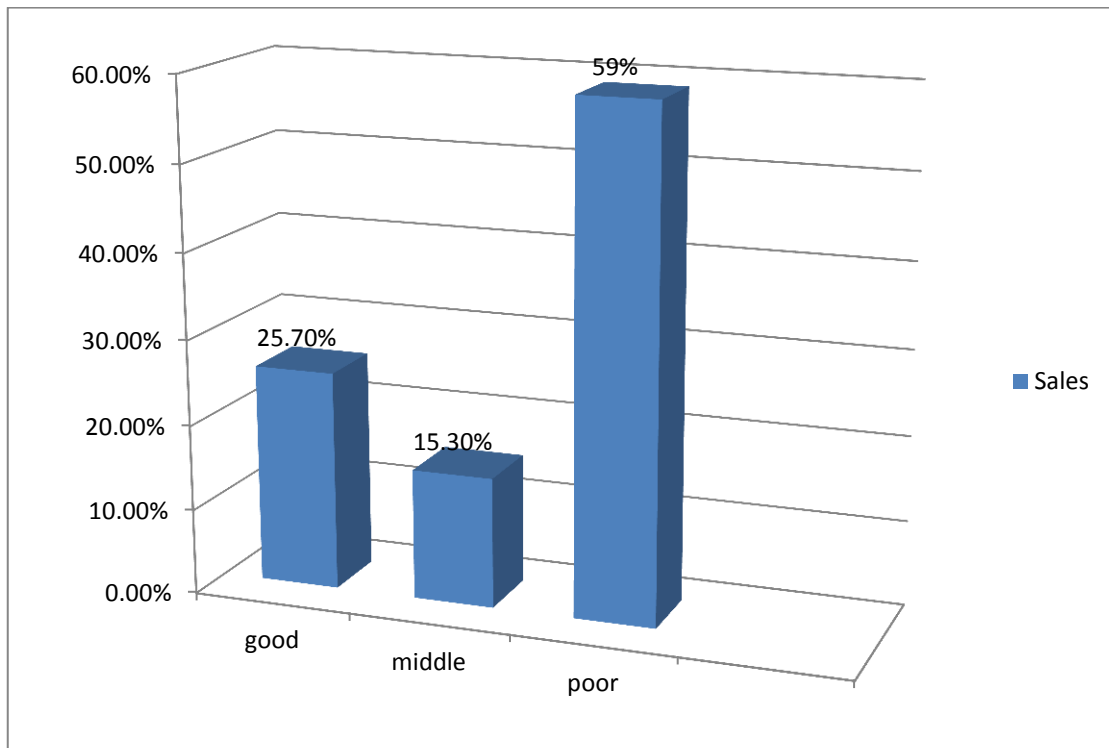
In figure( 20) there were (20% )of patients who received food in hospital agree with the quality and 40% said the quality is middle while 25% were disagree with the quality of food .

Figure (21)- food services time



The above figure (21) shows that most of respondents 70% said that the food distribution for patients is not in perfect time.

Figure (22)- food handling



In above figure( 23) shows that about 25.7% of respondents said that the food handling is good and 15.3% said it is middle while most of them said the food handling is poor.

#### 4. CONCLUSION AND RECOMMENDATIONS

##### Conclusion:

A diabetes diet — medically known as medical nutrition therapy (MNT) for diabetes — simply translates into eating a variety of nutritious foods in moderate amounts and sticking to regular mealtimes. Rather than a restrictive diet, a diabetes diet or MNT is a healthy-eating plan that's naturally rich in nutrients and low in fat and calories, with an emphasis on fruits, vegetables and whole grains. In fact, a diabetes diet is the best eating plan for most everyone. Diabetes is one of the major cause of morbidity and premature mortality and as such is a costly disease to the individual, family and society. Much of the morbidity of diabetes is preventable by good glycemic control, good blood pressure control and regular examination for complications and timely intervention. Nutrition educators are expected to be able to respond to situations or challenges with a body of knowledge and experience, and not to simply perform rote teaching tasks. Therefore it is inappropriate to refer to them as nutrition "trainers, the terms nutrition educator or instructor are preferable. Nutrition education should plan the education process through different media by simple message to improve outcomes, and well-being of the diabetic patients. Diabetes nutrition education has the knowledge and skills to teach diabetic patients how to manage their diabetes to live a healthiest life. And explain how foods affect blood sugar, give specific directions for taking medication correctly and offer guidance on how to lower the risk of diabetes-related complications but due to my observation during patient's interview most of dietitian not trained in dietetic program. Also no posters used as one of education material in the section which is important for patients specially for illiterate.

This study concluded that the majority of the patients attended the hospital more than two times and most of them were male, and their age were over 60 years, also most of them have diabetes history more than 10 years. All of the interviewed in patients were admitted to the hospital more than once times for treatment. The education provided by nutritionists to patients individually, most of them they get all nutrition information about diabetes from dietitian in the hospital, and provided booklets after discharge from hospital. Nutrition education of diabetes should be provided by health care dietitian, and emphasized the use of educational materials. To send educational messages for the patients and their families and then to the large sectors of population.

##### Recommendation:

- Effective nutrition education of the public starts with core, or pre-service, education and training to establish basic competence in both nutrition and education.
- However, core training may take a long time to establish and implement. Another means of promoting effective nutrition education is to provide appropriate in-service training for nutrition educators who are already trained, but whose education lacks some needed background or skills. Even those who are superbly trained need refreshers
- Doctor recommend that patient should see a dietitian to guide him on dietary changes and MNT which can help to control blood sugar (glucose) level and manage the weight.
- A registered dietitian should help to put together a diet based on health goals, tastes and lifestyle and can provide valuable information on how to change your eating habits.
- Develop standards of diabetes nutrition educational program based of national level in Sudan.
- Availability of teaching methods to diabetes educator should be provided with educational material to send educational message to patients and their families.
- Since diabetic disease is increasing, clearly there is a need to rethink on national strategies for disease prevention and control.
- Diversification of the education method so as to deliver and reinforce dietary information through different and simple media.

#### REFERENCES

- [1] ADA, (2014). Diabetes journal, National Standard of Diabetes Self-Management Education. V:37:, supplement. P. 15 -20.
- [2] ELbagir M. N., Eltom M. A. , Elmahadi E. M. A. , Kadam IMS, Berne C. (1998), A high prevalence of DM and impaired glucose tolerance in a diabetes-prone population, the Dangola Community in Northern Sudan. Diabetes Medicine; 15: 164-169
- [3] (Federal Ministry of the Health, 2006).
- [4] International Diabetes Federation. The Diabetes Atlas (IDF.)(2006).
- [5] International Diabetes Federation. The Diabetes Atlas (IDF.)(2011).
- [6] Stevens, M , B. (1979). Clinical nutrition. United states of America, New York NY 10022.