

**STUDY OF HIGH RISK GROUPS ASSOCIATED WITH DIABETES MELLITUS
DISEASE - TEACHING HOSPITAL (DIABETIC CENTER) GADARIF STATE /
EASTERN OF SUDAN -2019.****Dr. Gurashi Gabr Alla Hamad^{1*}, Raga Hassan Amed² and Omniya salah El Heseen³**^{1*}Assistant Professor- Dean of faculty of public & Environmental Health -West Kordofan University.²Assistant Professor- faculty of public & Environmental Health -West Kordofan University.³Department of Public Health Care -Ministry of Health – Gadarif State -Sudan.***Corresponding Author: Dr. Gurashi Gabr Alla Hamad**

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ABSTRACT

This descriptive study was conducted at teaching hospital (Diabetic Center) Gadarif State / Eastern of Sudan with an aim to study the Diabetes Mellitus (DM) and high risk groups 2019, the sample size was 370 patients according to **Richard geiger Formula**, the data were collected by using the following methods, observation, interview, structure questionnaire which distributed for each patient infected with DM disease, the data were analyzed manually using Excel sheets, results depicted as tables and figures. The main result in this study showed that (63%) of the targets Resident in urban area, while (37%) Resident in rural area also indicated that (28%) of targets male, and (72%) female, the study represent that (5%) of the targets in the age group less than 18 years old, while (95%) above 18 years old, the study found that (77%) were educated while (23%) illiterate, as will the study indicated (9%) of patients were single, (76%) married (biggest percent), (5%) divorced and (10%) widow,. The important recommendation in this study that Raising detection rate for DM disease in Gadarif state by Strengthen of referral system and Activation of mobile clinics and teams investigation, Providing of DM center with more medical equipment's, Raising health awareness for patients and community with regard to DM disease by seminars and health lectures, multimedia and educational offers about DM disease, Promote community participation to fight DM disease by volunteer to referring suspects to DM center.

KEYWORDS: Diabetic, Center, high, risk groups.**1 .INTRODUCTION**

Diabetes is a chronic disease that occurs when the pancreas does not produce enough insulin (a hormone that regulates blood sugar) or alternatively, when the body cannot effectively use the insulin it produces.

The classification of diabetes was originally limited to only two categories called.

Type 1 diabetes is characterized by a lack of insulin production.

Type 2 diabetes results from the body's ineffective use of insulin.^[1]

The metabolic abnormalities of diabetes result from inadequate insulin action on target tissues, due to deficient insulin secretion or insensitivity to insulin action, or a combination of both.^[2] The signs and symptoms of diabetes are disregarded by many because of the chronic progression of the disease. People do not consider this as a serious problem because unlike many other diseases the consequences of hyperglycaemia are not manifested immediately. People are not aware that

damage can start several years before symptoms become noticeable.^[3] One such study is DiPiS(Diabetes Prediction in Skåne), which is examining a total of about 10 000 pregnancies expected every year in the Skåne (Scania) region of Sweden that has 1.1 million inhabitants.^[4] Diabetes mellitus should not be managed based on symptoms alone. Glycaemic goals are based on evidence of what glucose levels constitute a risk for developing complications. It is, however, inappropriate to aggressively approach target glucose levels when it may adversely affect the patient.^[5]

The goal of treatment of diabetes mellitus is to control blood glucose and ultimately prevent long-term complications, as shown by major diabetes studies like the United Kingdom Prospective Diabetes Study group and Diabetes Control and Complications Trial.^[6] The backbone of diabetes management is proper diet and regular exercise, which have to be individualized.^[7,8]

Before starting any exercise program, the health provider should do a thorough physical examination to find out

whether or not it is safe for the patient to exercise.^[9] In the Eastern Mediterranean Region, some studies have reported that the occurrence of clinical events related to coronary artery disease are four times higher in patients with diabetes.^[10,11] Many factors that predispose non-diabetic individuals to atherosclerosis are also associated with atherosclerosis in people with diabetes.

These factors include smoking, hypertension and hypercholesterolemia.^[12]

2. OBJECTIVE OF THE STUDY

To determine the most affected groups such as (place, age, gender and occupation).

3. METHODOLOGY

3-1 study design

This study is a descriptive facility- based / cross_sectional study.

3-2 Study area

3-2-1 Gadarif State

Gedarif state cover 75.000 Km2 and lies between latitude 14-16 north and 33-36 E longitude. It is apart of eastern region.

3-2-2 Gadarif Diabetic Center

- GDS west to gadarif teaching hospital and blood bank near to railway police department.
- It provide health service to large number of DM patient in Gadarif State and nearby states.
- The center building composed of one flower divided to 2 clinics, lab, nutrition department, psychological department, counseling unit, operation hall, pharmacy, foot care office, patients waiting hall, financial issues office, counter hall administration office and 8 path rooms.
- The staff cadres of the center is about (67) person divided to : Diabetologist, Director general, Medical Director, Administrative manager
- Doctors, lab technician, nurses, nutritionist, Pharmacist, Cleaning worker, statistical.
- The center open daily from 7am to 2pm except Friday.
- The daily number of ranging between 200 – 250 in all department
- So the monthly number of patient who visit the center almost about 5200-6500.

3-3 Study Population

- The population of Gadarif state is about (2108468) different ethnic groups, most of them are farmers and the others are working in grazing and commerce.
- Most of the population of 90% is Muslims& about 10% of Christians.

3-4 Sampling and Sample Size

$$N = \frac{\left(\frac{Z}{d} \right)^2 \times (0.50)^2}{1 + \frac{1}{n} \left(\left(\frac{Z}{d} \right)^2 \times (0.50)^2 - 1 \right)}$$

(Richard geiger)

Where

N = Sample Size

Z = the value of the standard normal variable corresponding to % level of significance (1.96).

D = marginal error (o.o5)

3-5 Data collection technique

3-5-1 structure questionnaire which distributed for each patient infected with DM.

3-5-2 Interview with Diabetologist and deputy general manager.

3-6 Data analysis

Data was analysis by using computer software (the manual – Excel sheet) and result table and figures.

3-7 Ethical consideration

- Permission was taken from Gadarif ministry of health and social development.

- Strict confidentiality regarding patients information, such as name, full residential address, was considered.

4. RESULTS

Table 1: distribution of cases according to the Residence.

(n=370)

Residence	Frequency	Percent
Urban	232	63
Rural area	138	37
Total	370	100

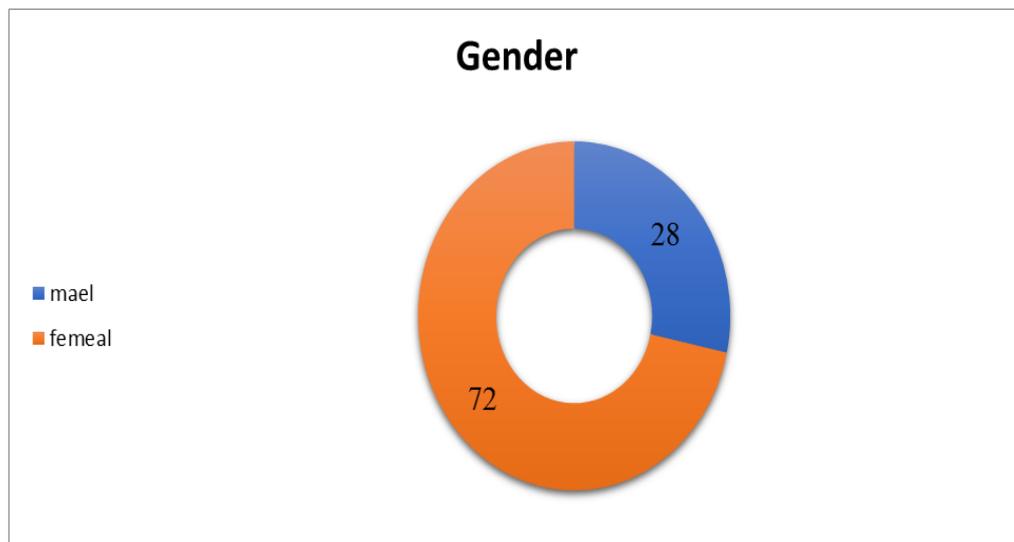


Figure (1): Percent of cases according to the gender. (n=370)

Table (2): distribution of cases according to the Age (n=370)

Age	Frequency	Percent
< 18 years old	352	95
> 18years old	18	5
Total	370	100

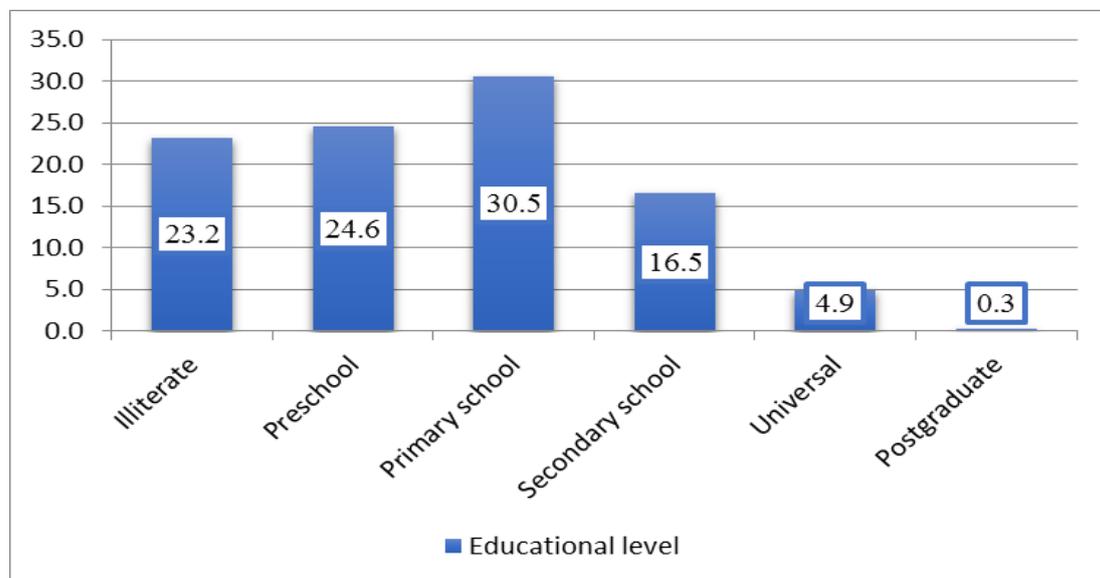


Figure (2): Percent of cases according to the Educational level (n=370).

Table 3: distribution of cases according to the Social status (n=370).

Social status	Frequency	Percent
Single	35	9
Married	280	76
Divorced	19	5
Widow	36	10
Total	370	100

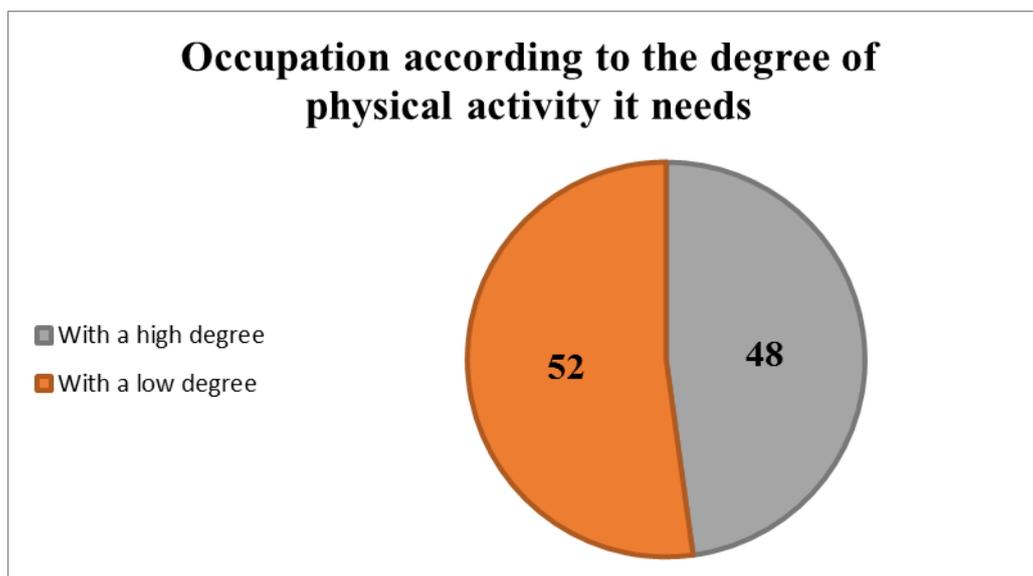


Figure 4-4: Percent of Occupation cases according to the degree of physical activity it needs (n=370)

5.1. DISCUSSION

This Study was conducted at teaching hospital (Diabetic Center) Gadarif State / Eastern of Sudan in 2019.

The study aimed to identify To determine the most affected groups (place, age, gender and occupation).

The study indicated that (63%) of the targets Resident in urban area, while (37%) Resident in rural area. Zimmet P and others 2001^[13] They said (The diabetes epidemic has been attributed to urbanization and environmental transition leading to sedentary behavior and overnutrition.

The study showed that (28%) of targets male, and (72%) female .indicating that female are most susceptible to D.M disease than male. Compare with previous study conducted in Gadarif, eastern Sudan 2017 by researchers Saeed M. Omar and others^[14] has indicated (A total of 422 (70.3%) respondents were women and 178 (29.7%) were men.), While previous study conducted at diabetes center of the KLES hospital and medical research center, Belagavi-India- by researchers (M.V.jali, Sanjay Kamar)^[15] has indicated to (61.99%) were male and (38.01%) female. The InterAct Consortium and other 2011 said (In the European Prospective Investigation into Cancer and Nutrition (EPIC), higher risk of diabetes in men compared with women was observed consistently across different European countries). And Diabetes home [article online] 2016^[16] said (However, this consistency was not as clearly evident in the United States population because the incidence of diabetes among men compared to women was higher in 2010 but lower in 2013, based on NHIS data).

The study confirmed that (5%) of the targets in the age group less than 18 years old, while (95%) above 18 years old. Compare with previous study conducted in Kumasi/ Ghana-2012, by researchers (Agbogli H. K and others)^[17] has indicated to: age group between 18-34

were(37.7%), 35-54 were (50.5%), and above 50 years about (16.8).

The study reported that (23.2%) illiterate, (24.6%) preschool, (30.5%) primary, (16.5%) secondary, (4.9%) university and (0.3%) postgraduate. Compare with previous study conducted in Kumasi/ Ghana-2012, by researchers(Agbogli H. K and others) has indicated to: no education about (16.8%), basic (54%), secondary (21.2) and (8%) tertiary.

The study has indicated (9%) of patients were single, (76%) married (biggest percent), (5%) divorced and (10%) widow. Compare with previous study conducted in University Hospital, in Montes Claros, state of Minas Gerais, Brazil /2015, by researchers (Ellen FernandS FlÁVio SilVa)^[18] has indicated (15%) were single, (54%) married, (7%) divorced, (3%) widow, and (11%) common low partener.

5.2. CONCLUSION

The present study reveals that various demographic, socioeconomic and genetic factors play a vital role in the etiology of diabetes mellitus disease.

Most important factor found were young age group, female gender, low socioeconomic status, low education standard and low physical activities exposure to DM infected patients, obesity and co-existing immune-compromised disease.

Hence this study provides useful information about the epidemiological factors for DM disease that can used to control disease by preventing these potential risk factors in population and timely diagnosis and providing treatment for DM.

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