CONTRIBUTING FACTORS OF DIABETES MELLITUS AMONG CLIENTS ATTENDING IN PRIVATE HOSPITAL OF COLLEGE OF MEDICAL SCIENCES, CHITWAN

By

Sangita poudel

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RESEARCH APPROVAL SHEET

Research on "**Contributing Factors of Diabetes Mellitus among Clients Attending in Private Hospital College of Medical Sciences**, Chitwan." My bonafide work is being submitted for approval to Tribhuvan University, Institute of Medicine, and Nursing Campus Birgunj to fulfill the requirement of Bachelor in Nursing Program (Hospital Major).

Student: ……..

Sangita Poudel

Research approved by:

Campus Chief: ……

Associate Professor: Muna Rana

T.U, I O M,

Nursing Campus Birgunj

Research Advisor: ……

Instructor: Ganga Panta

Nursing Campus Birgunj

BN Programme Co-coordinator: …….

Instructor: Sita Oli

Nursing Campus Birgunj

Date:

ABSTRACT

Background: The prevalence of diabetes mellitus is increasing rapidly throughout the world both in Developing and developed countries. Type2 diabetes is a global public health crisis that threatens the economies of all nations, particularly developing countries it is self manageable disease. It can be managed through diet, physical activity, controlling weight, avoidance of smoking and alcohol.

Objectives: This study is to identify contributing factors of type two diabetes mellitus among the clients attending in Private Hospital College Of Medical Sciences Chitwan.

Methodology: A descriptive study design was used for the study and semi structured questionnaire was used to collect the data .Collected data were analyzed by using frequency, mean, percentiles and standard deviation (Descriptive Statistic) . A total 50 clients were selected who had diagnosed Type2 Diabetes Mellitus and conducted in private hospital of college of medical sciences, chitwan and selected by using non probability purposive sampling technique.

Result: This study shows that diabetes mellitus's effects increase with age, majority (32%) of the respondents under the age group (50-59) years. and prevalence of diabetes was higher in urban area (66%) Affecting female more than half (52%). Majority (72%) of the respondents were literate, Regarding occupation 46% were engaged in Household activities, Among the 50 respondents (46%) had positive history of diabetes. Fourty two percent of the respondents used to do exercise. Regarding risk behavior more than half (56%), of the respondents had habit of Smoking and (42%) had habit of alcohol consumption. Just less than half (48%) of the respondents used to see TV during leisure time, according to body mass index (BMI) (32%) Were overweight was found which was to be predisposing factor of diabetes mellitus. More than half (54%) were physically inactive which was to be predisposing factor of diabetes mellitus. most of (86%) had high carbohydrate and fatty food intake habit, and (40.9%) had intake high fatty diet.

Conclusion: In conclusion, it can be concluded that diabetes mellitus was increasing age, positive family history, physical inactivity, diet, smoking habit and more prevalent in urban area. So awareness programme is needed to prevent and control the disease and risk factors.

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CHAPTER-I

INTRODUCTION

1.1Background

Diabetes is a major public health problem globally with an increasing disease trend. The prevalence of diabetes mellitus is increasing rapidly throughout the world both in developing and developed countries.

Type 2 diabetes results from insulin resistance, a condition in which cells fail to use insulin properly, sometimes combined with an absolute insulin deficiency. This form was previously referred to as “non insulin-dependent diabetes mellitus”. (Martiner, 2013)

Globally it is estimated that 382 million people suffer from diabetes for a prevalence of 8.3%. North America and the Caribbean is the region with the higher prevalence, 36,755 people with diabetes (11%) followed by the Middle East and North Africa with 34,571 people with diabetes (9.2%). Western Pacific regions, with 138,195 people with diabetes, is the region with higher number of people with diabetes, however its prevalence is 8.6%, close to the prevalence of the World. (Martiner, 2013)

Type2 diabetes is a global public health crisis that threatens the economies of all nations, particularly developing countries. Fueled by rapid urbanization, nutrition transition, and increasingly sedentary lifestyles, the epidemic has grown in parallel with the worldwide rise in obesity. Asia's large population and rapid economic development have made it an epicenter of the epidemic. Asian populations tend to develop diabetes at younger ages. Several factors contribute to accelerated diabetes epidemic in Asians, including the "normal-weight metabolically obese" phenotype; high prevalence of smoking and heavy alcohol use; high intake of refined

carbohydrates (e.g., white rice); and dramatically decreased physical activity levels. (Hu, 2011)

The prevalence of diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. The prevalence of diabetes is higher in men than women, but there are more women with diabetes than men. The urban Population in developing countries is projected to double between 2000 and 2030. The most important demographic change to diabetes prevalence across the world appears to be the increase in the proportion of people _65 years of age. The number of people with diabetes is increasing due to population growth, aging, urbanization, and increasing prevalence of obesity and physical inactivity. (Wild, Roglic, Green, Sicree, &King, 2004)

The World Health Organization estimates that more than 346 million people worldwide have diabetes. These numbers are likely to more than double by 2030. In 2004, an estimated 3.4 million people died from consequences of high blood sugar. Almost 80% of diabetes deaths occur in low and middle-income countries. Almost half of diabetes deaths occur in people under the age of 70 years. 55% of diabetes deaths are in women only. Most notably, diabetes deaths are projected to increase by over 80% in upper-middle income countries between 2006 and 2015. The overall risk of dying among people with diabetes is at least double the risk of their peers without diabetes. Diabetes and its complications impose significant economic consequences on individuals, families, health systems and countries (WHO, 2011).

The Asian Diabetes Association estimates that approximately half of the people with diabetes are dwelling in the Asian countries like India, Nepal and so on. The association also has ranked diabetes as fourth leading cause of death in this disease. Diabetes is a major lifestyle disorder, the prevalence of which is increasing globally. Asian countries contribute to more than 60% of the world's diabetic population as the prevalence of diabetes is increasing in these countries. Socio-economic growth and industrialization are rapidly occurring in many of these countries. The urban-rural divide in prevalence is narrowing as urbanization is spreading widely, adversely affecting the lifestyle of populations. (Ambady, Snehalatha, Shetty, & Nanditha, 2012)

Diabetes mellitus is the chronic metabolic disorder and it becomes global public health problem and major epidemic of the twentieth century. Diabetes mellitus has been estimated that more than 33million people in India are affected by diabetes mellitus. (Shankaraiah & Reddy, 2014)

Diabetes is reaching epidemic proportions. The International Diabetes Federation estimated that approximately 194 million people around the world had diabetes. By2025 this figure is expected to rise to 333 million, amounting to 6.3% of the world's population living with diabetes the prevalence of type 2 diabetes is rising at an alarming rate throughout the world, due to increases in life expectancy, obesity and sedentary lifestyles. In China, where 2.7% of the adult population is affected by type 2 diabetes, the number of people with this condition is likely to exceed 50 million within the next 25 years. ("*Diabetes and Footcare",* 2005)

Diabetes Mellitus is a major health problem of all the countries. Low and middle income countries face the greatest burden of diabetes mellitus. The prevalence of diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. : Diabetes in urban Indians is reaching an epidemic and the prevalence of type 2 diabetes mellitus in Asian Indians ranges from 2.7% in rural India to 14% in urban India. Diabetes prevalence was 25.9% and higher proportion of diabetes was demonstrated in male (27.1%) than the females (24.8%) in Kathmandu valley of Nepal. All studies were showed the higher prevalence of diabetes in India and Nepal. (Yadhav, Sathian, & Kalai, 2012)

Age was found to be a significant factor. The 40-49 age groups had a 4.7-fold and 50-55 age group 5.5-foldlikelihood of developing DM. Physical activity was measured according to their type of work and was divided into minimal, moderate and hard physical activity. For those involved in doing hard activity, the chance of getting diabetic was by 89% less when compared to those doing minimal activity. Those with a family history of DM had greater chance of getting the disease as compared to those without a family history of DM. Tobacco use appeared as a significant risk factor for the occurrence of DM. (Valliyot, Sreedharan, Muttappallymyali, & Valliyo, 2013).

During exercise, whole-body oxygen consumption may increase by as much as 20-fold and even greater increases may occur in the working muscles. In patients with

type 2 diabetes, exercise may improve insulin sensitivity and assist in diminishing elevated blood glucose levels into the normal range. ("*Diabetes Mellitus and Exercise*", 2002). It is a serious problem it is self manageable disease. It can be managed through diet, physical activity, controlling weight, avoidance of smoking and alcohol.

1.2 Statement of the Problem

Diabetes mellitus is the chronic metabolic disorder and it becomes a global major public health problem and major epidemic of the 21st century. Life style modification in relation obesity, eating habit, and physical exercise can play a major role in the prevention of diabetes .Nowadays, there has been progress in the development of behavioral strategies to modify these life style habits and it is not easy to accept for long term basis .If people maintain a balanced diet and physical exercise this can have real and potential benefits for their prevention and control of Risk of diabetes. (Shrestha & Ghimire, 2012)

Diabetes is a huge and growing problem and the costs to society are high and escalating .In Africa 76% of deaths due to diabetes were in people under the age of 60 and in south east Asia half of the people with diabetes are undiagnosed .In 2013 East Asia 883millions cases had diagnosed diabetes and it is estimated that 1217 million people have Diabetes. ("*Diabetes Atlas*", 2013).Diabetes mellitus is a preventable disease .Risk factor of diabetes mellitus can be reduced with life style modification exercise, changing pattern in the diet.

1.3 Rational of the Study

In the study 347 million people worldwide have diabetes. In 2004 estimates 3.4 million people died from consequences of fasting high blood sugar level. A similar number of deaths have been estimated for 2010 More than 80% of diabetes deaths occur in low and middle income countries ("*Diabetes*", 2013)

The majority of the 382 million people with diabetes are aged between 40 and 59, and 80% of them live in low- and middle-income countries. All types of diabetes are on the increase, type 2 diabetes in particular: the number of people with diabetes will increase by 55% by 2035. Diabetes caused 5.1 million deaths in 2013. Every six seconds a person dies from diabetes. 175 million people with diabetes are

undiagnosed. The prevalence of type 2 diabetes is rising at an alarming rate throughout the world, due to increases in life expectancy, obesity and sedentary lifestyles. The dramatic rise in diabetes prevalence can be found in India and China. (Intertenational Diabetes Federation Diabetes Atlas, 2013)

Diabetes is a major lifestyle disorder, the prevalence of which is increasing globally. Asian countries contribute to more than 60% of the world's diabetic population as the prevalence of diabetes is increasing in these countries. Socio-economic growth and industrialization are rapidly occurring in many of these countries. The urban-rural divide in prevalence is narrowing as urbanization is spreading widely, adversely affecting the lifestyle of populations. (Ramachandran, Snehalatha, Shetty, & Nanditha, 2012)

The prevalence of diabetes were 674,120 cases in Nepal in 2013.Total diabetic adult population (20-79yrs) 14,933 were suffered from diabetes and 14,531 adults were deaths due to diabetes in Nepal in 2013. ("*Diabetes in Nepal*"2013).Diabetes prevalence was 25.9%and higher proportion of diabetes was demonstrated in male (27.9%) than females (24.8%) in Kathmandu valley of Nepal. (Sathian, Yadhav, & Kalai, 2012)

Incidence of diabetes inhabitants in chitwan is very high. Prevalence of diabetes conducted in Chitwan Medical College Teaching Hospital (CMCTH) and males (53.6%) & females (46.4%) were affected. (Shrestha, Yadav, Mandal, Amatya, & Islam, 2013)

Diabetes mellitus is a preventable disease. Risk factor can be reduced through life style modification, exercise, changing pattern in the diet .For the identifying contributing factors and help to prepare the patient to adopt further management of diabetes mellitus. So I have interested to study the contributing of diabetes mellitus.

1.4 Objective of the Study

General Objective

To find out the contributing factors of diabetes mellitus among the diabetic clients.

Specific Objectives

To identify the Family history and personal history of the clients.

To identify the life style of the clients. (Diet, physical activity)

To identify the risk factors of the client which lead to diabetes mellitus. (Alcoholism Smoking, obesity)

1.5 Significance of the Study

The findings on factors associated with contributing factor of diabetes mellitus will equip local policy makers and stakeholders at the facilities with the relevant information to inform policy on their health services for quality improvement on health system. The finding of this study will also help interested researcher in carrying out further research with this regards in large scale.

1.6 Conceptual Framework

Conceptual framework shows relationship among concepts. In this conceptual framework Age, sex, Family history is non modifiable risk factors and diet, physical activity, occupation, obesity alcoholism and smoking are modifiable risk factors which contribute to type2 Diabetes Mellitus. This contributing factor which causes impaired insulin secretion or insulin resistance .After insulin secretion impaired from pancrease beta-cell dysfunction occurs and impaired glucose tolerance and Type2 diabetes mellitus occurs.

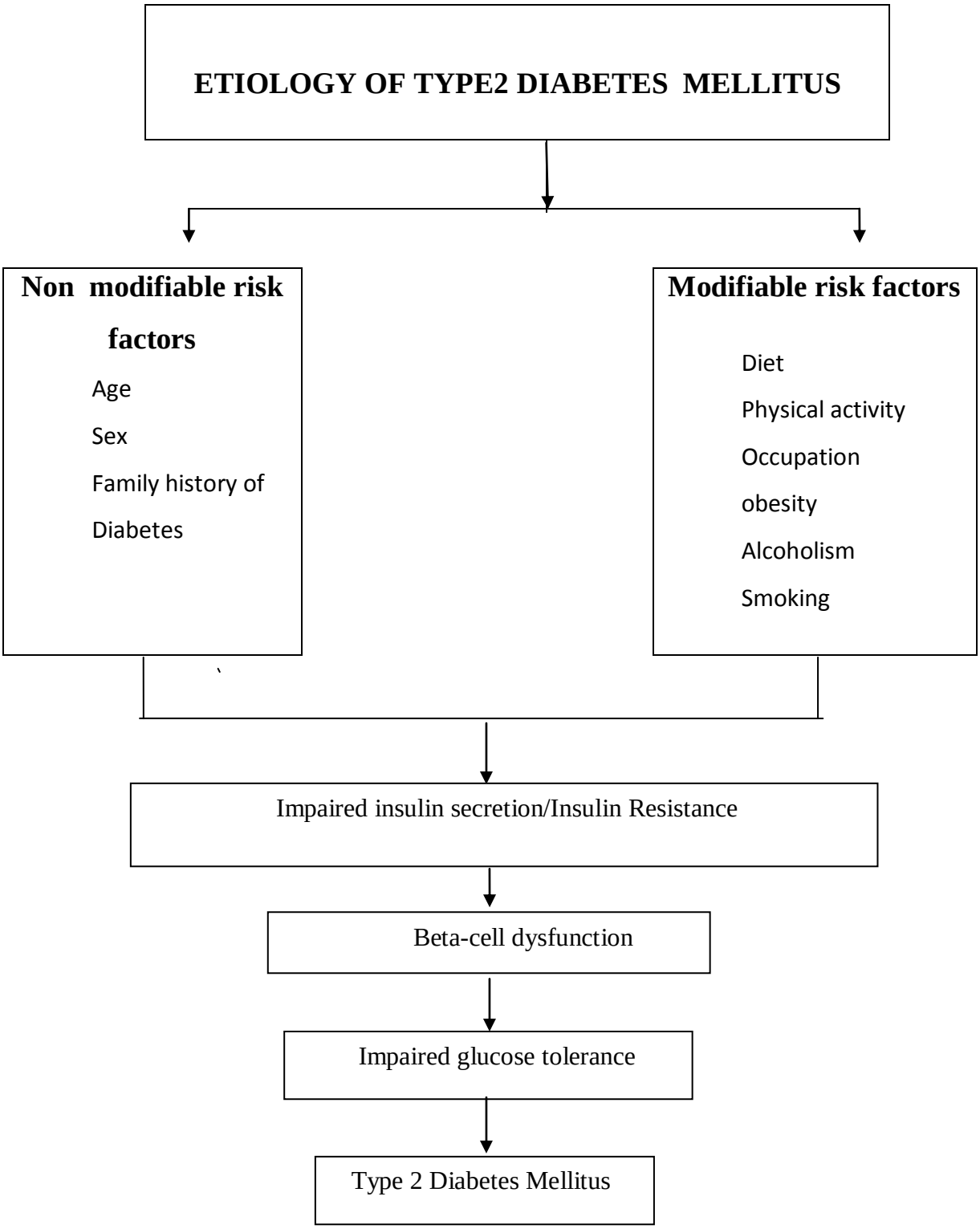
ETIOLOGY OF TYPE2 DIABETES MELLITUS
Non modifiable risk factors
Age
Sex
Family history of Diabetes
Modifiable risk factors
Diet
Physical activity
Occupation
obesity
Alcoholism
Smoking
Impaired insulin secretion/Insulin Resistance
Beta-cell dysfunction
Impaired glucose tolerance
Type 2 Diabetes Mellitus

Figure: 1

1.7 Research Question

What are the contributing factors of type 2diabetes mellitus among diabetic clients attending in college of medical sciences medical OPD?

1.8 Operational Definition

Type 2 Diabetes Mellitus:

Type 2 diabetes results from insulin resistance, a condition in which cells fail to use insulin properly, sometimes combine with absolute insulin properly, sometimes combines with an absolute insulin deficiency. This form was previously referred to as "non insulin dependent diabetes mellitus." (martiner, 2013)

Contributing factors:

In this study, contributing factors are those factors, which increase the chance of getting diabetes mellitus in clients. That includes modifiable and non- modifiable risk factors.

Non – Modifiable factors: Age, sex, family history

Modifiable factors: Diet, physical activity, obesity, occupation, alcoholism and smoking.

Diabetes Mellitus: In this study diabetes mellitus refers to that disease diagnosed by physician.

Diabetes client: In this study diabetes clients are those who were diagnosed with Type2 diabetes mellitus by physician and all those clients who were taking hypoglycemic medicine or not and who came in Medical OPD for check up and follow up.

Age of respondent: Age of respondent denote above 40 years of age who have diagnosed diabetes mellitus

Physical (work) Activity: Physical activity means movement of the body that uses energy.

Active: Active physical Activity includes those activities which are walking briskly, General gardening, light yard work etc)

Hard Working: Hard working includes those activities which are heavy yard work as chopping wood, running, heavy other daily work.

Inactive: Inactive activities include those activities which are doing light household activities.

1.9 Delimitation of the study

The study will be carried out only in one setting and sampling size is small (50). The sampling techniques of this study will be Non - Probability Purposive sampling so it could not be generalized to other places.

CHAPTER- II

LITERATURE REVIEW

2.1 Introduction

Literature review is conducted in related literature that include both electronic and manual areas such as journals, articles, abstract from the internet, programmes computer search etc. The purpose of literature review was to develop a understanding insight into the previous research related to the present study .This study helped to gain knowledge on the subject area, to develop instrument for data collection and facilitate the analysis and interpretation of the findings.

2.2 Review of the literature

A Cross sectional study was conducted on Prevalence of Undiagnosed Diabetes Mellitus and its Risk Factors in selected institutions Bishoftu Town, East Shoa, Ethiopia and 422 volunteers proportionally from five institutions were involved in the study. Though not statistically significant DM was higher in males5.7% and females in 3.7%, Family history of DM were 5.26% and no family history were 4.95%. Education profile of the participants who respond showed 70% participants had literate and 57% of the participants had primary or secondary education; the remaining 43% had college or university education. Most subjects' occupation had moderate physical activity 48.7%. followed by vigorous 28.6% and sedentary 22.7%.Information was collected from study participants about the risk factors and it was indicated that distribution of BMI as normal were 4.3%, overweight were 58.3% and obese were 29.1% Moreover, 21.7% were physically inactive, 4.3% were smokers and 48.1% consumed alcohol daily whom 40% were frequent drinkers while 30% were social drinkers, obesity, physical inactivity alcohol consumption is risk factors associated with Type 2 diabetes Mellitus. (Megerssa, Gebre, Birru, Goshu, & Tesfaye, 2013).

A case control study was conducted on risk factors of type2 diabetes mellitus in the rural population in Kerala India and 100 cases were participated in the study. When the participants were compared according to occupation, it was found 25% of cases were housewife, 7% of cases were manual laborers, 10% were service holder Other occupational groups included professionals, mechanics, etc. A highly significant Statistical association was observed between diabetes status and occupation Dietary pattern showed that among 93% were having Non-vegetarians diet and 7% were vegetarians, Assessment of self-reported physical activity showed that 42% of cases were involved in heavy work. 39% were involved in moderate physical activity, respectively, whereas 19% of cases were involved in sedentary activity. When compared according to body mass index(BMI) Whereas 17% of cases had BMI in the range of 18.5-24.9Kg/m2 .Overweight was recorded in 45% of cases in range of 25-29 kg/m2and BMI greater than 30 kg/m2was found in only 33% of cases. There was statistically significant association between BMI and diabetic status. (Valliyot, Sreedharan, Muttappallymyali, & Valliyo, 2013)

A Cross-sectional study was conducted on Prevalence of diabetes mellitus among non institutionalized elderly in Monastir City A total of 598 elderly aged 65 to 95 years were included. The prevalence of DM was 27.4% (29.2% in males vs. 26.5% in females). Elderly with DM showed higher prevalence of obesity and abdominal obesity. Urban residents had a higher prevalence (29.2%) than did their rural (15.9%) counterparts. According to BMI 19.9% were normal, 31.1% were overweight and 49% were obese. (Hammami, Mehri, Hajem, Koubaa, Souid, & Hammami, 2012).

A cross sectional study was conducted on prevalence on diabetes in India and Nepal. Diabetes in urban Indians is reaching an epidemic and the prevalence of type 2 diabetes mellitus in Asian Indians ranges from 2.7% in rural India to 14% in urban India. The latest report the total percentage of new and old cases of diabetes mellitus was 19.78%, 16.06% in males and 22.04% in females of Karnataka, India. Diabetes prevalence was 25.9% and higher proportion of diabetes was demonstrated in male (27.1%) than the females (24.8%) in Kathmandu valley of Nepal. All studies were showed the higher prevalence of diabetes in India and Nepal (Sathian, Yadhav, & Kalai, 2012)

The case control study was conducted on Risk Factors associated with Type 2 Diabetes Mellitus in West Region of Algeria and total 280 cases (with diabetes) and 271controls (without diabetes) were participated and revealed that about 69.2% of participants were female, 37.4% were male, around 80% were physically inactive, about, 90% were non-smoker, nearly 27% had normal BMI, 35% were overweight and 37.5% were obese. Significantly 85.4% diabetic had low educational level .Low educational level, Low economic level, obesity, physical inactivity are risk factors associated with Type 2 diabetes Mellitus. (Belmokhtar, Belmokhatar, Dali-Sahi, & Mohamed, 2011)

3 cohorts and Meta analysis study was done on Red meat consumption and risk of type 2 diabetes. During 4,033,322 person-years of follow-up, we documented 13,759 incident T2D cases. After adjustment for age, BMI, and other lifestyle and dietary risk factors, both unprocessed and processed red meat intakes were positively associated with T2D risk in each cohort. The results were confirmed by a meta-analysis (442,101 participants and 28,228 diabetes cases): the RRs (95% CIs) were 1.19 (1.04, 1.37) and 1.51 (1.25, 1.83) for 100 g of unprocessed red meat and for 50 g of unprocessed red meat, respectively. We estimated that substitutions of one serving of nuts, low-fat dairy and whole grains per day were associated with a 16–35% lower risk of T2D. Red meat consumption, particularly processed red meat, is associated with an increased risk of Type 2 Diabetes Mellitus. (Sun, Bernstein, Schulze, Manson, Willett, & Hu, 2011)

A study on Assessment of risk factors among type2 diabetic population in south Malabar region Kerala among 206 participants conclude that about 53.3% of participants were male, around 46.6% were female, Majority 26.6% of participants were engaged in highly physically active occupation, 38.83% were moderately active 34.46% were least active. Among participants 69.4% of the respondents had a clear family history of diabetes, about 60.6% of participants had average body built, only 14.56 were obese and 24.7% were lean. (Shihabudheen K. M., NV, C, P, Abid, & Seena, 2010)

The total 902 participants are participated in the study on prevalence of risk factors of diabetes mellitus in a non diabetic population. It is revealed that identification of risk factors for the development of type 2 diabetes mellitus is a necessary step in planning

prevention programmes for diabetes mellitus. Socio-demographic data, family history of diabetes, and data on work related physical activity were recorded. Height, weight and waist-hip measurement were calculated. About 50% of the respondents were inactive. 52.7% were currently taking alcohol. 3.5% of the subjects admitted to parental history of diabetes mellitus. 21.4% were either overweight or obese. 32% of males and 86% of females had abnormal waist circumferences. 23.8% males and 74.9% females had abnormal waist-hip measurement. Inactivity, alcohol usage and excess weight appear to be dominant risk factors for development of type 2 DM in this group. (Puepet & Ohwovoriole, 2008)

Prospected cohort study was conducted on Television Watching and Other Sedentary Behaviors in Relation to Risk of Obesity and Type 2 Diabetes Mellitus in Women During 6 years of follow-up, (7.5%) of women who had a BMI of less than 30 in 1992 became obese (BMI _30). Overall, we documented 1515 new cases of type 2 diabetes. Time spent watching TV was positively associated with risk of obesity and type 2 diabetes. In the multivariate analysis adjusting for age, smoking, exercise levels, dietary factors, each 2-h/d increment in TV watching was associated with a 23% increase in obesity and a 14% increase in risk of diabetes; each 2-h/d increment in sitting at work was associated with a 5 increase in obesity and a 7 increase in diabetes. In contrast, standing or walking around at home was associated with a 9% reduction in obesity and a 12% reduction in diabetes. Each 1 hour per day of brisk walking was associated with a 24%, reduction in obesity and a 34% reduction in diabetes. We estimated that in our cohort, 30% of new cases of obesity and 43% of new cases of diabetes. Diabetes could be prevented by adopting a relatively active lifestyle. Independent of exercise levels, sedentary behaviors, especially TV watching, were associated with significantly elevated risk of obesity and type 2 diabetes, whereas even light to moderate activity was associated with substantially lower risk of Diabetes. (Hu, Li, Colditz, Willett, & Manson, 2008)

A case –control study was conducted on Smoking habits and the risk of type 2 diabetes in Kaunas Lithuania and the total study population was 234 cases. The diabetes cases had significantly less education, more first-degree relatives with a positive family history of diabetes and higher body mass index (BMI) scores compared with the controls. Also, after adjusting for possible confounders, an

increased risk of type 2 diabetes was determined for current smokers vs. non-smokers. In addition, there was an association between the disease and duration of smoking for 40 years or more vs. non-smokers, and those who had been smokers for 10 or more pack-years had twice the risk of diabetes vs. non-smokers Active smoking was associated with an increased risk of the disease. The risk was greater for heavy smokers (more than 10 cigarettes per day).There were no significant associations found between the risk of type 2 diabetes and number of cigarettes smoked per day or stopping smoking. (Ostrausks & Radzeviciene, 2008)

A cross sectional study on Prevalence and risk factors of type II diabetes mellitus in Nilufer, Turkey among diabetic patients and total study population of 727persons(382 women and men) were selected by a random sampling and revealed that 47.45% were male, 52.54% were female ,28% had family history of diabetes mellitus, 36.58% had hypertension, 46.35% were smoker, about 20% used to consume alcohol, nearly 90% do not have habit of doing exercise, around 38% have BMI >25 .0 kg/m2 were risk factors for type 2 diabetes mellitus. (H, K, & Aksu, 2006)

A two-stage cluster sampling technique was conducted on a study of type2 diabetes in adult and its prevalence , risk factors and Five hundred and two (502) participants were participated and selected randomly in this survey. The subjects were aged 40 years above. The mean age of the sample population was 48.9 ±/9.2 years. The crude prevalence rates were 7.7% for males and 5.7% for females, respectively. Family history of diabetes was obtained (55.3%) had diabetic fathers, while (44.7%) of had diabetic mothers have diabetes. Body mass index (BMI) , family history of diabetes, physical inactivity, heavy consumption of alcohol, older age as well as high social status were associated with significantly higher prevalence of type 2 diabetes. (Nyenwe, Odia, Ihekwaba, OjNyenwule, Babatunde 2003)

The 20 year follow up of the Finnish twin cohort study was conducted on alcohol consumption and the incidence of type 2 diabetes and the study population consists of 22,778 same sex twins. High alcohol consumption (_20 g/day) was associated with an increased incidence of type 2 diabetes in lean women but not in overweight women or in men. Prolonged high alcohol consumption and binge drinking may increase the risk of type 2 diabetes. In women, binge drinking was associated with an increased incidence

of type 2 diabetes. Analyses of alcohol-discordant twin pairs supported a reduced risk in moderate consuming twins compared with their low consuming cotwins. (Carlsson, Hammer, Grill, Kaprio, 2003)

A cohort study was conducted on diet lifestyle and the risk of type 2 Diabetes Mellitus in women. During 16 years of follow-up, we documented 3300 new cases of type2diabetes. Overweight or obesity was the single most important predictor of diabetes. Lack of exercise, a poor diet, current smoking, and abstinence from alcohol use were all associated with a significantly increased risk of diabetes, even after adjustment for the body-mass index. As compared with the rest of the cohort, women in the low-risk group (3.4 percent of the women) had a relative risk of diabetes of 0.09 (95 percent confidence interval, 0.05 to 0.17). A total of 91 percent of the cases of diabetes in this cohort (95 percent confidence interval, 83 to 95 percent) could be attributed to habits and forms of behavior that did not conform to the low-risk pattern. A low-risk group was defined for at least half an hour per day; no current smoking; and the consumption of an average of at least half a drink of an alcoholic beverage per day. (Hu, et al., 2001)

2.2 Summary of the Reviewed literature

Diabetes is a chronic disease that occurs when the pancreas does not produce enough insulin, or alternatively, when the body cannot effectively use the insulin it produces. Diabetes is one of the most frequently occurring chronic diseases in the world affecting nearly 2-4% of the population. The literature reveals that there are various factors that contribute to diabetes mellitus like age family history, occupation, life style (smoking, diet, sedentary life style) obesity. Overweight or obesity was the single most important predictor of diabetes. Lack of exercise, a poor diet, current smoking, and abstinence from alcohol use were all associated with a significantly increased risk of diabetes.

CHAPTER III

METHODOLOGY

This chapter concern with the method used to assess the study on contributing factors of diabetes mellitus among clients.

3.1 Research Design

Descriptive cross sectional study design was used to find out contributing factors of diabetes mellitus among clients.

3.2 Study Setting / Population / Sampling of the study

A 50 of the respondents who have diagnosed diabetes mellitus and attending medical OPD of college of medical sciences chitwan were included in the study. All those diabetes clients who were diagnosed with Type2 diabetes mellitus by physician of college of medical sciences (CMS) and other hospital. The study was conducted in medical OPD in selected Hospitals of college of medical sciences (CMS) Chitwan. Data was collected each Sunday to Friday at 9am to 5pm among the diabetic clients.

3.3 Sampling Method

Non probability, Purposive sampling method was used. Total 50 respondents was used who have diagnosed diabetes mellitus.

3.4 Criteria for selection

Inclusion criteria

Only those clients who were attending medical OPD of College of Medical Sciences Bharatpur Chitwan.

3.5 Data Collection Method

Semi-Structured interview schedule was used to collect the information. The instrument was developed after reviewing the literature by researcher herself and consulting the research teacher. Research instrument is consisting of two parts:
Part I: socio-demographic information related questionnaire.

Part II: Questionnaire related to risk factors of diabetes mellitus.

Validity:

The tool for data collection was checked by the research expertise, concerned teacher and colleagues to ensure the validity of instrument. Necessary modification was done on the basis of their comments.

Reliability:

The reliability of the instrument was maintained by pre-testing of the instrument on 10% of total sample in similar setting other than the study population. Pre-testing was done in a Narayani sub –regional hospital who meets inclusive criteria for accuracy of tool. A questionnaire was translated into simple Nepali language and was back translated into English language. The questions were modified after the pretesting and, according to advice of the research committee.

3.6 Data Collection Procedure and Ethical Consideration

The study was carried out after formal ethical approval taken from research committee of nursing campus Birgunj. At first, request letter was submitted and administrative approval was taken from the authority of college of medical sciences (CMS) Bharatpur Chitwan. Data was collected to those type 2 diabetes clients who were waiting to the doctor for check up. Self introduction was provided and an objective was explained to the respondents. Privacy and confidentiality was maintained throughout the study. Data was collected by researcher herself by using interview schedule. If the respondents want to discontinue participating, they can leave any time. They were not forced for

participation. The participants had made assure that the study was not directly harm and benefit them.

3.7 Data Analysis Procedure

After data was collected the collected data was checked, reviewed and organized for accuracy and completeness. The data was coded, organized and entered in SPSS version16 programme. Finding was analyzed through Descriptive statistics, frequency, mean, percentage, and standard deviation to measure contributing factor among clients. After analysis of data Finding was presented through different academic tabulation.

CHAPTER IV

FINDING OF THE STUDY

This chapter deals with the analysis and interpretation of data obtained from the respondents. The response obtained from respondents was checked for accuracy and completeness and analyzed using SPSS version 16. Findings are displayed in frequency, percentage, mean and standard deviation in academic tables. Finding of the study are Presented into two parts:

Demographic Information

Contributing factors of Diabetes Mellitus.

TABLE 1

Socio-demographic Characteristics of the Respondents

n=50

Variables	Frequency	Percentage (%)
Age in (Years)		
40-49	12	24.0
50-59	16	32.0
60-69	10	20.0
70yrs and above	12	24.0
Mean age ± SD 57.44 ± 11.07 years	**Minimum 40 yrs**	**Maximum 83 yrs**
Sex		
Female	26	52.0
Male	24	48.0
Educational Status		
Illiterate	14	28.0
Literate	36	72.0
Education Level		
Read and write	14	28.0
Primary education	10	20.0
Secondary education	7	14.0
Higher secondary	3	6.0
Bachelor and above	2	4.0
Occupation		
Household	23	46.0
Service	12	24.0
Agriculture	9	18.0
Business	6	12.0
Residence		
Urban	33	66.0
Rural	17	34.0

Table 1, represents that distribution of respondents on the basis of their Socio-demographic Characteristics. In regard with age majority (32%) of the respondents were in the age group of (50-59) years and only (20%) of respondents were in the age group of (60-69) years. The mean age was 57.44 years and standard deviation was 11.07years. Regarding Sex, more than half (52%) were in Female.

Regarding Education Status majority **(**72%) were literate among them (28%) of the respondents can read and write only.

In regard of occupation majority of the Respondents (46%) was engaged in Household activities. Regarding Residence Majority (66%) were inhabitants in urban area.

TABLE 2

Duration of Diabetes and Family History of Diabetes before Diagnosis of Diabetes

Duration and Family History	Frequency	Percentage (%)
Duration of Diabetes (n=50)		
<1yrs	8	16.0
Since 1-5yrs	27	54.0
Since 6-10yrs	8	16.0
Since 11-15yrs	3	6.0
More than 15 years	4	8.0
Family History of Diabetes (n=50)		
Yes	23	46.0
No	14	28.0
Don't know	13	26.0
If yes, specify relation (n=23)		
Mother	13	26.0
Father	10	20.0

The table 2 represents that more than half (54%) of the respondents were suffering from diabetes since duration of (1-5) years and only (3%) were suffering from diabetes duration of since (11-15) years. Regarding Family history of diabetes majority (46%) of the respondents had history of diabetes in family member and among them who had history of diabetes in family (26%) of the respondent's mothers was diabetic.

TABLE 3

Hypoglycemic Agent or Insulin after Diagnosis of Diabetes Mellitus

Hypoglycemic Agent or Insulin	Frequency	Percentage (%)
Uses of Hypoglycemic agent or insulin (50)		
Yes	34	68.0
No	16	32.0
Taking hypoglycemic agent or insulin After Diagnosis (n=34)		
after <1yrs	11	22.0
after 1-5 yrs	22	44.0
after 6-10 yrs	1	2.0

The table 3 depicts that distribution of the respondents according to uses of Hypoglycemic Agent or insulin after Diagnosis of Diabetes Mellitus. Majority (68%) of the respondents had started taking of hypoglycemic agent or insulin. Regarding Taking of Hypoglycemic Agent or insulin after Diagnosis of Diabetes Mellitus. Less than half (44%) of the respondents were started taking hypoglycemic agent or insulin after (1-5) years of diagnosis of diabetes mellitus and only (2%) respondents were started taking hypoglycemic agent or insulin after (6-10) years of diagnosis of diabetes mellitus.

TABLE 4

Habit of Doing Exercise and Duration of Exercise before Diagnosis of Diabetes Mellitus

Exercise	Frequency	Percentage (%)
Exercise habit (n= 50)		
Yes	21	42.0
No	29	58.0
Duration of exercise (n=21)		
<30 min	3	6.0
30min-1hrs	17	34.0
>1hrs	1	2.0

The table 4 depicts that distribution of the respondents according to Habit of Doing Exercise before Diagnosis of Diabetes. More than half (58%) of the respondents had no exercises habit before diagnosis of diabetes. Regarding duration of doing exercise before diabetes mellitus. Majority (34%) of the respondents had done exercise 30 min to 1hrs before diabetes mellitus and only (2%) of the respondents were did exercise more than 1hours.

TABLE 5

Physical (work) Activity, Time Duration of Work, Activities during Leisure Time

n=50

Physical (work) activity, Time duration of work & Activities during Leisure Time	Frequency	Percentage (%)
Physical (work)activity before diabetes		
Inactive	27	54
Active	19	38
Hard working	4	8
Time duration of work		
<8hrs	35	70
8-10 hrs	11	22
>10hrs	4	8
Activities during leisure time before Diabetes**		
Watching TV	36	48
Gossiping	21	28
Spiritual activity	7	9.3
Listening radio	5	6.7
Reading newspaper	5	6.7
Sleeping	1	1.3

**Multiple Responses

The table 5 represents that distribution of the respondents according to physical (work) activity. More than half (54%) of the respondents were inactive and only (8%) of the respondents were did hard working. Regarding time duration of work, majority (70%) of the respondents does work less than 8 hours and only (8%) of the respondents do work more than 10 hours in 24 hours.

Regarding activities during leisure time, majority (48%) of the respondents were watching TV during leisure time and only (1.3%) of the respondents were did other (sleeping) activities during leisure time.

TABLE 6

Self Body Weight Information and Body Mass Index (BMI) before Diabetes Mellitus

n=50

Body weight & Body Mass Index	Frequency	Percentage (%)
Self Body weight Information before diabetes		
Yes	40	80
No	10	20
Body Mass Index(BMI) before diabetes (n=40)		
Normal weight(18.5-24.9)	9	18
Over weight(25-29.9)	16	32
Obesity(30 or more than 30)	15	30

The table 6 represents that the distribution of respondents according to self body weight information and BMI before diagnosis of diabetes mellitus, regarding body weight most of the (80%) respondents know body weight before diagnosis of diabetes mellitus.

Regarding Body Mass Index (BMI) before Diagnosis of Diabetes Mellitus, Majority (32%) of the respondents had overweight (BMI 25-29.9) before diagnosis of diabetes mellitus and only (18%) of the respondents had normal weight (BMI18.5-24.9).

TABLE 7

Risk Behavior of Respondents (Alcoholism &Smoking)

		n=50
Risk Behavior	**Frequency**	**Percentage (%)**
Smoking Habit Before Diabetes (n=50)		
Yes	28	56.0
No	22	44.0
Number of Cigarette used per Day Before Diabetes (n=28)		
<5 sticks per day	5	10.0
5-10 sticks per day	17	34.0
>10 sticks per day	6	12.0
Recent Smoking Habit (n=50)		
Yes	7	14.0
No	43	86.0
Consumption of Alcohol Before Diabetes (n=50)		
Yes	21	42.0
No	29	58.0
Frequency of Alcohol Consumption before diabetes (n=21)		
Daily	11	22.0
2-7 days	1	2.0
Occasionally	9	18.0
Recent alcohol Consumption Habit (n=50)		
Yes	2	4.0
No	48	96.0

The table 7 represents that the distribution of respondents according to risk behavior before diagnosis of diabetes mellitus, regarding smoking habit more than half (56%) of the respondents had smoking habit before diagnosis of diabetes mellitus. Regarding Times of smoking per day before diagnosis of diabetes mellitus, Majority (34%) of

the respondents used to smoke 5-10 sticks per day. Regarding recent smoking habit, most of the (86%) respondents don't have habit of smoking recently. Regarding consumption of alcohol before diagnosis of diabetes mellitus, more than half (58%) of the respondents had not consumed alcohol before diagnosis of Diabetes Mellitus. Regarding Frequency of alcohol consumption, majority (22%) of the respondents consumed alcohol daily. Regarding recent alcohol consumption habit, most (96%) of the respondents doesn't consume alcohol recently.

TABLE 8

Distribution of Respondents according to Food Habit

n=50

Food Habit	**Frequency**	**Percentage (%)**
Dietary Pattern		
Non-vegetarian	41	82
Vegetarian	9	18
High Carbohydrate and Fatty Food Intake Habit Before Diabetes		
Yes	43	86
No	7	14
Type of Food Intake Before Diabetes **		
High Fatty diet	27	40.9
High red meat intake	18	27.3
High carbohydrate diet	14	21.2
Normal diet	7	10.6

** Multiple Responses

The table 8 depicts that the distribution of respondents according to their food habit. Most of the (82%) respondents had non-vegetarian. Regarding high carbohydrate and fatty food intake habit before Diabetes mellitus, Majority (86%) of the respondents had high carbohydrate and fatty food intake habit. Regarding type of food intake before diagnosis of diabetes mellitus majority (40.9%) of the respondents had intake high fatty diet and only (10.6%) of the respondents had intake normal diet

CHAPTER – V

DISCUSSIONS, CONCLUSION AND RECOMMENDATION

5.1 Discussion

This study was conducted to assess the contributing factors of Diabetes Mellitus among the clients attending in OPD of College of Medical Sciences; Chitwan. The data were collected with Semi-Structured questionnaire with interview schedule method. Data were analyzed with SPSS version 16 and interpreted by frequency, mean, Standard Deviation and percentage.

This study shows that diabetes increase with increasing age, majority (32%) of the respondent were from 50-59 age groups. The mean age of the respondents is 57.44± 11.07 yrs. The finding was contradictory with the conducted by (Nyenwe, Odia, Ihekwaba, OjNyenwule, Babatunde 2003) revealed that the mean age of sample population was 48.9 ±/9.2 years.

The study revealed that more than half (52%) were female who are affected from diabetes mellitus. The finding is consistent with the study conducted by Belmokhtar, Belmokhtar, Dali-Sahi, & Mohamed (2011) which revealed that majority 69.2% of were female, 37.4% were male were affected. Another Contradictory finding was found in another study by Nyenwe et. al. (2003) where 7.7% for males and 5.7% for females.

The study revealed that majority (72%) were literate respondents who were affected from diabetes mellitus. The finding is consistent with the study conducted by Megerssa, Gebre, Birru, Goshu, & Tesfaye,(2013) which revealed that 70% participants had literate who had affected from diabetes mellitus.The finding conclude that the higher percentage of respondents who were affected from DM were literate.

According to occupation, (46%) were engaged in household activities and 24%were service holder affected from diabetes mellitus. The finding of the study conducted by Valliyot, Sreedharan, Muttappallymyali, & Valliyo,(2013) which revealed that majority 25% of cases were housewife and 10% were service holder.

The study depicted that (66%) were inhabitants in urban area. The finding of the study conducted by Hammami, Mehri, Hajem, Koubaa, Souid, & Hammami, (2012)which revealed that urban residents had a higher prevalence (29.2%) than did their rural (15.9%) residents. The finding was found out in an another study conducted by Sathian, Yadhav, & Kalai,(2012) which shows that prevalence of type 2 diabetes mellitus in Asian Indian had 14% in urban India and 2.7% in rural India. Based on the study finding of the study and comparison with the reviewed literature concludes that who were inhabitant in urban area mostly affected by diabetes mellitus.

The study depicted that majority (46%) of the respondents had family history of diabetes among them. The finding was Contradictory with the study conducted by H, K, & Aksu,(2006) showed that 28% had family history of diabetes mellitus. The finding was consistent with another study conducted by (Shihabudheen K. M., NV, C, P, Abid, & Seena, 2010) which revealed that participants 69.4% of the respondents had family history of diabetes. The study revealed that among the family history of diabetes majority (26%) of the respondent's mothers was diabetic. The finding was contradictory with study conducted by Nyenwe, et.al. (2003), (55.3%) had diabetic fathers, while (44.7%) of had diabetic mothers have diabetes. Based on the finding of the study and comparison with the reviewed literature concludes that positive family history of diabetes contribute to diabetes mellitus.

The study revealed that majority (58%) of the respondents had not habit of exercise before diagnosis of diabetes. The finding of the study conducted by H, K, & Aksu, (2006) which revealed that majority nearly 90% had no habit of doing exercise. Based on the finding of the study and comparison with the reviewed literature concludes that habit of no exercise contribute to diabetes mellitus.

The study revealed that More than half (54%) of the respondents were inactive, (38%) of the respondent were active and only (8%) of the respondents were did hard working The finding was contradictory with study conducted by Valliyot, Sreedharan, Muttappallymyali, & Valliyo, (2013) which showed that 42% of cases were involved in heavy work, 39% were involved in moderate physical activity, respectively, whereas 19% of cases were involved in sedentary activity. The another finding was consistent with the study conducted by Puepet & Ohwovoriole, (2008) which revealed that about 50% of the respondents were inactive and Another finding of the study conducted by, Belmokhtar,et.al. (2011) majority around 80% were physically inactive Based on the finding of the study and comparison with the reviewed literature conclude that Inactivity appear to be dominant risk factors for development of type 2 DM.

The study revealed that majority (48%) of the respondents was watching TV during leisure time. The finding of the study conducted by Hu, Li, Colditz, Willett, & Manson,(2008) Which shows that Increment in TV watching was associated with a majority 23% increase in obesity and a majority 14% increase in risk of diabetes. Time spent watching TV was positively associated with risk of obesity and type 2 diabetes.

The study revealed that Majority (32%) of the respondents had overweight before diagnosis of diabetes mellitus, (30%) had obesity and only (18%) of the respondents had normal weight. The finding of the study conducted by, Megerssa,et.al. (2013) which shows that distribution of BMI as majority overweight were 58.3%, obese were 29.1% normal were 4.3%, The another finding was contradictory with the study conducted by, Belmokhtar,et.al.(2011) which shows that 37.5% were obese, 35% were overweight and nearly 27% had normal BMI, and. The study concludes that excess weight appear to be dominant risk factors for development of type 2 DM.

The study revealed that more than half (56%) of the respondents had smoking habit. The finding was consistent with the study conducted by H, K, & Aksu,(2006) which shows that majority (46.35%) was smoker.

The study revealed that Majority (34%) of the respondents used to smoke 5-10 sticks per day. The study conducted by Ostrausks & Radzeviciene,(2008) which shows that

Active smoking was associated with an increased risk of the disease. The risk was greater for heavy smokers (more than 10 cigarettes per day).

The study revealed that (42%) of the respondents had consumed alcohol. The finding was contradictory with the study conducted by H, K, & Aksu,(2006) which was 20% used to consume alcohol. The study revealed that Regarding Frequency of alcohol consumption, majority (22%) of the respondents had consumed alcohol daily. The finding of the study by Megerssa,et.al. (2013) which shows that majority (48.1%) consumed alcohol daily that (40%) were frequent drinkers while 30% were social drinkers. The study revealed that most (96%) of the respondents doesn't consume alcohol recently. The study was contradictory with the finding conducted by Puepet & Ohwovoriole, (2008) which shows 52.7% were currently taking alcohol.

The study revealed that most of the (82%) respondents had non-vegetarian. The finding was consistent with the study conducted by Valliyot,et.al.(2013) which shows that most of the 93% were having Non-vegetarians diet and 7% were vegetarians. The study shows that regarding type of food intake majority (40.9%) of the respondents had intake high fatty diet. Based on the finding of the study and comparison with the reviewed literature concludes most of the non-vegetarian contributes to diabetes mellitus.

5.2 Conclusion

This descriptive cross-sectional study was conducted to assess the contributing factors of diabetes mellitus among the clients attending in college of medical sciences chitwan.The data were collected with semi- structured questionnaire with interview schedule method. Conclusion has been done on the findings and discussion of the study.

Diabetes mellitus is a major public health problem in the today 'context. The study was shows that risk of diabetes mellitus increased with increasing age (50-59) years and prevalence of diabetes was higher in urban area. Positive family history also contributes to diabetes mellitus. More than half of the respondents were physically inactive which contributes to diabetes mellitus. The study reveals that who engaged in household activities to be contributing to diabetes mellitus. It shows that majority were watching TV during leisure time which also contributes to diabetes. Much time

of watching TV contributes to obesity and increase risk of diabetes. More than half of the respondents had Smoking habit, Most of the respondents had non-vegetarian, most of had high carbohydrate and fatty food intake habit, and majority had intake high fatty diet are significant risk factors of diabetes mellitus. Therefore it can be concluded that diabetes mellitus was associated with age, family history, physical inactivity, smoking and diet habit. Awareness regarding disease was still low. So a comprehensive approach is needed to prevent and control the disease and risk factors.

5.3 Limitation of the study:

The study was conducted in college of medical sciences so the findings cannot be generalized to other settings. The study was conducted in a small scale i.e. sample size only 50. The study was conducted in limited time. Since diabetes mellitus is a multi-factorial, there might be many confounding factors beside the study variables, which can't be included in this study due to limited resource.

5.4 Implications:

The finding of the study also beneficial to the health institution and health care personnel to make plan and implement further awareness program to prevent and control the disease and risk factors.

This study can be providing baseline information for the preparation of preventive awareness programme.

The research finding of the study shows that majority (50-59) year's age group suffered from diabetes so that hospital can conduct awareness programme mainly focuses on this age group to reduce the problem.

The finding helps the policy maker to plan and develop the preventive programme package.

5.5 Recommendation for the study

The study can be done in large scale including other risk factor and other confounding factors beside the studied variables.

The finding of the study recommends that health institutions, and other organization can aware the importance of exercise& avoidance of smoking for prevention of DM through media, newspaper, poster& pamphlet.

A health education programme to the public can be carried out to adopt healthy lifestyle.

It is recommended that hospitals can plan preventive programme package, screening and conduct diabetes clinic in routine basis from primary level.

5.6 Plan for Dissemination

Campus Chief, Research committee of nursing campus birgunj.

Library of nursing campus, Birgunj.

Library of college of Medical Sciences, Chitwan.

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APPENDIX A

TRIBHUVAN UNIVERSITY

INSTITUTE OF MEDICINE

NURSING CAMPUS

BIRGUNJ, PARSA

2071

Informed Consent form:

Study title**:** Contributing factor of diabetes mellitus among clients attending in Private hospital of college of medical sciences, Chitwan.

Investigator: sangita poudel

Namaskar!I am sangita poudel .I am Bachelor Nursing student studying the contributing factor of diabetes mellitus among clients . Although the study will not benefit you directly, it will provide information that will be used for the purpose of the study. The study and its procedure have been approved by the authorized person of Nursing Campus of Birgunj, T.U. I.O.M.

The study procedure involve no foreseeable any risk/harm to you. The responding to a questionnaire about the contributing factor of diabetes mellitus among clients. Completing demographic datasheet, participation in this study will take approximately 30 minutes and you are free to ask questions about the study. Your participation in this study is voluntary; you are under no obligation to participate you have right to withdraw at any time. Your identity will not be revealed, confidentiality will be maintained while study is being conducted or when the study is reported or published. This study will be used only for the research (this study) not for any other purposes.

Signature:

Date:

APPENDIX B

TRIBHUVAN UNIVERSITY

INSTITUTE OF MEDICINE

NURSING CAMPUS

BIRGUNJ, PARSA

2071

SEMI- STRUCTURED QUESTIONAIRE FOR DATA COLLECTION

Topic: Contributing Factors of Diabetes Mellitus among Clients Attending in Private Hospital of College of Medical Sciences, Chitwan

The purpose of this study is to identify the contributing factor of diabetes mellitus among clients attending in medical OPD in college of medical sciences Bharatpur Chit wan.

Researcher will appreciate your co-operation in answering the questionnaire and would like to assure that information will be kept confidential and privacy will be used only for the study purpose.

This is semi-structured questionnaire and consists of two parts: part I is related to socio-demographic information and part II is related to contributing factors of Diabetes Mellitus among clients.

Data collection date:

Direction:

Please provide appropriate response of the following questions.

PART: I

Socio-demographic Characteristics

1) Age

……

2) Sex

a) Male ☐

b) Female ☐

3) Education

a) Literate ☐

b) Illiterate ☐

if literate,……..

4) What is your educational level?

a) Read and write ☐

b) Primary education ☐

c) Secondary education ☐

d) Higher secondary ☐

e) Bachelor and above ☐

5) Occupation

a) Service ☐

b) Business ☐

c) Household ☐

d)Student ☐

e) Agriculture ☐

f) Other…… ☐

6) Residence

a) Urban ☐

b) Rural ☐

PART II:

Questionnaire related to contributing factors of Diabetes

Non- Modifiable Risk Factors

Personal Medical History and Family History

7) From how long are you suffering from diabetes mellitus?

……

8) Was there any specific history of diabetes mellitus in your family either maternal or paternal?

a)Yes ☐

b) No ☐

c) Don't know ☐

If yes, specify……

9) Did you take hypoglycemic or insulin agent after diagnosis of diabetes mellitus?

a)Yes ☐

b) No ☐

10) When did you start taking hypoglycemic agent /insulin after diagnosed of diabetes mellitus?

……

Modifiable Risk Factors

Physical Activity and obesity

11)Did you have habit of doing exercise daily before you were diagnosed with diabetes mellitus?

a)Yes ☐

b) No ☐

If 'yes' how long used to do the exercise?

……

12) What kind of work you used to do in working hour?

a) Active ☐

b) Inactive ☐

c) Hard working ☐

13) How long you have to work per day?

……

14) What kind of activitivities did you use to do leisure time?

a) Watching TV ☐

b)Listening radio ☐

c) Reading news paper ☐

d) Spiritual activity ☐

e) Gossiping ☐

f) If others (please specify)…… ☐

15) Do know about your body weight before diagnosed of diabetes mellitus?

a) Yes ☐

b) No ☐

If, yes what was your weight?

…….

16) Height …….

17) BMI …….

Life Style

18)Did you use to smoke cigarette before you were diagnosed diabetes mellitus?

a) Yes ☐

b) No ☐

If yes, how many sticks of cigarette did you smoke per day?

……

19) Do you currently smoke?

a)Yes ☐

b) No ☐

20) Did you use to consume alcohol before you were diagnosed diabetes mellitus?

a) Yes ☐

b) No ☐

If yes, how frequent you used to consume alcohol?

……

21) Do you currently consume alcohol?

a) Yes ☐

b) No ☐

Diet History

22) Were you vegetarian or non-vegetarian before you were diagnosed diabetes mellitus?

a) vegetarian ☐

b) Non-vegetarian ☐

23) Did you used to eat high carbohydrate containing diet and fatty diet before you were diagnosed Diabetes Mellitus?

a) Yes ☐

b) No ☐

24) What type of food did you eat before diagnosis of diabetes mellitus?

…….

APPENDIX-C
त्रिभुवन विश्वविद्यालय
चिकित्सा शास्त्र अध्ययन संस्थान
नर्सिङ क्याम्पस , विरगंज
२०७१

अनुसन्धानको शिर्षक :- मधुमेह भएका बिरामीहरुमा मधुमेह लाग्नाको कारणहरु सम्बनधि प्रश्नावली

मन्जुरी नामा

नमस्कार, म संगिता पौडेल बिरगंज नर्सिङ क्याम्पस त्रिभुवन विश्वविद्यालय, बि.एन. दोश्रो वर्षमा अध्ययनरत छात्रा हुँ र म "मधुमेह भएका बिरमीहरुमा मधुमेह लाग्नाको कारणहरु" शिर्षकमा अनुसन्धान गरिरहेको छु । यस अनुसन्धान र तथ्याङ्क संकलन सम्पुर्ण प्रक्रिया नर्सिङ क्याम्पस विरगंज, रिसर्च कमिटिमा पारित गरिएको छ । अनुसन्धानका उद्देश्य अनुरुप अनुसन्धानका लागि चितवन जिल्ला कलेज अफ मेडिकल साईसेन्स मेडिकल ओ.पि.डी भरतपुर छानिएको र सम्बन्धित अस्पतालबाट पनि अनुमति लिएको यहाँलाई अवगत गराउँदछु । यस अनुसन्धानबाट यहाँलाई कुनै प्रकारको प्रत्यक्ष फाईदा वा हानी दुवै हुनेछैन । तापनि यस विषयको अध्ययनमा मद्दत भने अवश्य पुग्याउने छ । यहाँलाई अनुसन्धानसम्बन्धी कुनै जिज्ञासा भए सोध्न सक्नु हुनेछ र आधा घण्टाको लागि स्वेच्छाले सहभागिता जनाउनुहुनेछ र यहाँले बिचमै पनि मननलागे छाडनसक्नु हुनेछ । यहाँको व्यक्तिगत परिचय र सहभागिताको गोप्यनियता राखिने छ । यो केवल अध्ययनका लागि अनुसन्धानात्मक खोज मात्रै रहेको र यसको निस्कर्ष या रिपोर्ट अध्ययन बाहेक अन्य कार्यको लागि प्रयोग गरिने छैन ।

नाम :- मिति :-

सहि :-

APPENDIX-D

त्रिभुवन विश्वविद्यालय
चिकित्सा शास्त्र अध्ययन संस्थान
नर्सिङ क्याम्पस , विरगंज
२०७१

तथ्यांक संङकलनका लागि अर्ध-संरचना प्रश्नावली

अनुसन्धानको शिर्षक :- मधुमेह भएका बिरामीहरुमा मधुमेह लाग्नाको कारणहरु सम्बनधि प्रश्नावली

यस अध्ययनको प्रमुख उद्देश्य भनेको मधुमेह भएका बिरामीहरुमा मधुमेह लाग्नाको कारण पत्ता लगाउने हो । यहाँको अमुल्य सहभागिता र सहयोग सहर्षनिय हुनेछ र तथ्यांक संकलनमा यहाँको परिचय, सहभागिताको गोप्यनियता कायमै राखिनेछ । अनुसन्धानको निस्कर्ष अध्ययनका लागि मात्र प्रयोग गरिने छ अन्य कार्यमा प्रयोग गरिने छैन ।

यस सेमी प्रश्नावलीमा २ भाग रहेको छ खण्ड- १ र खण्ड- २ रहेको छ । खण्ड- १ मा जनसांख्कीय विवरण र खण्ड-२ मा मधुमेह भएका बिरामीहरुमा मधुमेह लाग्नाका कारणहरु अन्तर्गतका प्रश्नावलीहरु रहेका छन् ।

कोड नं. **तथ्यांङक संकलन मिति**

निर्देशन :- उत्तरदाताहरुले प्रत्येक प्रश्नको उपयुक्त उत्तर दिनु होला ।

खण्ड-१ जनसांख्कीय विवरण

१) तपाईको उमेर (पुरा भएको वर्ष) .....

२) लिङग

क) महिला ☐ ख) पुरुष ☐

३. शिक्षा

क) साक्षर ☐ ख) निरक्षर ☐

यदि साक्षर हुनुहुन्छ भने,

४. तपाईको शैक्षिक योग्यता कति छ ?

क) लेख्न पढ्न जान्ने ☐ ख) प्राथमिक तह ☐

ग) माध्यमिक तह ☐ घ) उच्च माध्यमिक तह ☐

ङ) स्नातक वा बढि ☐

५. पेशा

क) नोकरी ☐ ख) व्यापार ☐

ग) गृहणी ☐ घ) किसानी ☐

ङ) अन्य..... (कृपया खुलाउनुहोस्)

६. बसोबास

क) ग्रामीण क्षेत्र ☐ ख) शहरी क्षेत्र ☐

खण्ड -२

मधुमेह भएका बिरामीहरुमा मधुमेह लाग्नाको कारणहरु सम्बन्धी प्रश्नावली

अपरिवर्तनशिल कारणहरु

व्यक्तिगत तथा पारिवारीक विवरण

७. तपाई कति लामो समयदेखि मधुमेह रोगबाट पिडित हुनुहुन्छ ?

.....

८. तपाईको परिवारमा कुनै सदस्यलाई (आमा वा बुवा पट्टीको) मधुमेह देखिएको थियो ?

क) थियो ☐ ख) थिएन ☐

ग) थाहा छैन ☐

थियो भने कसलाई भएको थियो ?

.....

९. तपाईलाई मधुमेह भएपछि मधुमेहको लागि इन्सुलिन वा खाने औषधि लिन थाल्नु भएको छ ?

क) छ ☐ ख) छैन ☐

१०. तपाईले मधुमेह भएको कति समयपछि इन्सुलिन वा खाने औषधि लिन थाल्नु भयो ?

.....

परिवर्तनशील कारणहरु

शारिरीक क्रियाकलाप तथा मोटोपना

११. तपाईले मधुमेह लाग्नु भन्दा पहिले दैनिक शारिरीक व्यायम गर्ने बानि थियो ?

थियो भने ,

दिनको कति समय व्यायम गर्नु हुन्थ्यो ?

.....

१२. मधुमेह लाग्नु भन्दा पहिले तपाईले कस्तो किसिमको काम गर्नु हुन्थ्यो ?

क) सक्रिय ☐ ख) निष्क्रिय ☐

ग) कडा परिश्रम ☐

१३. तपाईले एक दिनमा कति समय काम गर्नुहुन्छ ?

.....

१४. तपाईले फुर्सदको समयमा कस्तो कार्यहरु गर्नु हुन्थ्यो ?

क) टि.भी हेर्ने ☐ ख) रेडियो सुन्ने ☐

ग) पत्र-पत्रिका पर्ने ☐ घ) गफ गर्ने ☐

ङ) धार्मिक क्रियाकलाप गर्ने ☐ च) अन्य ☐

१५. मधुमेह लाग्नु भन्दा पहिले तपाईको तौल थाहा छ ?

क) थाहा छ ☐ ख) थाहा छैन ☐

यदि थाहा छ भने ☐

तपाईको तौल कति थियो ?

१६. उचाई.....

१७. BMI .....

जिवन शैली सम्बन्धि

१८. तपाईले मधुमेह लाग्नु पहिले चुरोट खानु हुन्थ्यो ?

क) खान्थे ☐ ख) खान्थिन ☐

यदि खानु हुन्थ्यो भने दिनको कति ओटा खानु हुन्थ्यो ?

.....

१९. तपाईले तत्काल चुरोट खानु हुन्छ ?

क) खान्छु ☐ ख) खान्न ☐

२०. तपाईले मधुमेह लाग्नु भन्दा पहिले रक्सी खानु हुन्थ्यो ?

क) खान्थे ☐ ख) खान्थिन ☐

यदि खानु हुन्थ्यो भने कति समयमा खानु हुन्थ्यो ?

.....

२१. तपाईले तत्काल रक्सी खानु हुन्छ ?

क) खान्छु ☐ ख) खान्न ☐

खाना सम्बन्धि

२२. मधुमेह लाग्नु भन्दा पहिले तपाई शाकाहारी हुनुहुन्थ्यो कि मांसाहारी हुनुहुन्थ्यो ?

क) शाकाहारी ☐ ख) मांसाहारी ☐

२३. तपाईलाई मधुमेह लाग्नु भन्दा पहिले बढी कार्बोहाइड्रेट र चिल्लो पदार्थ युक्त खानेकुरा खानु हुन्थ्यो ?

क) खान्थे ☐ ख) खान्थिन ☐

२४. मधुमेह हुनु भन्दा पहिले कस्तो - कस्तो खानेकुरा खानु हुन्थ्यो ?

.....