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A Study to Assess the Knowledge Regarding Risk Factors and Prevention of Diabetes Mellitus among the Adults in Selected Urban Community, Guwahati

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CHAPTER 1

INTRODUCTION:

"Only those who will risk going too far can possibly find out how far one can go."

-T. S Eliot

TITLE:

A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati.

INTRODUCTION:

Diabetes was one of the first diseases described, with an Egyptian manuscript from c. 1500 BCE mentioning "too great emptying of the urine." The Ebers papyrus includes a recommendation for a drink to take in such cases.[174] The first described cases are believed to have been type 1 diabetes. Indian physicians around the same time identified the disease and classified it as *madhumeha* or "honey urine", noting the urine would attract ants.

The term "Diabetes" or "to pass through" was first used in 230 BCE by the Greek Apollonius of Memphis. The disease was considered rare during the time of the Roman empire, with Galen commenting he had only seen two cases during his career. This is possibly due to the diet and lifestyle of the ancients, or because the clinical symptoms were observed during the advanced stage of the disease. Galen named the disease "diarrhea of the urine" (diarrhea urinosa).

The earliest surviving work with a detailed reference to Diabetes is that of Aretaeus of Cappadocia (2nd or early 3rd century CE). He described the symptoms and the course of the disease, which he attributed to the moisture and coldness, reflecting the beliefs of the "Pneumatic School". He hypothesized a correlation between Diabetes and other diseases, and he discussed differential diagnosis from the snakebite, which also provokes excessive thirst. His work remained unknown in the West until 1552, when the first Latin edition was published in Venice.

Two types of Diabetes were identified as separate conditions for the first time by the Indian physicians Sushruta and Charaka in 400–500 CE with one type being associated with youth and another type with being overweight. Effective treatment was not developed until the early part of the 20th century when Canadians Frederick Banting and Charles Best isolated and purified insulin in 1921 and 1922. This was followed by the development of the long-acting insulin NPH in the 1940s.

Diabetes Mellitus, often known simply as Diabetes, is a group of common endocrine diseases characterized by sustained high blood sugar levels. Diabetes is due to either the pancreas not producing enough insulin, or the cells of the body becoming unresponsive to the hormone's effects.

Diabetes Mellitus is a metabolic disease, involving inappropriately elevated blood glucose levels. Diabetes Mellitus is classified into four types and they are: Type 1 Diabetes Mellitus, Type 2 Diabetes Mellitus, Secondary Diabetes Mellitus and Gestational Diabetes Mellitus. The main subtypes of Diabetes Mellitus are Type 1 Diabetes Mellitus and Type 2 Diabetes Mellitus, which classically result from defective insulin secretion and/or action (Type 2 Diabetes Mellitus). Type 1 Diabetes Mellitus presents in children or adolescents, while Type 2 Diabetes Mellitus is thought to affect middle-aged and older adults who have prolonged hyperglycemia due to poor lifestyle and dietary choices. The pathogenesis for Type 1 Diabetes Mellitus and Type 2 Diabetes Mellitus is drastically different, and therefore each type has various etiologies, presentations, and treatments.

Insulin resistance is attributable to excess fatty acids and proinflammatory cytokines, which leads to impaired glucose transport and increases fat breakdown. Since there is an inadequate response or production of insulin, the body responds by inappropriately increasing glucagon, thus further contributing to hyperglycemia.

BACKGROUND OF THE STUDY:

Diabetes Mellitus is a chronic metabolic disorder characterized by a cardinal biochemical feature, caused by deficiency of Insulin, its action or both manifested by abnormal metabolism of carbohydrates, protein, and fat. Diabetes Mellitus is classified into four types and they are Type 1 Diabetes Mellitus, Type-2 Diabetes Mellitus, Secondary Diabetes Mellitus and Gestational Diabetes Mellitus.

The pancreas is an extended, accessory digestive gland that is found retroperitoneally, crossing the bodies of the L1 and L2 vertebrae on the posterior abdominal wall. The pancreas lies transversely in the upper abdomen between the duodenum on the right and the spleen on the left. It is divided into the head, neck, body, and tail. The head lies on the inferior vena cava and the renal vein and is surrounded by the C loop of the duodenum. The pancreas is divided into 4 parts: head, neck, body and tail.

The pancreas has two essential and very important functions in the body: endocrine (production of hormones that regulate blood sugar levels and glandular secretion) and exocrine (the function of the

digestive gland). Endocrine activity is performed by the Langerhans islets and involves the production of hormones such as insulin, proinsulin, amylin, C-peptide, somatostatin, pancreatic polypeptide (PP), and glucagon. Insulin helps to lower blood sugar, and glucagon causes blood sugar to rise.

Causes of Diabetes include: Insulin resistance, autoimmune diseases, hormonal imbalances, pancreatic damage, genetic mutations etc.

The following factors may increase chance of getting disease and they are: family history of Diabetes or inherited history, being overweight, physical stress, use of certain medications (such as steroids, hypertensive drugs, antipsychotic drugs), injury to pancreas (such as infection, tumor, surgery or accident), autoimmune disease, hypertension, abnormal blood cholesterol or triglycerides levels, age (risk increases with age), alcohol (risk increases with years of heavy alcohol use), smoking.

Classic symptoms include thirst, polyuria, weight loss, and blurred vision. If left untreated, the disease can lead to various health complications, including disorders of the cardiovascular system, eye, kidney, and nerves.

Many Diabetes risk factors are manageable. Most Diabetes preventive strategies involve making simple adjustments to your diet and fitness routine. Some of the steps to prevent Diabetes are such as: Maintaining a healthy diet such as Mediterranean diet, losing weight and keeping it off, managing stress, doing regular exercise, quitting smoking and alcohol consumption and consulting health care providers.

NEED OF THE STUDY:

Diabetes Mellitus is a group of metabolic diseases characterized by hyperglycemia and eventual glycosuria caused by defects in insulin secretion and/or insulin action. Diabetes Mellitus causes not only psychological and physical distress to patients, but also some serious and even life-threatening complications.

The global Diabetes prevalence in 2019 is estimated to be 9.3% (463 million people), rising to 10.2% (578 million) by 2030 and 10.9% (700 million) by 2045. The prevalence is higher in urban (10.8%) than rural (7.2%) areas, and in high-income (10.4%) than low-income countries (4.0%).

Globally, 1 in 11 adults has Diabetes Mellitus (90% having Type 2 Diabetes Mellitus). The onset of Type 1 Diabetes Mellitus gradually increases from birth and peaks at ages 4 to 6 years and then again from 10 to 14 years. Approximately 45% of children present before age ten years. The prevalence in people under age 20 is about 2.3 per 1000. While most autoimmune diseases are more common in females, there are no apparent gender differences in the incidence of childhood Type 1 Diabetes Mellitus. In some populations, such as in older males of European origin (over 13 years), they may be more likely to develop Type 1 Diabetes Mellitus compared to females (3:2 male to female ratio). The incidence of Type 1 Diabetes Mellitus has been increasing worldwide. In Europe, Australia, and the Middle East, rates are rising by 2% to 5% annually. In the United States, Type 1 Diabetes Mellitus rates rise in most age and ethnic groups by about 2% yearly, and rates are higher in Hispanic youth. However, some metrics, such as the United States Military Health System data repository, found plateauing over 2007 to 2012 with a prevalence of 1.5 per 1000 and incidence of 20.7 to 21.3 per 1000.

While ethnicity alone plays a vital role in Type 2 Diabetes Mellitus, environmental factors also greatly confer risk for the disease. For example, Pima Indians in Mexico are less likely to develop Type 2 Diabetes Mellitus compared to Pima Indians in the United States (6.9% vs. 38%).

In India, there are estimated 77 million people above the age of 18 years are suffering from Diabetes (type 2) and nearly 25 million are prediabetics (at a higher risk of developing Diabetes in near future). More than 50% of people are unaware of their Diabetic status which leads to health complications if not detected and treated early.

Assam has an incidence of 5.5%, with a narrow rural and urban divide.

Diabetes can damage blood vessels in the heart, eyes, kidneys and nerves. People with Diabetes have a higher risk of health problems including heart attack, stroke and kidney failure. Diabetes can cause permanent vision loss by damaging blood vessels in the eyes. Diabetes is a chronic disease that affects millions of people worldwide. It's the sixth leading cause of death in the United States, and it's also a disproportionately expensive disease.

Because of increasing numbers of Diabetes Mellitus in worldwide the investigator are interested in conducting the study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus in selected Urban community (Chandan Nagar).

Kaur Sumanpreet , Kaur Harmanpreet [2017] conducted study on a Descriptive Study to Assess the Knowledge Regarding Diabetes Mellitus among the Residents of Selected Rural Community, Gurdaspur, Punjab Diabetes Mellitus is the metabolic disease characterized by increased the level of glucose in the blood resulting from defect in insulin secretion, insulin action or both. Diabetes Mellitus is the most prevalence disease in the world now a days. To assess the level knowledge of selected community residents regarding Diabetes Mellitus. To determine the association of level of knowledge of the selected community residents regarding Diabetes Mellitus with selected demographic variables Non-Experimental, Quantitative Research Approach and Univariant Descriptive Research design was used in present study to assess the knowledge regarding Diabetes Mellitus among selected rural community residents. The result of present study revealed that out of 100 community people, 90% have average knowledge, 9% have good knowledge and only 1% have poor knowledge. The mean score of good level of knowledge was 21.77 with standard deviation ±0.56, the mean score of average knowledge was 16.97 with standard deviation ±0.35 and mean score of poor level of knowledge was 10 with standard deviation 0. The association between the level of knowledge regarding Diabetes Mellitus of residents of selected rural community with their demographic variables. The result revealed that there was a significant association found with the age, education, and occupation at the level of significance <0.05 and there was no significant association found between the level of knowledge and their Gender, Type of Family, Presence of Disease, Duration of Disease, Type of Medication and Source of Information The analysis of the data regarding the assessment level of the knowledge regarding Diabetes Mellitus among the residents of community. The result of present study revealed that out of 100 community people, 90% have average knowledge, 9% have good knowledge and only 1% have poor knowledge.

Ravikumar P, Bhansali A, Ravikiran M, Bhansali S, Walia R, Shanmugasundar G, et al. [2009] conducted study on Prevalence and risk factors of Diabetes in a community-based study in North India: The Chandigarh Urban Diabetes Study this study aimed to assess the prevalence and risk factors associated with diabetes in the North Indian city of Chandigarh. his cross-sectional survey of 2227 subjects (response rate: 94%), aged ≥ 20 years and representative of the urban Chandigarh population, was conducted from April 2008 to June 2009. Fasting plasma glucose (FPG) and 2-h plasma glucose (2hPG) following ingestion of 75 g of an anhydrous glucose equivalent were estimated by glucometer in all subjects except those with known Diabetes, in whom only FPG was measured. Diagnosis of Diabetes was based on 1999

WHO criteria. The collected prevalence data was age-standardized for the Chandigarh population, and multivariate logistic-regression analysis was used to correlate risk factors with the presence of diabetes. A total of 349 subjects (15.7%, 95% CI: 13.9–16.9) were Diabetic, comprising 210 (9.4%) with known Diabetes and 139 (6.2%) with newly diagnosed Diabetes, and 344 (15.4%, 95% CI: 14.3–17.1) subjects were prediabetic. The age-standardized prevalence of Diabetes and prediabetes were 11.1% (95% CI: 9.7–12.4) and 13.2% (95% CI: 11.8–14.6), respectively. Age ≥ 50 years, a family history of Diabetes, BMI ≥ 23 kg/m^2, abdominal obesity and hypertension were significantly and positively associated with the presence of diabetes, whereas educational status was negatively associated with Diabetes ($P < 0.001$ for all). The age-standardized prevalence of Diabetes and prediabetes were 11.1% and 13.2%, respectively. Older age, family history of Diabetes, obesity and hypertension were positively related, while educational status was negatively related, to the presence of Diabetes.

STATEMENT OF THE PROBLEM

A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati.

OBJECTIVES OF THE STUDY

1. To assess knowledge regarding risk factors and preventing strategies for Type 2 Diabetes Mellitus.
2. To find out the association between knowledge regarding risk factors and preventing strategies for Type 2 Diabetes Mellitus with selected demographic variable among adults.

HYPOTHESIS:

H1: There is significant association between knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults with their selected demographic variables.

ASSUMPTION:

In this study, it will be assumed that:

- The people in the selective urban community may have some knowledge regarding risk factors and prevention of Diabetes Mellitus.

OPERATIONAL DEFINITION:

1.ASSESS – According to Oxford Dictionary, assess refers to make a judgement about the nature or quality of someone or something.

In this study, it refers to the process of judging the knowledge regarding risk factors and prevention of Diabetes Mellitus.

2.KNOWLEDGE - According to Oxford dictionary in English, knowledge means the information, understanding and skills that you gain through education or experience or the study of knowledge about a particular fact and situation.

3.RISK FACTOR – According to Oxford dictionary, a risk factor is an attribute or condition that increase the likelihood of an individual developing an illness.

4.PREVENTION – According to The Britannica dictionary, prevention means the act or practice of stopping something bad from happening: the act of preventing something.

In this study, prevention is the decrease the change of getting Diabetes Mellitus disease.

5. URBAN COMMUNITY – Urban community means an area with a high density of population.

In this study, it refers to the adults who were residing in Chandan Nagar.

DELIMITATION:

1. The study is delimited to only 18-59 years of age group people.
2. The study is delimited only in Chandan Nagar of Guwahati, Assam.
3. The study is delimited only for 1 week data collection.

CONCEPTUAL FRAMEWORK:

A concept is an abstract idea or mental image of phenomena or reality. According to Pilot and Hungler, conceptual framework is defined as interrelated concepts or abstractions that are assembled together in some rational scheme by virtue of their relevance to a common theme. A conceptual framework is an analogous to the frame of the house provides a rational of prediction about the relationship among variables of a research study.

The purpose of conceptual framework is to provide a logical, coherent structure through which phenomenon of concern can be understood and discussed. Conceptual framework provides a frame of reference for members of a discipline to guide their thinking, observation and interpretation made of concepts preposition of conceptual framework are abstract and general, thus, it guides the development of the study and enables the researcher to accumulate the findings to nursing body of knowledge.

The conceptual framework for the present study is based on Modified Rosenstock Health Belief Model.

It is a theoretical model concerned with health decision-making. The model attempts to explain the conditions under which a person will engage in individual health behaviors, such as preventative screenings or seeking treatment for a health condition. The purpose of this model is explained and predict preventable health behaviours

The present study aims to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among adults in selected urban community, Guwahati.

The Modified Rosenstock Health Belief Model determinant of health was based on:

- Perceived Susceptibility
- Perceived Severity
- Perceived Benefits
- Perceived Barriers
- Modifying factors
- Self-Efficacy

- Cues to Action

PERCEIVED SUSCEPTIBILITY:

An individual's belief about their personal risk of getting a specific disease or condition.

PERCEIVED SEVERITY:

An individual's belief about the seriousness of a health problem and its potential consequences.

PERCEIVED BENEFITS:

An individual's belief about the positive outcomes of taking a specific action to prevent or manage a health problem.

PERCEIVED BARRIERS:

An individual's belief about the obstacles or difficulties associated with taking a specific action to prevent or manage a health problem.

MODIFYING FACTORS:

Modifying factors include demographic characteristics, socio economic characteristics, biological characteristics are included in this model.

SELF EFFICACY:

An individual's confidence in their ability to successfully perform a specific behaviour.

CUES TO ACTION:

Factors that prompt or trigger action, such as media campaigns, reminders, or personal experiences.

FIG: MODIFIED HEALTH BELIEF MODEL (ROSENSTOCK)

SUMMARY:

The chapter deals with the title, introduction, background of the study, need of the study, statement of the problem, objectives of the study, hypothesis, assumption, operational definition, delimitation and conceptual framework.

CHAPTER-II

REVIEW OF LITERATURE

Review of literature define as selection of available documents, both published and unpublished on the topic of research interest, which contain information, ideas, data and evidenced written from a particular standpoint to fulfill certain aims or express certain views on the nature of the topic and how it is to be investigated and the effective evaluation of this documents in relation to the research being proposed.

A literature view uses as it's database reports of primary or original scholarship and does not report new primary scholarship itself. The primary reports used in the literature may be verbal, but in the vast majority of cases, reports are written documents. The types of scholarship may be empirical, theoretical, critical/analytic, or methodological in nature. Second a literature review seeks to describe, summarize, evaluate, clarify and/ or integrate to content of primary reports.

The review of literature or the study is arranged in the following sections:

Section A: Literature related to knowledge of adults about risk factors of Diabetes Mellitus

Section B: Literature related to knowledge of adults about prevention 0f Diabetes Mellitus

Section A: Literature related to knowledge of adults about risk factors of Diabetes Mellitus

1 Agbana RD, Adegbilero-Iwari OE, Amu EO, Ijabadeniyi OA, et al. (2021) conducted study on Awareness and risk burden of Diabetes Mellitus in a rural community of Ekiti State, South-Western Nigeria. In recent times, Diabetes Mellitus had a rapid increase in developing countries as a result of changing lifestyles among the people. This study was therefore aimed to investigate the level of awareness of Diabetes Mellitus and its associated risk factors in Afao: a rural community located in Irepodun/Ifelodun Local Government Ekiti State, Nigeria. Of the 134 (66.7%) respondents aware of Diabetes Mellitus, only an average of 43.9% had knowledge of its risk factors. Respondent's body mass index was significantly associated ($P < 0.01$) with knowledge of overweight/obesity as overweight (52.9%), grade 1 obese (62.5%) and morbid obese (100%) respondents had no knowledge of their status as risk factors for Diabetes Mellitus. Also, respondent's blood pressure status showed a significant association ($P = 0.099$) with respondent's knowledge of high blood pressure, 62.5% of those unaware of their blood pressure status had no knowledge of high blood pressure as a Diabetes risk factor. Respondent's age ($P = 0.024$) and diet; daily vegetable servings ($P = 0.015$) and cooking oil ($P = 0.05$) showed significant association with the occurrence of the disease in 14.4% respondents previously diagnosed. This study shows a need to improve on the level of awareness of Diabetes risk factors in Afao. Routine measurement of blood glucose levels

for adults, community health education and enlightenment strategies through the ministry of health on the awareness of Diabetes are highly recommended for the Afao community.

2. Tripathy Jaya Prasad, Thakur J S, Jeet Gursimer, Chawla Sohan, Jain Sanjay, Pal community-based study in North India. A household NCD STEPS survey was done in the state of Punjab, India in a multistage stratified sample of 5127 individuals. All the subjects were administered the WHO STEPS questionnaire, anthropometric and blood pressure measurements. Overall prevalence of Diabetes Mellitus among the study participants was found out to be 8.3% (95% CI 7.3-9.4%) whereas prevalence of prediabetes was 6.3% (5.4-7.3%). Age group (45-69 years), marital status, hypertension, obesity and family history of Diabetes Mellitus were found to be the risk factors significantly associated with Diabetes Mellitus. Out of all persons with Diabetes Mellitus, only 18% were known case of Diabetes Mellitus or on treatment, among whom only about one-third had controlled blood glucose status. The study reported high prevalence of Diabetes, especially of undiagnosed cases amongst the adult population, most of whom have uncontrolled blood sugar levels. This indicates the need for systematic screening and awareness program to identify the undiagnosed cases in the community and offer early treatment and regular follow up.

3. Kaur Sumanpreet , Kaur Harmanpreet [2017] conducted study on a Descriptive Study to Assess the Knowledge Regarding Diabetes Mellitus among the Residents of Selected Rural Community, Gurdaspur, Punjab Diabetes Mellitus is the metabolic disease characterized by increased the level of glucose in the blood resulting from defect in insulin secretion, insulin action or both. Diabetes Mellitus is the most prevalence disease in the world now a days. To assess the level knowledge of selected community residents regarding Diabetes Mellitus. To determine the association of level of knowledge of the selected community residents regarding diabetes mellitus with selected demographic variables Non-Experimental, Quantitative Research Approach And Univariant Descriptive Research design was used in present study to assess the knowledge regarding Diabetes Mellitus among selected rural community residents The result of present study revealed that out of 100 community people, 90% have average knowledge, 9% have good knowledge and only 1% have poor knowledge. The mean score of good level of knowledge was 21.77 with standard deviation ±0.56, the mean score of average knowledge was 16.97 with standard deviation ±0.35 and mean score of poor level of knowledge was 10 with standard deviation 0. The association between the level of knowledge regarding Diabetes Mellitus of residents of selected rural community with their demographic variables. The result revealed that there was a significant association found with the age, education, and occupation at the level of significance <0.05 and there was no significant association found between the level of knowledge and their Gender, Type of Family, Presence of Disease, Duration of Disease, Type of Medication and Source of Information The analysis of the data regarding the assessment level of the knowledge regarding Diabetes Mellitus among the residents of community. The result of present study revealed that out of 100 community people, 90% have average knowledge, 9% have good knowledge and only 1% have poor knowledge.

4. Ravikumar P, Bhansali A, Ravikiran M, Bhansali S, Walia R, Shanmugasundar G, et al. [2009] conducted study on Prevalence and risk factors of Diabetes in a community-based study in North India: The Chandigarh Urban Diabetes Study this study aimed to assess the prevalence and risk factors associated with diabetes in the North Indian city of Chandigarh. his cross-sectional survey of 2227 subjects (response rate: 94%), aged ≥ 20 years and representative of the urban Chandigarh population, was conducted from April 2008 to June 2009. Fasting plasma glucose (FPG) and 2-h plasma glucose (2hPG) following ingestion of 75 g of an anhydrous glucose equivalent were estimated by glucometer in all subjects except those with known Diabetes, in whom only FPG was measured. Diagnosis of diabetes was based on 1999 WHO criteria. The collected prevalence data was age-standardized for the Chandigarh population, and multivariate logistic-regression analysis was used to correlate risk factors with the presence of Diabetes. A total of 349 subjects (15.7%, 95% CI: 13.9–16.9) were Diabetic, comprising 210 (9.4%) with known Diabetes and 139 (6.2%) with newly diagnosed Diabetes, and 344 (15.4%, 95% CI: 14.3–17.1) subjects were prediabetic. The age-standardized prevalence of Diabetes and prediabetes were 11.1% (95% CI: 9.7–12.4) and 13.2% (95% CI: 11.8–14.6), respectively. Age ≥ 50 years, a family history of Diabetes, BMI ≥ 23 kg/m^2, abdominal obesity and hypertension were significantly and positively associated with the presence of diabetes, whereas educational status was negatively associated with Diabetes ($P < 0.001$ for all). The age-standardized prevalence of Diabetes and prediabetes were 11.1% and 13.2%, respectively. Older age, family history of Diabetes, obesity and hypertension were positively related, while educational status was negatively related, to the presence of Diabetes.

5. Thirunavukkarasu Sathish, Kavumpurathu Raman Thankappan , Jeemon Panniyammakal and Brian Oldenburg (2023) conducted Knowledge of Diabetes among Adults at High Risk for Type 2 Diabetes in the Trivandrum District of Kerala, India. We aimed to study the knowledge of Diabetes among individuals with a high risk for developing Type 2 Diabetes in the Trivandrum district of the Indian state of Kerala. The baseline data collected from 1007 participants of the Kerala Diabetes Prevention Program were analyzed. Diabetes knowledge was assessed using a scale adapted from a large nationwide study conducted in India. The composite score of the scale ranged from 0 to 8. The mean age of the participants was 46.0 (SD: 7.5) years, and 47.2% were women. The mean Diabetes knowledge score was 6.9 (SD: 2.1), with 59.5% having the maximum possible score of 8. Of the 1007 participants, 968 (96.1%) had heard the term Diabetes, and of them, 87.2% knew that the prevalence of diabetes is increasing, 92.9% knew at least one risk factor for Diabetes, 79.6% knew that Diabetes can cause complications in organs, and 75.9% knew that diabetes can be prevented. While the overall level of knowledge of Diabetes about its risk factors, complications, and prevention was generally high, an alarmingly low proportion of participants knew that diabetes can affect key organs such as the eyes (24.0%), heart (20.1%), feet (10.2%), and nerves (2.9%), and nearly a quarter (24.1%) were not aware that diabetes can be prevented. It is essential to educate high-risk individuals about diabetes complications and the importance of and strategies for Diabetes prevention in the Trivandrum district of Kerala.

6. Patowary A.N, Hazarika J, Barman M.P, 2016 was conducted a study on assessment of knowledge and awareness towards diabetes mellitus in Majuli, Assam. The objectives of the study to assess the level of knowledge and awareness of Diabetes Mellitus among the people of river island Majuli, Assam of India. Data was collected by a cross-sectional survey. Result: In this study, a total no of 260 individuals are included of which majority of them are females (59.62%) the mean is of the male individuals is 42.42 (s.d.15.00) also mean is of the female individual is 38.02(s.d.13.) conclusion: taking different steps to enhance the aware and more prevalence, its impact on the society of the study area is not up to the mark.

7. Mukesh Suresh Bawa1, Amol R. Patil1, Vikrant Pagar1 & Parth Vyas1 (2016) conducted Study of Risk Factors & Knowledge regarding Diabetes Mellitus, Random Capillary Blood Glucose Level among the participants of a Camp at RHTC of Government Medical College, Northern Maharashtra, India.The present study conducted with objective to find out presence of risk factors, knowledge regarding Diabetes amongst camp attendee from rural area. Methods: The present cross-sectional study carried out at Rural Health Training Centre (RHTC) among the camp attendee for screening of Diabetes by Random Capillary Blood Glucose (RCBG) method. The predesigned questionnaire was formulated. The study includes the participants of all age groups of all sex, village residence and not diagnosed earlier for Diabetes. Data analyzed with MS Excel 2010. Frequency analysis was done. Results; A total of 189 participants were included for the study purpose. 35 (18%) patients had family history of Diabetes Mellitus. 67 (35.4%) had physical activity apart from routine. 58(30%) were pre-obese & 29(15%) were obese as per BMI. 12(6.5%) had the RCBG level of >200mg/dl followed by the 17(8.9%) having between 140-200mg/dl. 96(60%) & 81(50.6%) of didn't know the correct cause of diabetes & treatment respectively. 35(61%) & 19(33.3%) patients were aware regular exercise & diet control for prevention of diabetes respectively. Conclusion: The study concludes the incidence of diabetes and presence of risk factors in rural population is at a level to concern the programme managers to develop effective strategy which includes screening and health education at community level through National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke (NPCDCS). This will help to control the upcoming diabetic epidemic among the rural India.

8. Haruna Dika a, Magdalena Deogratias b, Daniel Byamungu a, Karol Marwa c, Anthony Kapesa d, Stanley Mwita b, (2023) conducted Practice and Knowledge on Type 2 Diabetes Mellitus Risk Factors Among Office Workers in Mwanza City, Tanzania. This study assessed the level of knowledge and risk factors for Type 2 Diabetes Mellitus among office workers in Mwanza City, Tanzania. A cross-sectional study was conducted among 309 office workers in public and private institutions in Mwanza City. A structured, pre-tested questionnaire was used to collect information from the participants. The coded data were analyzed using STATA Version 14. The associations between various risk factors for Type 2 Diabetes Mellitus and knowledge on Type 2 Diabetes Mellitus were determined using Chi-square or Fisher's exact tests. The level of knowledge was poor in 41.1%, moderate in 31.1%, and good in 27.8% of the study participants. Family history of Type 2 Diabetes Mellitus showed a significant association with knowledge score (P=.001). Only 63 (20.4%) of respondents reported eating a healthy diet. Among the study participants, 154 (49.8%) had poor diabetes prevention practices, 82 (26.5%) had moderate practices, and 73 (23.7%) had good practices. The majority of the office workers who participated in this study had limited knowledge regarding risk factors for Type 2 Diabetes Mellitus and poor practices concerning the prevention of the disease.

Section B: Literature related to knowledge of adults about prevention of Diabetes Mellitus.

1.Devi.L.B.K, Singh S.H, Singh S.J, 2018 was conducted a study on prevalence of type-ll Diabetes Mellitus with an aim of finding the prevalence in all the states of North East, India. Data was collected based on the present paper consists of works which were published during the year 2010 to 2017, a period of eight years. Result : The urban women show the highest blood glucose level 9.4 in both Mizoram and Tripura which is followed by Manipur with (8.8%) and Sikkim with (7.8%) while the least is found among the rural women of Meghalaya (4%) whereas in case of men the highest blood glucose level can be seen in 6 (11.1%) followed by Mizoram and Sikkim with (10.7%) the least is seen in rural males of Meghalaya. Conclusion: Diabetes is found more prevalent among the people who are physically inactive, overweight

and obese. In North-East, the prevalence of Diabetes is rising and still most are unaware and undiagnosed. The prevalence of Diabetes rises with the age. There is no significant difference between male and female as in some states males are higher and in some, females are higher.

2. Ayalen B S and Zeleke J A et al 2016 conducted a study on prevalence of Diabetes Mellitus and its risk factors among individuals aged 15 years and above in Mizan -Aman town, Southwest Ethiopia. The objectives of the study was to assess the prevalence of diabetes mellitus and its risk factors among individuals aged 15 years and above. Data was collected-based on a cross-sectional study and was carried out from January 01 to March 30, 2016 in Mizan-Aman town, southwest Ethiopia. A multistage sampling technique was used to select study participants. The World Health Organisation (WHO) stepwise approach for non-communicable disease surveillance was deployed to collect data. Glucose meter was used to check fasting venous blood glucose level. Descriptive and logistic analyses were used. Result: A total of 402 participants were included in the study. The prevalence of Diabetes Mellitus was found to be 6.5% (26 out of 402) of which, the proportion of previously undiagnosed diabetes mellitus was 88.5%. The prevalence of prediabetes was also found at be 15.9%. Discussion: This study shown that the prevalence of diabetes mellitus is found to be 6.5% (26 out of 402). This finding is comparable to the International Diabetes Federation Atlas-projected estimate Diabetic Nephropathy (DN) for Ethiopia (52%), to those of studies done in Gondar town and Dabat residential districts which together reported 5.11%, Bishfotu town in which a prevalence of 5% was detected.

3. Nirmala Pangi V, Gudivada M, Lakshmi C 2016 conducted a comparative study of the prevalence of Type-Il Diabetes Mellitus in various demographic regions of Andhra Pradesh, India. A random sampling method was followed to study the prevalence of Diabetes in about 3000 individuals of age group between 15-68 years, selecting 1000 individuals from each area, As per 1988 World Health Organization criteria and norms, Diabetes Mellitus was diagnosed on the basis of 75g oral glucose tolerance test (OGT). Statistical analyses were conducted using Microsoft Excel 2007. The analysis of the study indicates that 35.5% individ uals were identified to be diabetic, especially 7.8% from tribal area, 12.5% from urban area. The study indicates that people in urban area were prone to Type 2 Diabetes than those in Tribal and semi-urban area. New cases of Diabetes were reported in tribal areas when compared to semi-urban and urban areas indicating that rural people were not spared from Diabetes.

4. Raghavendra A H et al. 2016 conducted a study on prevalence of Diabetes Mellitus with an aim of determining the prevalence of Diabetes mellitus in an urbanized village of East Delhi and factors associated with Diabetes mellitus. Data was collected based on the cross sectional study, conducted in residents of Gazipur Sample size came to be 451 considering prevalence of Diabetes as 12.0%. Capillary blood was used find the blood sugar level. Fasting level and OGTT (Oral Glucose Tolerance Test) was done to find the prevalence of Diabetes. Results: Prevalence of Diabetes was found to be 15.3%; Higher the body mass index (BMI) and longer duration of stay in urban area higher was the prevalence of diabetes. Conclusions: Older age group, higher BMI and longer duration of stay in urban area have significant associations with the higher prevalence of diabetes.

5. Sachin A et al 2020 conducted on study prevalence of Type 2 Diabetes Mellites T2DM in india Data was collected on cross sectional the objectives on the study conduct a systematic and critical review of published studies on prevalence of Type 2 Diabetes Mellitus (T2DM) in urban and rural areas of India results of 1751 articles screened by littles and abstracts ,37 fulfilled our inclusion criteria. Majority (28 of 37:76%) of studies were from south India to especially from the states of Tamil Nadu ,Andhra Pradesh Kerala and the prevalence of Type 2 Diabetes Mellitus showed a wide range from 1.9% to 25.2% only 11 studies covering 24 regions separately reported the data by urban 65 rural location inconsistent ,17 studies

reported prevalence of Type 2 Diabetes Mellitus by age group conclusion in this systematic review, we show that there remains an ambiguity about the actual prevalence of Type 2 Diabetes Mellitus from India due to several factors the findings underscore a strong need for having periodic regional surveillance involving appropriate epidemiological method.

6. Vasanth Kumar J Kamber S 2017 conducted on the prevalence of obesity among type 2 Diabetes Mellitus patients in urban area of Belagari data was collected cross sectional the objectives of the study was to determine the prevalence of obesity among Type 2 Diabetes Mellitus patients results the prevalence of generalized obesity (40) abdominal obesity (40)and combined obesity (0) among Type 2 Diabetes Mellitus ,patients were 58.68% ,81.84%and 53 ,42 % respectively multiple logistic regression analysis showed that female gender and hypertension were significantly associated with 40, AO and CO .physical inactivity and hyperglycaemic state were significantly ,associated ,with AO and CO but not with GO ,the duration of Type 2 Diabetes Mellitus was significant associated with AO but not with GO and CO conclusion our study prevalent comorbidity of Diabetic patient AO appear to be better indicator of diabetic risk than BMI low calorie diet increased physical activities and behavioural therapy as the first line interaction for weight loss should be stressed for the effective management of Type 2 Diabetes Mellitus.

7. Mobasseri M ,Shi Mohammad M 2019 conducted on study prevalence and incidence of type 1 Diabetes in the world a systematic review and meta-analysis data was collected on cross-sectional result from 1202 located articles ,193 studies were included in this systematic review the result of meta-analysis showed that the incidence of type 1 diabetes was 15 per 100,000 people and the prevalence was 9.5% 995% 1:0.07 to 0.12) in the world, which was statically significant conclusion According to the results ,the incidence and prevalence of type 1 diabetes are increasing in the world .As a result, insulin will be difficult to excess and afford, especially in under developed and developing countries.

8. Tripathy PJ, Thakur JS 2017 conducted a study prevalence and risk factors of diabetes in a large community based study in North India results from a steps survey in Punjab, India Data was collected on cross sectional the objectives of the study India is the diabetes capital with home to 09. million people with Diabetes Mellitus, the second highest number of cases after China results overall prevalence of Diabetes Mellitus of prediabetes was 6.3% (5.4 - 7.3%) age group (45-69 years) marital status hypertension, obesity and family history of Diabetes Mellitus were found to be the risk factors significantly associated with Diabetes Mellitus conclusions the study reported high prevalence of diabetes ,especially of undiagnosed cases amongst the adult population ,most of whom have uncontrolled blood sugar level this indicates the need for systematic screening and awareness program to identify the ,undiagnosed cases in the community and offer early treatment and regular follow up.

SUMMARY

The chapter deals with the review of literature related to the present study. studies related to the knowledge regarding the risk factors and prevention of Diabetes Mellitus.

CHAPTER III

RESEARCH METHODOLOGY:

Research methodology is a way of systematically solving the research problem. It is a science of studying how research is done scientifically. The methodology of research indicates the general pattern to gather valid and reliable data for the problem under investigation.

Research Methodology of the study include research approach, research design, variables, setting of the study, population, sample, sample size, sample technique, sample criteria, development of the tool, content validity of the tool, reliability of the tool, ethical consideration, procedure of data collection and plan for data analysis.

RESEARCH APPROACH:

According to Sharma S.K, "Research approach involves the description of the plan to investigate the phenomenon under study in a structure (Quantitative) unstructured (Qualitative), or a combination of the study".

In the study the research approach is Quantitative research approach in order to accomplished the objectives of the study.

RESEARCH DESIGN:

According to Jahoda, Deutch & Cook "A research design is the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy and procedure".

In this study, Descriptive cross sectional survey research design is adopted for the present study.

VARIABLES:

Variables are the qualities, properties or characteristics of person, things or situation that change or vary.

The variables used in this study are

1) **Research variable**: The research variables is knowledge regarding risk factors & prevention of Diabetes Mellitus among adults in the selected urban community area.

2) **Socio demographic variables:**
   a) Age
   b) Gender
   c) Diet
   d) Previous Knowledge
   e) Sources of previous knowledge
   f) Presence of any Diabetic problem

SETTING OF THE STUDY:

According to Pilot and Hungler "the researcher needs to decide where the intervention will be implemented and where the data will be collected."

According to Polit and Beck (2008), settings is the physical location and condition takes place in a study. Research settings are the specific areas from where the data are collected. The study setting is the location in which the research is conducted.

The study was conducted at selected urban community (Chandan Nagar) Guwahati, Assam.

POPULATION:

Population for this study include people in the selected urban community among 18-59 years of age group.

- Target population: In this study, target population are all the adults who are in the age group of 18-59 years of selected urban community of Guwahati.
- Accessible population: In this study the accessible population are the selected urban community people who are in 18-59 years of age, Guwahati.

SAMPLE:

Sample is the subject of the population that is selected for a study.

In this study, the sample are the adults (18-59 years) in urban community, Guwahati.

Sample size:

It refers to the subset or number of samples that will represent the entire population.

The sample size for the study is 70 adults among age group 18-59 of selected urban community (Chandan Nagar) , Guwahati.

Sampling technique:

Sampling technique is the process of studying the population by gathering information and analyzing that data. It is the basis of the data where the sample space is enormous.

Purposive Sampling technique was used in this study.

Sampling criteria:

The study sample was selected based on the following inclusive and exclusive criteria.

Inclusion criteria:

- Adults who was available at the time of data collection.
- Adults who could read and write Assamese/ English languages.

Exclusion criteria:

Adults who were not in the state to give consent.

TOOLS:

Development of the tool:

A research instrument is a device used to measure the concepts of interest in a research project that a researcher uses to collect data.

Description of the tool:

In this study, the following tools were used:

SECTION I: Demographic perfoma.

SECTION II: Self-Structured knowledge Questionnaire regarding risk factors and prevention of Type 2 Diabetes Mellitus.

Table: Data collection tools and techniques

SECTIONS	TOOLS	TECHNIQUES
Section I	Demographic variables	Self-structured knowledge Questionnaire method
Section II	Self-structured knowledge Questionnaire	Self-structured knowledge Questionnaire method

SECTION I: Demographic perfoma.

It consists of age, gender, diet, previous of knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus, sources of previous knowledge, presence of any Diabetic problem.

SECTION II: Structured knowledge Questionnaire regarding risk factors and prevention of Type 2 Diabetes Mellitus.

It consists of 20 structured questions on Type 2 Diabetes Mellitus regarding risk factors and prevention of Type 2 Diabetes Mellitus among the adults of age group 18-59.

The correct answer carries for 1 (one) and wrong answer 0 (zero).

Table: Categorization of the score based on the level of knowledge.

SCORE	PERCENTAGE	RESULT
12-20	60% and above	Adequate
9-11	41-59%	Moderate
0-8	40% and below	Inadequacy

CONTENT VALIDITY OF THE TOOL:

Validity refers to the degree to which an instrument measures what it is supposed to measure.

Content validity of tool description whether the instrument accurately measures the full domains (content) of a concept.

Content validity of tool was done by four experts, three from Medical Surgical Nursing department and one from research subject.

The experts were requested to give their opinions regarding accuracy, relevant and appropriateness of the content. Based on the suggestions given by the experts, necessary modifications and correction were made after consulting with the guide.

RELIABILITY OF THE TOOL:

According to Suresh K Sharma: Reliability is the degree of consistency and accuracy with an instrument measure the attribute for which is designed to measure. In this study, reliability is calculated as follow:

- Karl Pearson co-efficient correlation (split half method)
- The reliability is found to be 0.77 indicating an acceptable level of the tool.

20 samples were collected for reliability test.

ETHICAL CONSIDERATION

1. Permission obtained from the principal of Rahman Institute of Nursing and Paramedical Sciences to conduct the study.
2. Written permission was obtained from Director of Health Services, Kamrup Metro District.
3. Formal approval was obtained from Language Expert in English
4. Formal approval was obtained from Language Expert in Assamese

PILOT STUDY:

Pilot study is a small- scale version or trial run designed to test methods to be used in a large, more vigorous study. It proposed study conducted to develop and refine the methodology to be used in the larger scale.

The pilot study was conducted at Chandan Nagar, Guwahati.

PROCEDURE FOR DATA COLLECTION:

Data collection refers to the identification of subjects and the precise systematic gathering of information (data) relevant to the research purpose or the specific objectives, questions or hypothesis of the study.

- Developed tool after reviewing literature and validating by experts.
- Taken Permission from the principal of Rahman Institute of Nursing and Paramedical Sciences to conduct the study.
- Taken written permission from Director of Health Services, Kamrup Metro District.
- Finalize the data and duration for data collection was one week
- Informed consent was taken from the adults of Chandan Nagar
- Taken formal approval from Language Expert in English
- Taken formal approval from Language Expert in Assamese
- The sample are assured of the confidentiality of the information provided by them.

PLAN FOR DATA ANALYSIS:

It is defined as the process of systematically applying statistical and logical technique to describe and summarize.

Descriptive statistics:

The collected data were analyzed by descriptive statistics such as mean, standard deviation, frequencies and percentages.

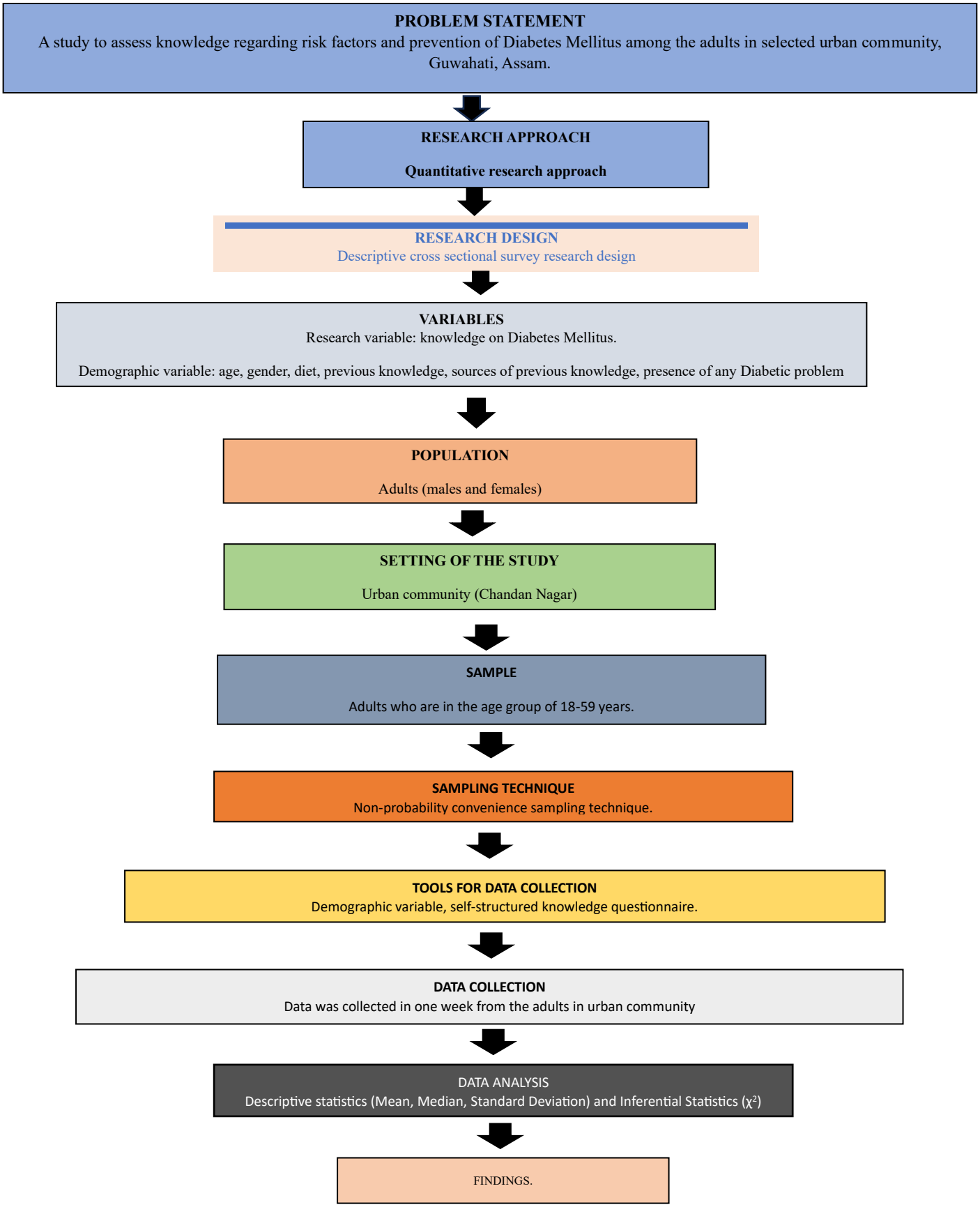
Inferential Statistics:

The association between knowledge regarding risk factors and preventing strategies for Diabetes Mellitus with selected demographic variables among adults were tested by χ^2 test. The results are presented by frequency table, diagrams and graphs.

DATA ANALYSIS

The data collected through administration of questionnaires was organized and tabulated. This data was analysed in term of objectives of the study by using descriptive and inferential statistics, which are necessary to provide substantial summary of result. The analysis was made by using important parameters like frequency, percentage and standard deviation.

SCHEMATIC DIAGRAM



SUMMARY:

This chapter deals with the research methodology adopted for the study and includes the research approach and design, setting of the study, development and description of the tool, variables, sample and sampling technique, content validity, data collection and data analysis.

CHAPTER - IV

ANALYSIS AND INTERTPRETATION OF DATA

According to Polit and Hungler (1999) "Data analysis is the systematic organization and synthesis of research hypothesis using those data."

Analysis is the process of categorizing, ordering, manipulating and summarizing the data to obtain answers to research questions. The purpose of analysis is to reduce data to intelligible and interpretable from the relations of research problems can be studied and tested.

This chapter deals with the analysis and interpretation of the data collected from 70 adults residing in a selected urban community (Chandan Nagar), Guwahati. The present study aimed to assess the knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus among the adults in a selected urban community of Guwahati, Assam.

Data were collected through self structured questionnaire on knowledge was tabulated, analysed and interpreted by using descriptive and inferential statistics which provide a substantive summary of results to the objectives.

OBJECTIVES OF THE STUDY

1. To assess the knowledge regarding risk factors and preventing strategies for Type 2 Diabetes Mellitus.
2. To find out the association between knowledge regarding risk factors and preventing strategies for Type 2 Diabetes Mellitus with selected demographic variables among adults.

PRESENTATION OF DATA:

The data collected were organized under the following sections:

Section I: Frequency and percentage distribution of demographic variables.

Section II: Distribution of level of knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus among adults.

Section III: Association between level of knowledge regarding risk factors and prevention of Type II Diabetes Mellitus among the adults with selected demographic variables.

SECTION I

TABLE 1.1

Frequency and percentage distribution of demographic variables according to their age group.

Age in years	Frequency (f)	Percentage (%)
18-30	19	27.14%
31-40	23	32.86%
41-50	18	25.71%
51-59	10	14.29%
Total	70	100%

The data in table 1.1 shows 19 (27.14%) of the adults were in the age group of 18-30 years, 23 (32.86%) of the adults were in the age group of 31-40 years, 18 (25.71%) of the adults were in the age group of 41-50 years and 10 (14.29%) of the adults were in the age group of 51-59 years.

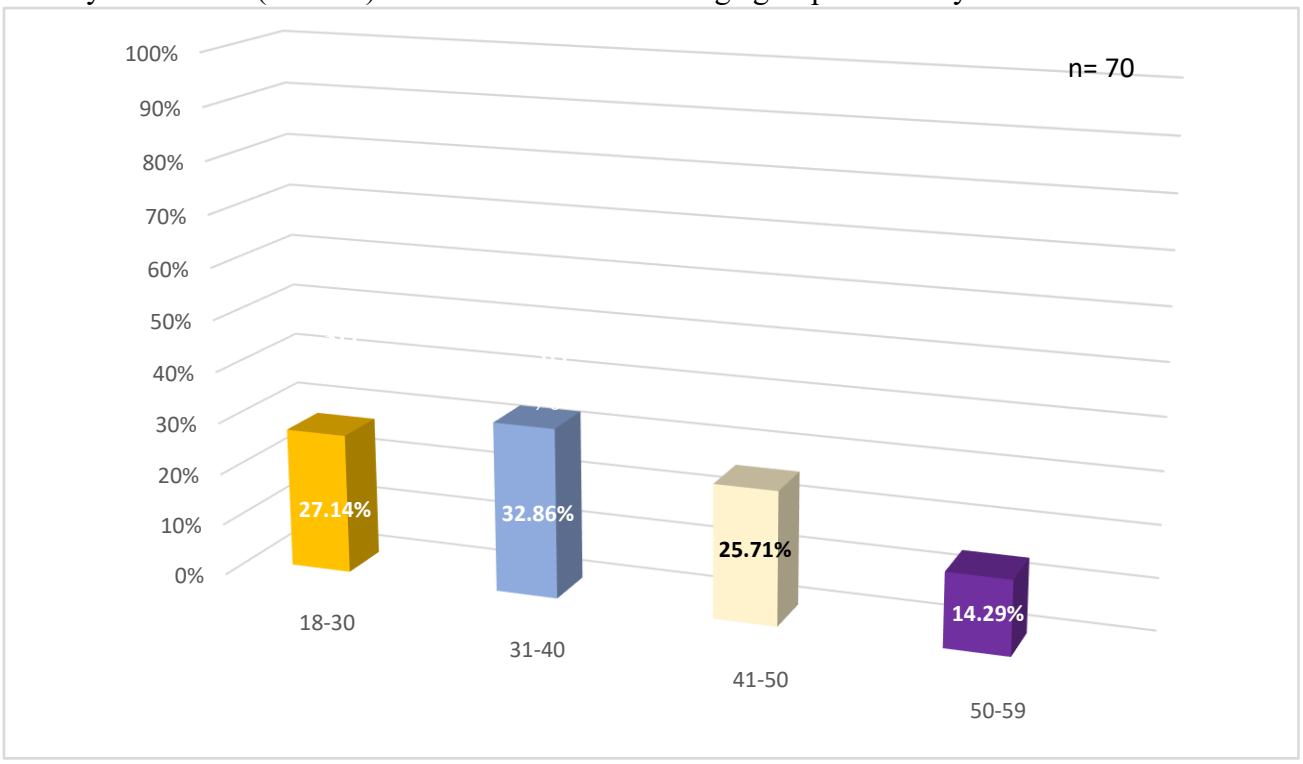


Fig 1.1: Bar diagram showing percentage distribution of adults according to their age group.

Table 1.2

Frequency and percentage distribution of demographic variables according to their gender.

GENDER	FREQUENCY (f)	PERCENTAGE (%)
Male	39	55.71%
Female	31	44.29%
Others	0	0%
Total	70	100%

The data in Table 1.2 shows that 39 (55.71%) of the adults were male and 31 (44.29%) of the adults were female.

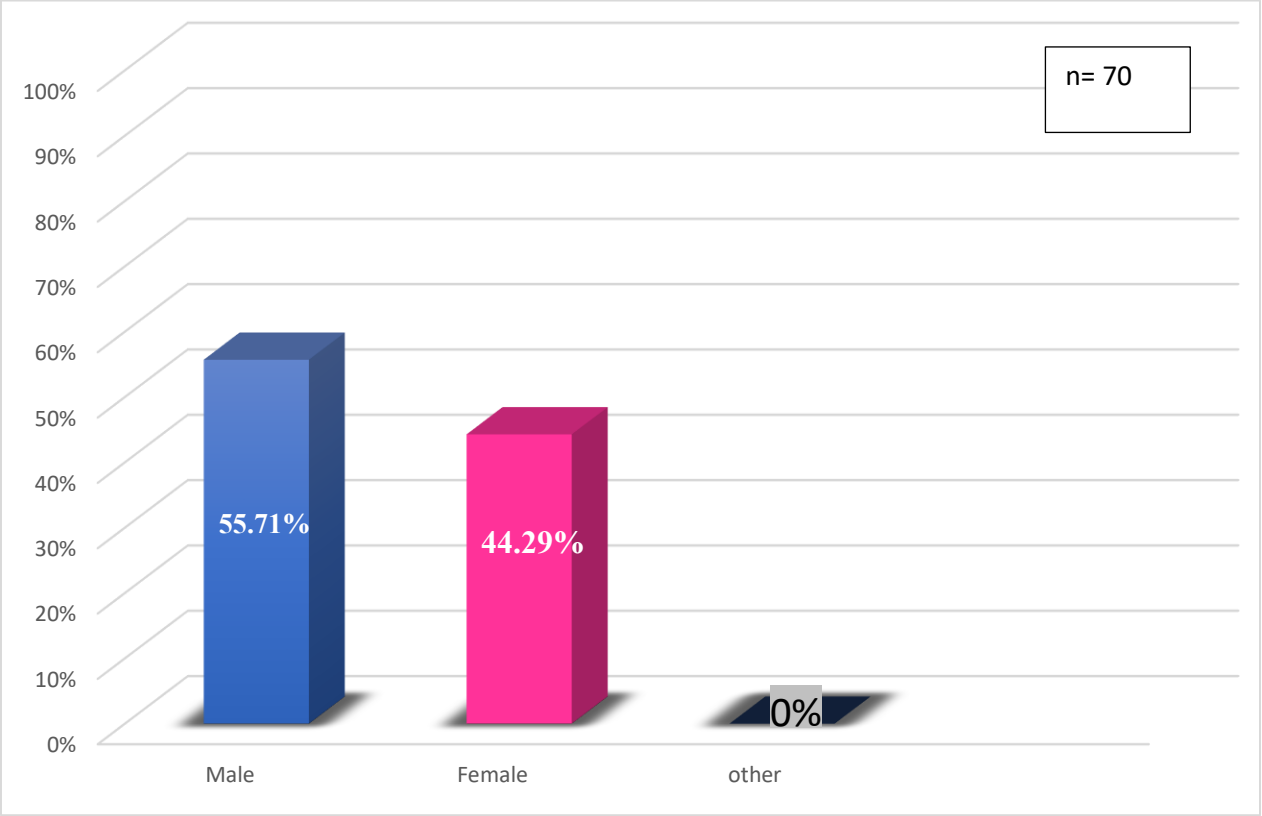


Fig 1.2: Bar diagram showing percentage distribution of adults according to their gender

Table 1.3

Frequency and percentage distribution of demographic variables according to their diet plan

DIET	FREQUENCY (f)	PERCENTAGE (%)
Veg	9	12.86%
Non Veg	52	74.28%
Vegan	9	12.86%
Total	70	100%

The data in the Table 1.3 shows that 9 (12.86%) of the adults were Veg, 52 (74.28%) of the adults were Non Veg and 9 (12.86%) of the adults were vegan.

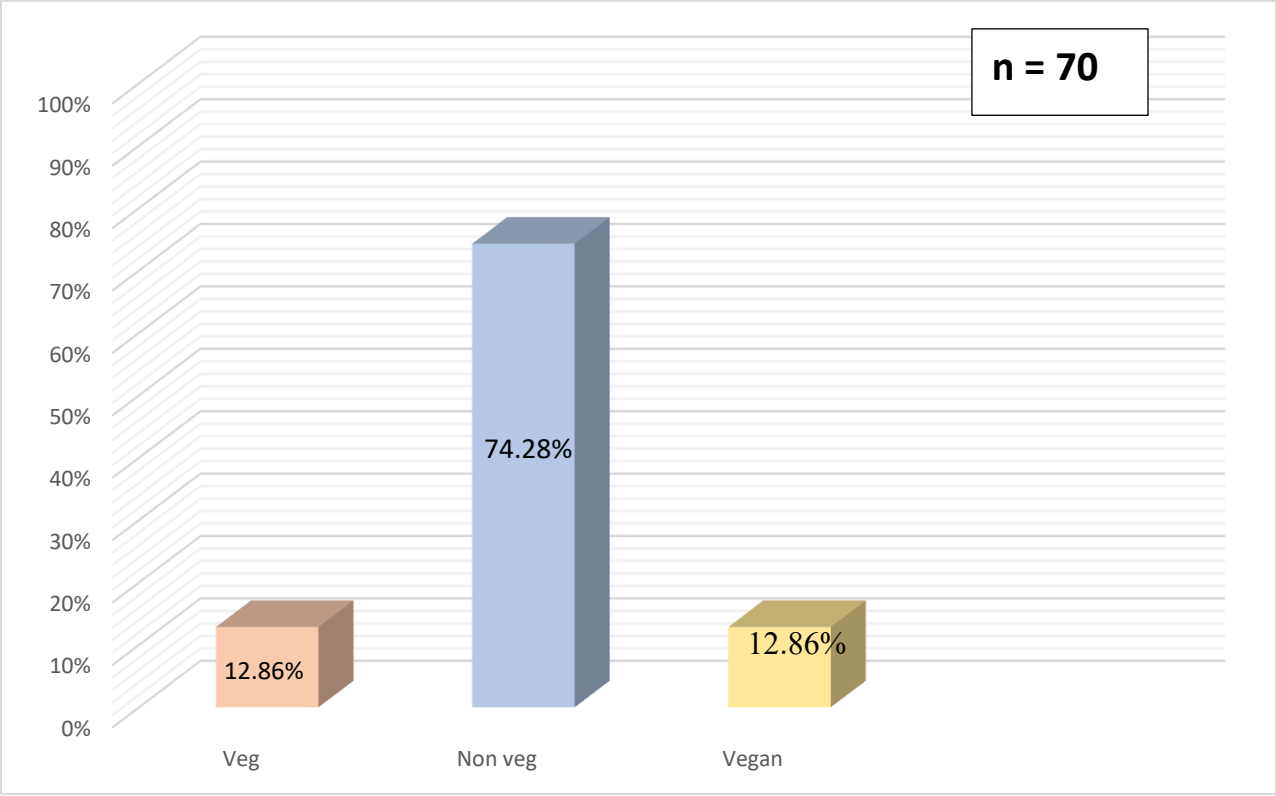


Fig 1.3: Bar diagram showing percentage distribution of adults according to their diet plan

Table 1.4

Frequency and percentage distribution of demographic variables according to their previous knowledge regarding risk factors and prevention of Type- 2 Diabetes Mellitus

KNOWLEDGE	FREQUENCY (f)	PERCENTAGE (%)
Yes	37	52.86%
No	33	47.14%
Total	70	100%

The data in the Table 1.4 shows that 37 (52.86%)of the adults were having (yes) previous knowledge and 33 (47.14%) of the adults were not having (No) previous knowledge.

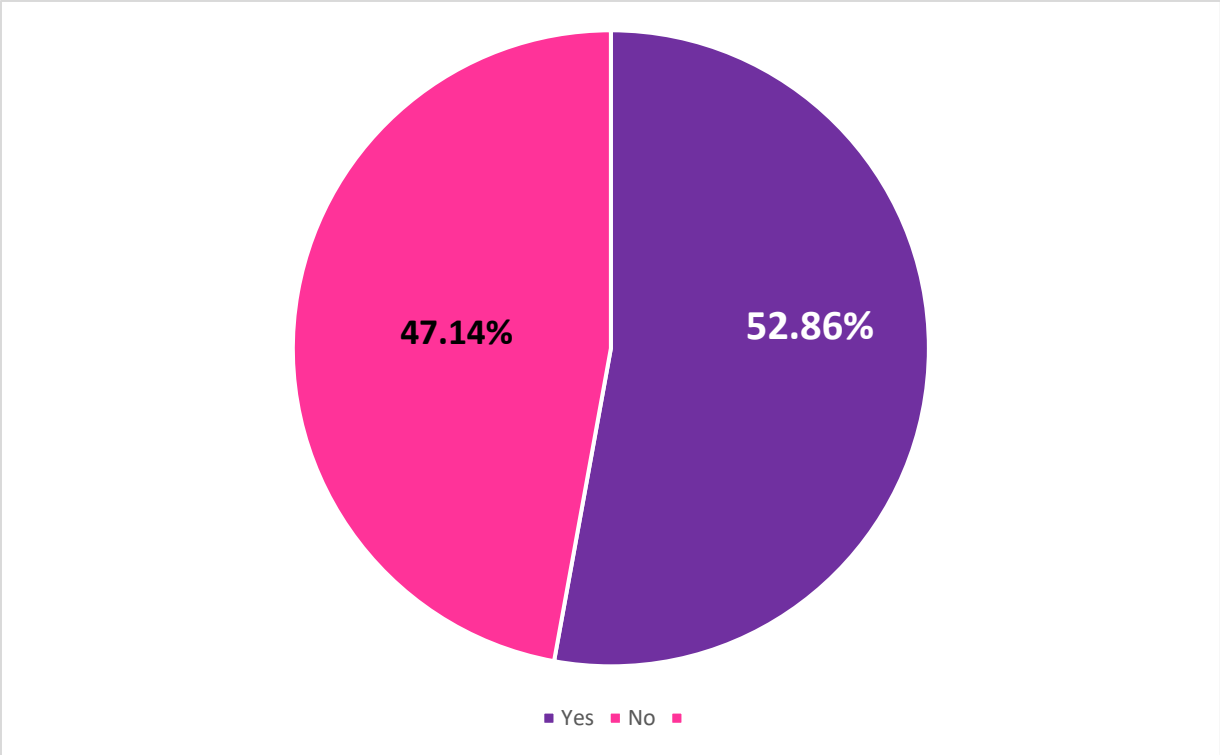


Fig 1.4: Pie diagram showing percentage distribution of adults according to their previous knowledge regarding risk factors and prevention of Type- II Diabetes Mellitus

Table 1.5

Frequency and percentage distribution of demographic variables according to their source of previous knowledge

SOURCE OF KNOWLEDGE	FREQUENCY (f)	PERCENTAGE (%)
Health care provider	11	15.71%
Family and friends	34	48.57%
Social media	17	24.29%
Other	8	11.43%
Total	70	10%

The data in the Table 1.5 shows that 11 (15.71%) of the adults were having source of previous knowledge from Health Care provider, 34 (48.57%) of the adults were having source of previous knowledge from Family and friends, 17 (24.29%) of the adults were having source of previous knowledge from social media , 8 (11.43%) of the adults were having source of previous knowledge from others.

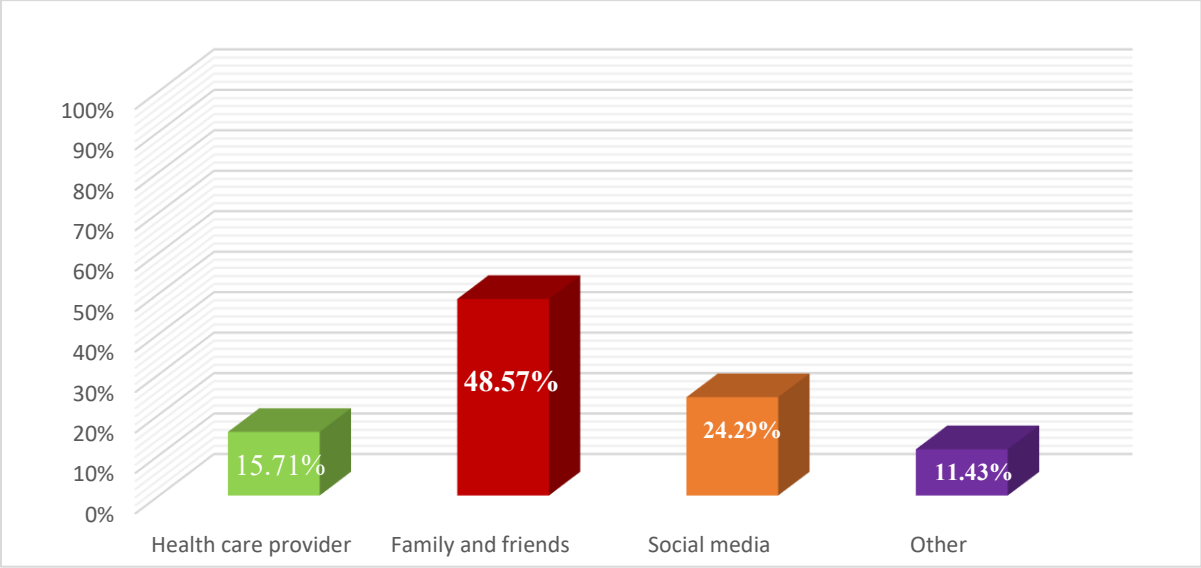


Fig 1.5: Bar diagram showing percentage distribution of adults according to their source of previous knowledge.

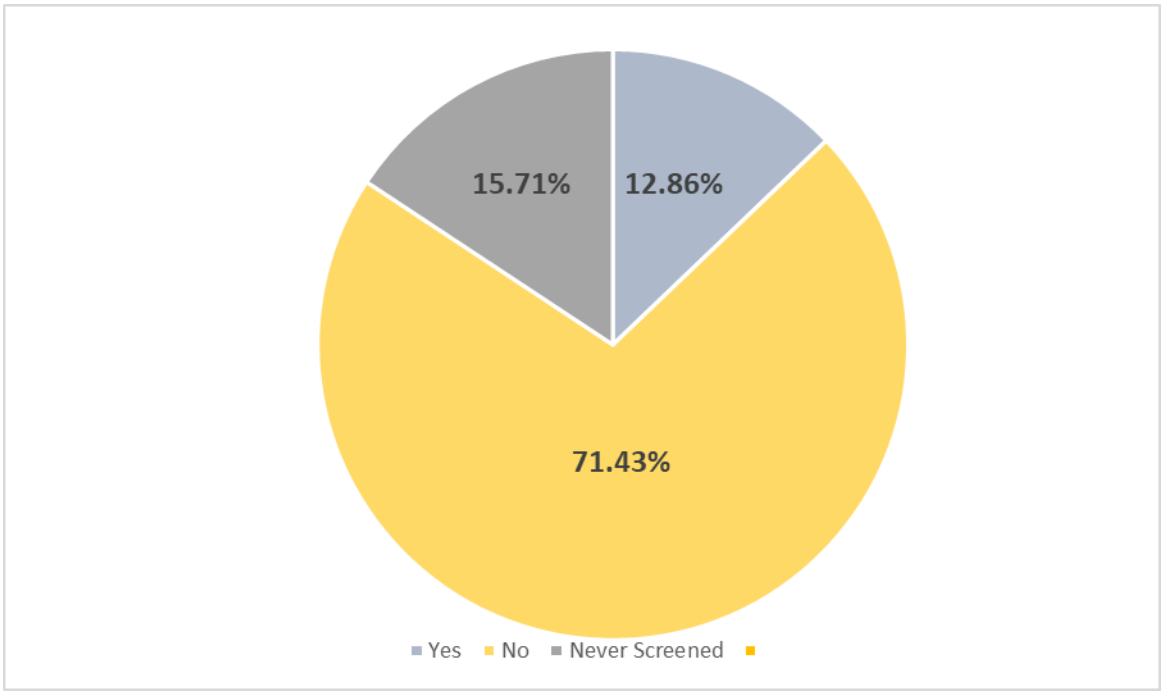
Table 1.6

Frequency and percentage Distribution of demographic variables according to their having Diabetic problems

PROBLEMS	FREQUENCY (f)	PERCENTAGE (%)
Yes	9	12.86%
No	50	71.43%
Never screened	11	15.71%
Total	70	100%

The data in the Table 1.6 shows that 9 (12.86%) of the adults were having (yes) Diabetic problems, 50 (71.43%) of the adults were not having (No) Diabetic problems and 11 (15.71%) of the adults were never screened for Diabetic problems.

Fig 1.6: Pie diagram showing percentage distribution of adults according to their having Diabetic problems



SECTION II

Distribution of level of knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus among adults.

TABLE 2

n=70

KNOWLEDGE	FREQUENCY (f)	PERCENTAGE (%)	RANGE SCORE	MEAN	MEDIAN	SD
Inadequate	12	17.14%	7-16	10.91	9	2.35
Moderate	29	41.43%				
Adequate	29	41.43%				
TOTAL	70	100%				

Table 2 illustrates the distribution of level of knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus among adults revealed that 29 (41.43%) had moderate knowledge, 29 (41.43%) had adequate knowledge and 12 (17.14%) had inadequate knowledge with obtained score range between (7-16), with median score of 9 and mean knowledge score was 10.91 with standard deviation 2.35.

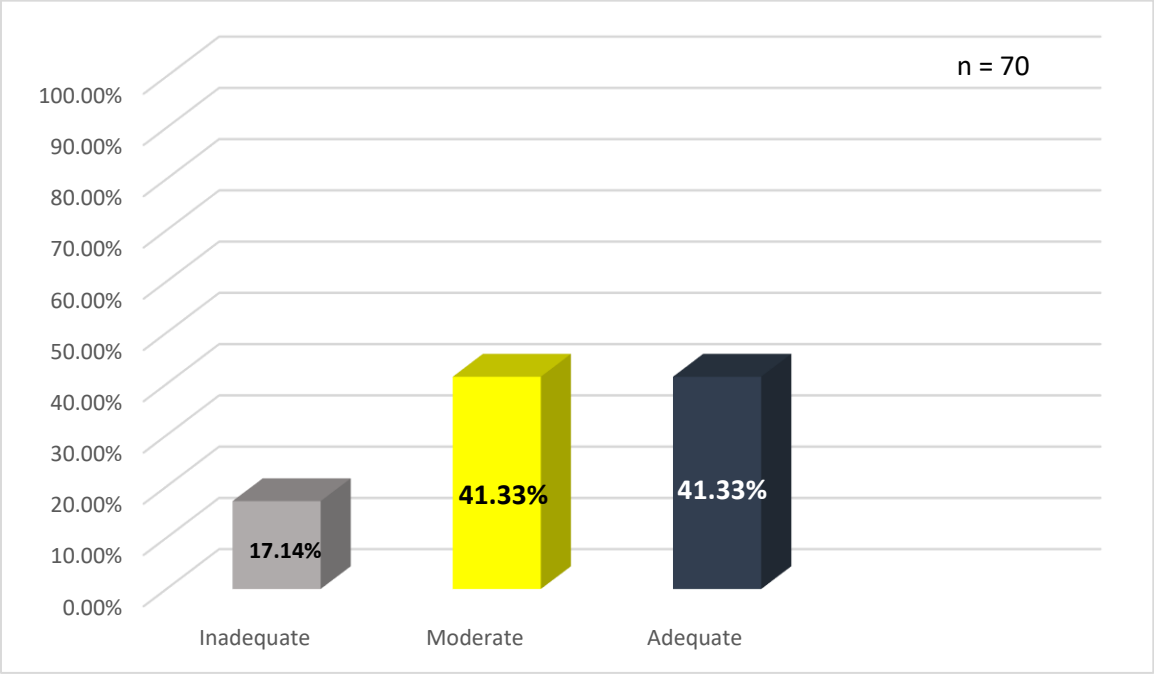


Fig 2: Bar diagram showing percentage distribution of level of knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus among adults.

SECTION III

ASSOCIATION BETWEEN LEVEL OF KNOWLEDGE REGARDING RISK FACTORS AND PREVENTION OF TYPE 2 DIABETES MELLITUS AMONG THE ADULTS WITH SELECTED DEMOGRAPHIC VARIABLES.

Table 3

DEMOGRAPHIC VARIABLES	GROUPS	LEVEL OF KNOWLEDGE			CHI SQUARE	df	P Value
		ADEQUATE	MODERATE	INADEQUATE			
AGE	18-30	8	7	4	16.1993	6	0.012725[S]
	31-40	8	9	6			
	41-50	6	11	1			
	51-59	9	0	1			
GENDER	Male	18	15	6	0.2541	4	0.992581[NS]
	Female	13	12	6			
	Other	0	0	0			
DIET	Veg	1	8	3	6.85	4	0.14403[NS]
	Non veg	23	18	8			
	Vegan	5	3	1			
PREVIOUS KNOWLEDGE	Yes	18	11	8	16.67	2	0.00024[S]
	No	11	18	4			

DEMOGRAPHIC VARIABLES	GROUPS	LEVEL OF KNOWLEDGE			CHI SQUARE	df	P Value
		ADEQUATE	MODERATE	INADEQUATE			
SOURCE OF KNOWLEDGE	Health care provider	6	3	2	8.843	6	0.18260^{NS}
	Family and friends	15	14	6			
	Social media	5	9	3			
	others	3	3	1			
DIABETIC PROBLEM	Yes	3	5	1	33.826	4	0.0001^{S}
	No	23	18	9			
	Never screened	3	6	2			

*S- Significant at 0.05 level of significance.

*NS- Not significant at 0.05 level of significance.

df- degree of freedom

The Table 3 represented association between level of knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus with selected demographic variables such as age, gender, diet, previous knowledge, sources of knowledge, having Diabetic problem among adults was tested by χ^2 test.

The demographic variables such as age, previous knowledge and having Diabetic problem were significant at $p < 0.05$ level and other demographic variables such as gender, diet, sources of knowledge were found to be non-significant at $p < 0.05$ level with knowledge regarding risk factors and Prevention of Diabetes Mellitus among the adults.

SUMMARY:

This chapter deals with analysis and interpretation of data, frequency and percentage distribution table, graphical representation of the frequency and percentage distribution results and shows the association between level of knowledge with selected demographic variables.

CHAPTER -V

DISCUSSION

In order to achieve the objectives of the study, descriptive cross sectional survey research design was adopted.

In the present study, 70 adults were selected as sample by Non probability convenience sampling technique.

MAJOR FINDINGS OF THE STUDY WERE AS FOLLOWS:

Demographic variables of the participants

- Majority 23 (32.86%) of the adults were in the age group 31-40
- Majority 39 (55.71%) of the adults were male
- Majority 52 (74.28%) of the adults were non vegetarian.
- Most 37 (52.86%) of the adults were have previous knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus.
- Near half 34 (48.57%) of adults are known about the Diabetes Mellitus from the family and friends
- Most 50 (71.43%) of the adults did not have Diabetic problem

Level of knowledge of participants regarding Diabetes Mellitus

- Majority 29 (41.43%) of the adults had moderate and adequate knowledge regarding Diabetes Mellitus

DISCUSSION

The present study was done to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati.

The present study revealed that majority 29 (41.43%) of the adults had adequate knowledge and moderate knowledge and 12 (17.14%) had inadequate knowledge regarding risk factors and prevention of Diabetes Mellitus.

The finding is contradicted by a comparative study conducted by Khlld Al A', Abbas Al M" and Nisha s to Risk Factors Associated with Diabetes Mellitus in a Saudi Community. Using Cross-Sectional design survey among 144 subject with simple random sampling technique. The results shows that, age

of the participants and physical activity were significantly associated with the Random Blood Sugar level RBS (p=0027, P=0.03, respectively). This confirms a study conducted in rural Saudi Aralia to assess the prevalence of Diabetes Mellitus.

The finding is contradicted by a comparative study conducted by Jaya Prasad Tripathy',J. S. Thakur", Gursimer Jeet", Sohan Chawla, Sanjay Jain', Arnab Pal', Rajendra Prasad and Rajiv Saran Prevalence and risk factors of Diabetes in a large community-based study in North India: results from a STEPS survey in Punjab, India among 4609 sample using multistage stratified sampling technique .The result shows the socio-demographic, behavioural and clinical characteristics of the respondents in the study.

Majority of the respondents are females (64%), adults in the age group 25-44 years (51%), rural residents (61%) and belong to the general caste (48%). The prevalence of hypertension among the respondents was 36%. Nearly 15% were current alcohol users whereas around 4% were found to be current smokers.

SUMMARY

This chapter deals with the summarizing the discussion which can be stated that the expected result is obtained after doing tabulation, analysis and interpretation based on the data collected from the selected study area in the light of objectives of the study.

CHAPTER-VI

SUMMARY, IMPLICATION, LIMITATION, RECOMMENDATION AND CONCLUSION

This chapter deals with summary, major findings, implication of the study in the field of nursing education, nursing administration, nursing practice and nursing research. The limitations of the study have been stated and the recommendation for future research in different aspects has also been presented in this chapter.

SUMMARY

The present study was done to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati.

PROBLEM STATEMENT

"A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati.

OBJECTIVES OF THE STUDY

1. To assess knowledge regarding risk factors and preventing strategies for Type 2 Diabetes Mellitus.

2.To find out the association between knowledge regarding risk factors and preventing strategies for Type 2 Diabetes Mellitus with selected demographic variables among adults.

HYPOTHESIS

Hypothesis was tested at 0.05 level of significance.

- HI: There is significant association between knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults with their selected demographic variables.

Research approach: The approach used for this study is Quantitative Approach.
Research design: The research design adopted for this study is descriptive cross sectional survey research design.
Setting of the study: The study was conducted in selected urban community (Chandan Nagar) Guwahati.
Sample: In this study, the sample was the adults (18-59years) in urban community, Guwahati.
Sampling technique: Non probability convenience sampling technique was used to select the sample.

Conceptual framework: The conceptual framework chosen for this study was Modified Health Belief Model (Rosenstock) .
Tools: The tools use for collecting data is demographic variables and self-structured knowledge questionnaire.
Validity of the tool: In order to determine the content validity, the research tools was given to three experts from the field of Medical Surgical Nursing and one expert from Obstetrics and Gynaecology.
Description of the tool; the initial tools were developed in English. Then the tools demographic variables and self-structured knowledge questionnaire were translated into Assamese by an expert of Assamese department from Karmashree Hiteswar Saikia senior secondary School, Sixmile.
Reliability of the tool: The reliability of the self-structured knowledge questionnaire was established by split half method and calculated using Karl Pearson coefficient correlation formula. The tool was administered to 20 adults of urban community (Chandan Nagar), Guwahati who can read and understand Assamese/English. The reliability by coefficient of correlation for self-structured knowledge questionnaire for English/Assamese was r= 0.77. the tools were found to be reliable.
Pilot study: A pilot study was conducted with 10 samples at Chandan Nagar, Guwahati from urban community. The problem statement revealed that the tool is feasible and practicable.
Procedure of data collection: The data was collected by the investigator personally by structured interview method through self-structured knowledge questionnaire. The data collected was organized, analysed and interpreted according to the objectives of the study.

SUMMARY OF THE FINDINGS:

Demographic variables of the participants

- Majority 23 (32.86%) of the adults were in the age group 31-40
- Majority 39 (55.71%) of the adults were male
- Majority 52 (74.28%) of the adults were non vegetarian.
- Most 37 (52.86%) of the adults were have previous knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus.

- Near half 34 (48.57%) of adults are known about the Diabetes Mellitus from the family and friends
- Most 50 (71.43%) of the adults did not have Diabetic problem

Level of knowledge of participants regarding Diabetes Mellitus

Majority 29 (41.43%) of the adults had moderate and adequate knowledge regarding Diabetes Mellitus

NURSING IMPLICATION OF THE STUDY

The investigation had drawn the following implications from the study which is of vital concern to the field of nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice

The findings of the study can highlight the necessity to assess the knowledge of the community people so that the nurses can improves their knowledge and skills and fulfil the increasing demands for the proper nursing care of the health.

Nursing Education

The nurse educator can provide skilled teaching strategies to the community people regarding assessment of risk factors and prevention of Diabetes Mellitus.

Nursing Administration

The findings of the study will help the nurse administrator to assist in budget preparation, monitors revenues and expenditures as appropriate or according to program requirements for Diabetes Mellitus screening and awareness program.

Nurse administrator can represent the health departments at local, state and regional meetings related to knowledge of adults of community regarding care of health.

Nursing Research

Nursing researchers can conduct further studies related to risk factors and prevention of Diabetes Mellitus among different age group/adults.

LIMITATION

The present study has following limitations:

- Only the adults who are in the age group of 18-59 years (both males and females).
- The study was conducted only in selected urban community (Chandan Nagar) Guwahati.

RECOMMENDATION

- A similar study can be replicated on a large scale for wider generalizations.
- A study can be conducted on assessing the attitude regarding risk factors and prevention of Diabetes Mellitus.
- An observational study regarding practice of risk factors and prevention of Diabetes Mellitus can be conducted.
- A similar study can be undertaken in hospital setting.

CONCLUSION

The study concluded that knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati was inadequate. Therefore, there is a need to increase awareness in the community through educational programmes so that it will be helpful in early detection and diagnosis of Diabetes Mellitus and also to improve such knowledge and changes in dietary habits to prevent from Diabetes Mellitus.

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ANNEXURES

ANNEXURE I (A)

TOOL FOR DATA COLLECTION

(ENGLISH VERSION)

SECTION – A: DEMOGRAPHIC PROFILE

INSTRUCTION:

- **The information given by you will be used properly for research purpose and your answer will be kept confidential.**

Date: - **Sample Code No :-……**

1) Age

a) 18 - 30 years
b) 31-40 years
c) 41-50 years
d) 51-59 years

2) Gender

a) Male
b) Female
c) Others

3) Types of diet

a) Vegetarian
b) Non vegetarian
c) Vegan

4) Previous Knowledge regarding risk factors and prevention of Type-2 Diabetes Mellitus.

a) Yes
b) No

5) Sources of previous knowledge:

a) Health care provider.
b) Family and friends.
c) Social media
d) Others

6) Do you have any Diabetic problem?

a) Yes
b) No
c) Never Screened

ANNEXURE I (B)

(ASSAMESE VERSION)

ক – শাখা : জনগাঁথনিগত প্রফাইল

১) বয়স :

ক) ১৮ -৩০ বছৰৰ ভিতৰত ।

খ) ৩১- ৪০ বছৰৰ ভিতৰত।

গ) ৪১-৫০ বছৰৰ ভিতৰত ।

ঘ) ৫১-৫৯ বছৰৰ ভিতৰত I

২) লিংগ :

ক) পুৰুষ ।

খ) মহিলা ।

গ) অন্যান্য ।

৩)) খাদ্যৰ ধৰণ :

ক) নিৰামিষভোজী ।

খ) অমিষভোজী ।

গ) ভেগান (নিৰামিষ কিন্তু গাখীৰ যুক্ত খাদ্য খায়)।

৪) বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগৰ বাবে বিপদজনক কাৰক আৰু প্ৰতিৰোধৰ সম্পৰ্কে জ্ঞান :

ক) আছে।

খ) নাই।

৫) জ্ঞানৰ উৎস :

ক স্বাস্থ্যসেৱা প্রদানকাৰী।

খ) পৰিয়াল আৰু বন্ধুবৰ্গ।

গ) চছিয়েল মিডিয়া।

ঘ) অন্যান্য I

৬) আপোনাৰ কোনো বহুমুত্র বা মধুমেহ ৰোগ আছে নেকি?

ক) আছে।

খ) নাই।

গ) এতিয়ালৈকে জোখা নাই ।

ANNEXURE II (A)

(ENGLISH VERSION)

SECTION – B : SELF-STRUCTURED KNOWLEDGE QUESTIONNAIRE

INSTRUCTION:

- **The information given by you will be used properly for research purpose and your answer will be kept confidential.**

Date: - **Sample Code No :-……**

1) What do you understand by Diabetes Mellitus?

a) Low blood sugar level
b) High blood sugar level
c) Low blood pressure
d) High blood pressure

2) What is the normal range of Fasting Blood sugar level?

a) Less than 100 mg/dl.
b) Less than 126 mg/dl.
c) Less than 140 mg/dl.
d) Less than 200 mg/dl.

3) Which machine (apparatus) is used for checking blood sugar level?

a) Thermometer
b) Oximeter
c) Glucometer
d) Sphygmomanometer

4) Which of the following is a risk factors of developing Type-2 Diabetes Mellitus?

a) Family history of hypertension
b) Family history of Diabetes.
c) Family history of pneumonia
d) Young age.

5) Which of the following may lead to developing of Type -2 Diabetes Mellitus?

a) Normal body weight.
b) Sedentary lifestyle.
c) High Fiber diet.
d) Low blood pressure.

6) Which of the following statement is correct for reducing Type-2 Diabetes Mellitus?

a) Increase intake of high calorie diet.
b) Decrease intake of fruits and vegetables.
c) Increase intake of Saturated fats.
d) Increase intake of high rich fiber diet and doing physical activity.

7) Which of the following is a common symptom of Type-2 Diabetes Mellitus?

a) Increased thirst
b) Increased urination
c) Increased hunger
d) All of the above

8) What is the recommended amount of physical activity per week to reduce the risk of Type-2 Diabetes Mellitus?

a) 0 hour.
b) At least 2-3 hours.
c) At least 5-10 hours.
d) Al least 10-15 hours.

9) What is the role of monitoring blood sugar levels in the management of type 2 diabetes mellitus?

a) To adjust medication dosages
b) To monitor the effectiveness of treatment
c) To identify patterns of high or low blood sugar
d) All of the above

10) Which of the following medication can increase the risk of developing Type-2 Diabetes Mellitus?

a) Steroids.
b) Certain antidepressants
c) Certain antipsychotics.
d) All of the above.

11) Which of the following lifestyle changes can helps to prevent Type -2 Diabetes Mellitus?

a) Increasing physical activity and losing weight.
b) Decreasing physical activity and gaining weight.
c) Maintaining a high - sugar diet.
d) Reducing sleep hours.

12) Diabetes Mellitus is caused by an imbalance of two things in the body one is Insulin and what is the other one?

a) Blood sugar
b) Sodium
a) Protein
c) Calcium

13) What is healthy diet to prevent Type-2 Diabetes Mellitus?

a) Sugary and fried food.
b) Candy and chips.
c) Plant - Based proteins and fiber - rich food.
d) None of the above.

14) What is the best way to manage Type-2 Diabetes Mellitus?

a) Through medication only.
b) Through lifestyle changes only.
c) Through a combination of medication and lifestyle changes.
d) There is no cure for Diabetes

15) What are the complications of Type-2 Diabetes Mellitus?

a) Heart disease.
b) Kidney disease.
c) Nerve damage
d) All of the above.

16) Which of the following statement is not a characteristic of Type-2 Diabetes Mellitus?

a) Obesity.
a) Slow progress of the disease process.
b) Problems with insulin secretion.
c) Cells that become insensitive to insulin.

17) What is the role of physical activity in preventing Type-2 Diabetes Melllitus?

a) It improves insulin sensitivity:
a) It reduces blood pressure.
b) It promotes weight loss.
c) All of the above.

18) What is the impact of stress on blood sugar levels?

a) It lowers blood sugar levels.
b) It raises blood sugar levels.
c) It has no effect on blood sugar levels
d) It depends on the individual.

19) What is most common drug used in Type-2 Diabetes Mellitus?

a) Pain killer
b) Oral hypoglycemic agent and Insulin.
c) Antibiotic.
d) None of above.

20) What is the recommended frequency of blood glucose monitoring for individuals with Type -2 Diabetes Mellitus?

a) Daily.
b) Weekly.
c) Monthly.
d) Quarterly.

ANNEXURE II (B)

(ASSAMESE VERSION)

খ - শাখা

প্রশ্নাৱলী

১) বহুমূত্র বা মধুমেহ ৰোগ বুলিলে কি বুজাই ?

ক) এক প্রকাৰৰ কর্কট ৰোগ।

খ) বেক্টেৰিয়াৰ সংক্রমণ।

গ) তেজৰ চেনীৰ মাত্রা অধিক হোৱাৰ বৈশিষ্ট্যপূর্ণ বিপাকীয় বিকাৰৰ এটা গোট।

ঘ) এবিধ ভাইৰাছজনিত ৰোগ।

২) উপবাসত তেজত চেনীৰ স্বাভাবিক পৰিসৰ কিমান ?

ক) ১০০মি লিগ্রাম/ডেচিলিটাৰতকৈ কম।

খ) ১২৬ মিলিগ্রাম/ডেচিলিটাৰতকৈ কম।

গ) ১৪০ মিলিগ্রাম / ডেচিলিটাৰতকৈ কম।

ঘ) ২০০ মিলিগ্রাম / ডেচিলিটাৰতকৈ কম ।

৩) তেজত গ্লুকজৰ মাত্রা বৃদ্ধি হলে কি ৰোগ হয় ?

ক) ডায়েবেটিজ ইনচিপিডাছ।

খ) বহুমূত্র বা মধুমেহ ৰোগ ।

গ) কুচিং চিনড্রম।

ঘ) ওপৰৰ এটাও নহয়।

৪) তলৰ কোনটো বাক্য বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগ হোৱাৰ বিপদজনক কাৰক ?

ক) উচ্চ ৰক্তচাপ হোৱাৰ পাৰিবাৰিক ইতিহাস ।

খ) বহূমূত্র বা মধুমেহ হোৱাৰ পাৰিবাৰিক ইতিহাস ।

গ) নিউম'নিয়া হোৱাৰ পাৰিবাৰিক ইতিহাস ।

ঘ) কম বয়স ।

৫) তলত দিয়া কোনটো বাক্য বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগ বিকাশত সহায় কৰে ?

ক) স্বাভাৰিক শৰীৰৰ ওজন ।

খ) বহি থকা জীৱনশৈলী ।

গ) উচ্চ আঁহযুক্ত খাদ্য ।

ঘ) নিম্ন ৰক্তচাপ ।

৬) তলৰ কোনটো উক্তি বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগ হ্রাস কৰাৰ বাবে শুদ্ধ ?

ক) চেনী পানীৰ পৰিমাণ বৃদ্ধি কৰা ।

খ) ফল - মূল আৰু শাক - পাচলি গ্রহণ হ্রাস কৰা ।

গ) সংপৃক্ত চর্বিৰ গ্রহণ বৃদ্ধি কৰা ।

ঘ) উচ্চ আহঁযুক্ত খাদ্য গ্রহণ আৰু শাৰীৰিক কার্যকলাপ বৃদ্ধি কৰা ।

৭) তলৰ কোনটো বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগৰ এটা সাধাৰণ লক্ষণ ?

ক) পিয়াহ আৰু প্রসাৰ বৃদ্ধি ।

খ) ক্লান্তি আৰু দুৰ্বলতা ।

গ) অস্পষ্ট দৃষ্টি ।

ঘ) ওপৰৰ সকলোবোৰ ।

৮) বহুমুত্র বা মধুমেহ প্রকাৰ 2 ৰোগৰ আশংকা হ্রাস কৰিবলৈ প্রতি সপ্তাহত কিমান পৰিমান শাৰীৰিক কার্যকলাপ কৰিব লগে ?

ক) 0 ঘন্টা ।

খ) কমেও ২ - ৩ ঘন্টা ।

গ) কমেও ৫-১০ ঘণ্টা ।

ঘ) কমেও ১০-১৫ ঘণ্টা ।

৯) . . প্রকাৰ 2 বহুমূত্র বা মধুমেহ ৰোগৰ ব্যৱস্থাপনাত তেজৰ চেনীৰ মাত্রা নিৰিক্ষণৰ ভূমিকা কি ?

ক) ঔষধৰ মাত্রা নিয়ন্ত্রণ কৰিবলৈ

খ) চিকিৎসাৰ ফলপ্রসূতা নিৰিক্ষণ কৰিবলৈ

গ) উচ্চ আৰু নিম্ন তেজৰ চেনিৰ আৰ্হি চিনাক্ত কৰিবলৈ

ঘ) ওপৰৰ সকলোবোৰ

১০) তলৰ কোনটো ঔষধে বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগ হোৱাৰ সম্ভাৱনা বৃদ্ধি কৰিব পাৰে ?

ক) ষ্টেৰইড।

খ) কিছুমান এন্টিডিপ্রেছন ।

গ) কিছুমান প্রতিজৈৰিক।

ঘ) ওপৰৰ সকলোবোৰ।

১১) তলৰ কোনটো জীৱনশৈলীৰ পৰিবর্তনে বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগ প্রতিৰোধ কৰাত সহায় কৰে ?

ক) শাৰীৰিক কার্যকলাপ বৃদ্ধি আৰু ওজন কমোৱা ।

খ) শাৰীৰিক কার্যকলাপ হ্রাস কৰা আৰু ওজন বৃদ্ধি কৰা ।

গ) চেনিযুক্ত খাদ্য বজাই ৰখা ।

ঘ) টোপনিৰ সময় হ্রাস কৰা ।

১২) বহুমূত্র বা মধুমেহ ৰোগ শৰীৰত দুটা বস্তুৰ ভাৰসম্যহীনতাৰ ফলত হয় । তাৰে এটা ইনছুলিন আৰু এটা কি ?

ক) তেজত চেনীৰ পৰিমান ।

খ) সুৰা ।

গ) এমিনো এচিড ।

ঘ) কেলচিয়াম ।

১৩) বহুমূত্র বা মধূমেহ প্রকাৰ 2 ৰোগ পতিৰোধ কৰিবলৈ স্বাস্থ্যকৰ খাদ্য কি ?

ক) চেনীযুক্ত আৰু ভজা খাদ্য ।

খ) কেনডি আৰু চিপছ ।

গ) উদ্ভিদ ভিত্তিক প্রটিন আৰু আঁহ সমৃদ্ধ খাদ্য ।

ঘ) ওপৰৰ এটাও নহয় ।

১৪) বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগ পৰিচালনা কৰা আটাইতকৈ উত্তম উপায় কি ?

ক) ঔষধৰ জৰিয়তে কেৱল ।

খ) জীৱনশৈলী ৰ পৰিৱর্তনৰ জৰিয়তে ।

গ) ঔষধ আৰু জীৱনশৈলী পৰিবর্তনৰ সংমিশ্রণৰ জৰিয়তে ।

ঘ) কোনো নিৰাময় নাই ।

১৫) বহুমূত্র বা মধুমেহ প্রকাৰ 2ৰোগৰ সাধাৰণ জটিলতা কি ?

ক) হৃদৰোগ ।

খ) বৃক্কৰোগ ।

গ) স্নায়ুৰ ক্ষতি ।

ঘ) ওপৰৰ সকলোবোৰ ।

১৬) তলত দিয়া কোনটো উক্তি বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগৰ বৈশিষ্ট্য নহয় ?

ক) মেদবহুলতা ।

খ) ৰোগ প্ৰতিক্ৰিয়াৰ লেহেমীয়া প্ৰগতি ।

গ) ইনছুলিনৰ প্ৰতি অসংবেদনশীল হৈ পৰা

ঘ) ইনছুলিনৰ নিঃসৰণত অসুবিধা সৃষ্টি কৰে ।

১৭) বহুমূত্ৰ বা মধুমেহ প্ৰকাৰ 2 ৰোগ প্ৰতিৰোধ কৰাত শাৰীৰিক কাৰ্যকলাপৰ ভূমিকা কি ?

ক) ই ইনছুলিনৰ সংবেদনশীলতা উন্নত কৰে ।

খ) ই ৰক্তচাপ কমাই।

গ) ই ওজন কমাবলৈ সহায় কৰে ।

ঘ) ওপৰৰ সকলোবোৰ।

১৮) তেজত চেনীৰ মাত্ৰাৰ ওপৰত মানসিক চাপৰ প্ৰভাৱ কি ?

ক) ই তেজত চেনীৰ মাত্ৰা কমাই।

খ) ই তেজত চেনীৰ মাত্ৰা বৃদ্ধি কৰে ।

গ) তেজত চেনীৰ মাত্ৰাত ইয়াৰ কোনো প্ৰভাৱ নাই।

ঘ) ই ব্যক্তিৰ ওপৰত নিৰ্ভৰ কৰে ।

১৯) বহুমুত্ৰ বা মধুমেহ প্ৰকাৰ 2 ৰোগত কি কি সাধাৰণ ঔষধ ব্যৱহাৰ কৰা হয় ?

ক) এনালজেচিক ।

খ) ইনছুলিন ।

গ) প্ৰতিজৈৱিক।

ঘ) ওপৰৰ এটাও নহয়।

২০) বহুমূত্ৰ বা মধুমেহ প্ৰকাৰ 2ৰোগ থকা ব্যক্তিক তলৰ কোনটো পৰামৰ্শিত তেজৰ গ্লুকজৰ কম্পনাংক নিৰ্ধাৰণ কৰিব লাগে?

ক) দৈনিক ।

খ) সপ্তাহত এবাৰ ।

গ) মাহত এবাৰ ।

ঘ) ত্ৰিমাসিক ভাবে ।

ANNEXURE III

ANSWER KEY OF SELF STRUCTURE KNOWLEDGE QUESTIONNAIRE

ITEM	CORRECT ANSWER	SCORE
1	b	1
2	a	1
3	c	1
4	b	1
5	b	1
6	d	1
7	d	1
8	b	1
9	d	1
10	d	1
11	a	1
12	a	1
13	c	1
14	c	1
15	d	1
16	a	1
17	d	1
18	b	1
19	b	1
2o	a	1
		Total= 20

ANNEXURE IV

LIST OF EXPERTS FOR VALIDATION OF THE TOOL

1. Mrs. Ayisha Billah Sheikh
Assistant professor,
Department of Medical Surgical Nursing
Rahman Institute of Nursing and Paramedical Sciences

2. Mrs, Megha Tiwari
Assistant professor,
Department of Obstetrics and Gynaecology
Rahman Institute of Nursing and Paramedical Sciences

3. Mrs, Urmijyoti Deori
Professor,
Department of Medical Surgical Nursing
Rahman Institute of Nursing and Paramedical Sciences

4. Mrs. Rajkumari Komilasana
Assistant professor,
Department of Medical Surgical Nursing
Rahman Institute of Nursing and Paramedical Sciences

ANNEXURE V

CERTIFICATE OF APPROVAL

This is to certify that I have validated the tools of research project group 4, B. Sc (N) 3rd year students entitled **"A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati."** as a part of B. Sc (N) 3rd year syllabus.

Date:

Name of validator:

Designation of validator:

Signature of expert with seal:

ANNEXURE VI

CERTIFICATE OF CONTENT VALIDATION OF TOOL

CERTIFICATE OF APPROVAL

This is to certify that I have validated the tools of research project group 4, B. Sc (N) 3rd year students entitled **"A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati."** as a part of B. Sc (N) 3rd year syllabus.

Date: 11/01/25

Name of validator: Ayisha Billah Sheikh

Signature of validator:

Designation of validator: Assistant Professor

CERTIFICATE OF APPROVAL

This is to certify that I have validated the tools of research project group 4, B. Sc (N) 3rd year students entitled **"A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati."** as a part of B. Sc (N) 3rd year syllabus.

Date: 10/01/2025

Name of validator: Dr. Megha Tiwari Bhuyan

Designation of validator: Assistant professor

Signature of expert with seal:

Assistant Professor
Rahman Institute of Nursing and Paramedical Sciences
Radhanagar, Guwahati

CERTIFICATE OF APPROVAL

This is to certify that I have validated the tools of research project group 4, B. Sc (N) 3rd year students entitled **"A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati."** as a part of B. Sc (N) 3rd year syllabus.

Date: 11/3/2025

Name of validator: Urmijyoti Deori

Signature of validator:

Designation of validator: Professor

CERTIFICATE OF APPROVAL

This is to certify that I have validated the tools of research project group 4, B. Sc (N) 3rd year students entitled **"A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati."** as a part of B. Sc (N) 3rd year syllabus.

Date: 11/1/25

Name of validator: Rajkumari Romilasana

Signature of validator:

Designation of validator: Asst. Professor

ANNEXURE VII

EVALUATION CRITERIA CHECKLIST FOR VALIDATION OF TOOL

SECTION A : DEMOGRAPHIC VARIABLES

ITEM N0.	RELEVANCY		ADEQUACY		APPROPRIATENESS		REMARKS
	AGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE	
1							
2							
3							
4							
5							
6							

SECTION B : SELF STRUCTURED KNOWLEDGE QUESTIONNAIRE

ITEM No.	RELEVANCY		ADEQUACY		APPOPRIATENESS		REMARKS
	AGREE	DISAGREE	AGREE	DISAGREE	AGREE	DISAGREE	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

ANNEXURE: VIII

LIST OF LANGUAGE EXPERTS (ASSAMESE AND ENGLISH)

1. Susmita Chetia

Assamese Teacher

Department of Assamese

Karmashree Hiteshwar Saikia Senior Secondary School.

Sixmile, Guwahati -22

Kamrup (Assam)

2. Atom Shaphaba Mangangcha

Faculty Member

Department of English

Narayana Educational Institute (Ghy.Br.)

International Journal for Multidisciplinary Research (IJFMR)

E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

ANNEXURE: IX

CERTIFICATE OF LANGUAGE EXPERT (ASSAMESE AND ENGLISH)

যাৰ বাবে ই উদ্বেগ হব পাৰে

এইটো প্ৰমাণ কৰিবলৈ যে আমি মিছ নাৰ্গীছ আহমেদা, মিছ নুৰ ছাজিনা আকতাৰ ভূঞা, মিছ নুৰিনা ৰাহমিন বৰভূঞা, মিছ নাৰী এক্কি, মিছ নাচিকা চবনম, মিছ ৰমেনা খাতুন, মিছ ৰাছিদা খাতুন, মিছ ৰীমা বেগম, মিছ ৰজিনা আকতাৰ, মিছ ৰৌছানাৰা চুলতানা দ্বাৰা গ্ৰহণ কৰা গৱেষণা অধ্যয়নত ব্যৱহাৰ কৰিবলৈ প্ৰস্তাৱিত সজুলিটো অসমীয়াত অনুবাদ কৰিছো গুৱাহাটীৰ ৰহমান ইনষ্টিটিউট অফ নাৰ্চিং এণ্ড পাৰামেডিকেল চায়েঞ্চেছ ৰ বি. এছ. চি নাৰ্ছিং তৃতীয় বৰ্ষৰ ছাত্ৰী সকলে "অসমৰ গুৱাহাটী নিৰ্বাচিত নগৰীয়া সম্প্ৰদায়ৰ প্ৰাপ্তবয়স্কসকলৰ মাজত বহুমূত্ৰ বা মধুমেহ ৰোগৰ বিপদাশংকা আৰু প্ৰতিৰোধ সম্পৰ্কীয় জ্ঞানৰ মূল্যায়নৰ বাবে কৰা এক অধ্যয়ন " বিষয়ত ।

নাম: সুস্মিতা চেতিয়া

পদবী: বিষয় শিক্ষয়িত্ৰী

তাৰিখ: ১০/০১/২০২৫

স্বাক্ষৰ:

ছীল: ESTD 1988 ... Six Mile, Guwahati-22

CERTIFICATE OF LANGUAGE EXPERT

(ENGLISH)

TO WHOM IT MAY CONCERN

This is to certify that research tool prepared by Miss Nargish Ahmed, Miss Nur Sajina Akter Bhuyan, Miss Nari Ekke, Miss Nurina Rahmin Barbhuiya, Miss Nasika Sabnam, Miss Romena Khatun, Miss Rashida khatun, Miss Rima Begum, Miss Rozina Aktar, Miss Rousanara Sultana, B. Sc Nursing Student of Rahman Institute of Nursing and Paramedical Sciences, Guwahati - 27, Assam, (under Srimanta Sankardeva University Health Sciences) in English has been validated by undersigned and the language of the tool is found to be appropriate. They are hereby authorized and can proceed with the tool and conduct the study for dissertation titled "A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati."

Place –

Date -

Signature of the expert—

Full Name – ATOM SHAPHABA MANGANGCHA

Designation- FACULTY., DEPT. OF ENGLISH

Seal –

Atom Shaphaba Mangangcha
Faculty Member
Department of English
Narayana Educational Institutions (Ghy. Br.)

ANNEXURE: X

LETTER SEEKING PERMISSION FROM PRINCIPAL TO CONDUCT THE STUDY

To,

The Principal

Rahman Hospital's College of Nursing

(Under Rahman Institute of Nursing and Paramedical Sciences)

Radhanagar, Guwahati, Assam.

Subject: Permission to conduct a research study.

Respected Ma'am,

With reference to the subject cited above, We Miss Nargish Ahmeda, Miss Nari Ekke,Miss Nur Sajina Akter Bhuyan, Miss Nurina Rahmin Barbhuiya , Miss Nasika Sabnam, Miss Romena Khatun, Miss Rashida Khatun , Miss Rousanara Sultana, Miss Rima Begum ,Miss Rozina Aktar, the students of BSc (N) 3rd year of Rahman Hospital's College of Nursing (Under Rahman Institute of Nursing and Paramedical Sciences) have to submit a project to Rahman Hospital's College of Nursing as a partial fulfilment for the award of BSc Nursing course.

The topic chosen for our research study is titled as **"A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in a selected urban community".**

We humbly request you to kindly grant us permission to conduct this research study, we shall be grateful to you for your kind consideration.

Thanking you,

Yours sincerely,

Miss Nargish Ahmed,

Miss Nari Ekke

Miss Nur Sajina Akter Bhuyan

Miss Nurina Rahmin Barbhuiya

Miss Nasika Sabnam

Miss Romena Khatun

Miss Rashida Khatun

Miss Rousanara Sultana

Miss Rima Begum

Miss Rozina Aktar

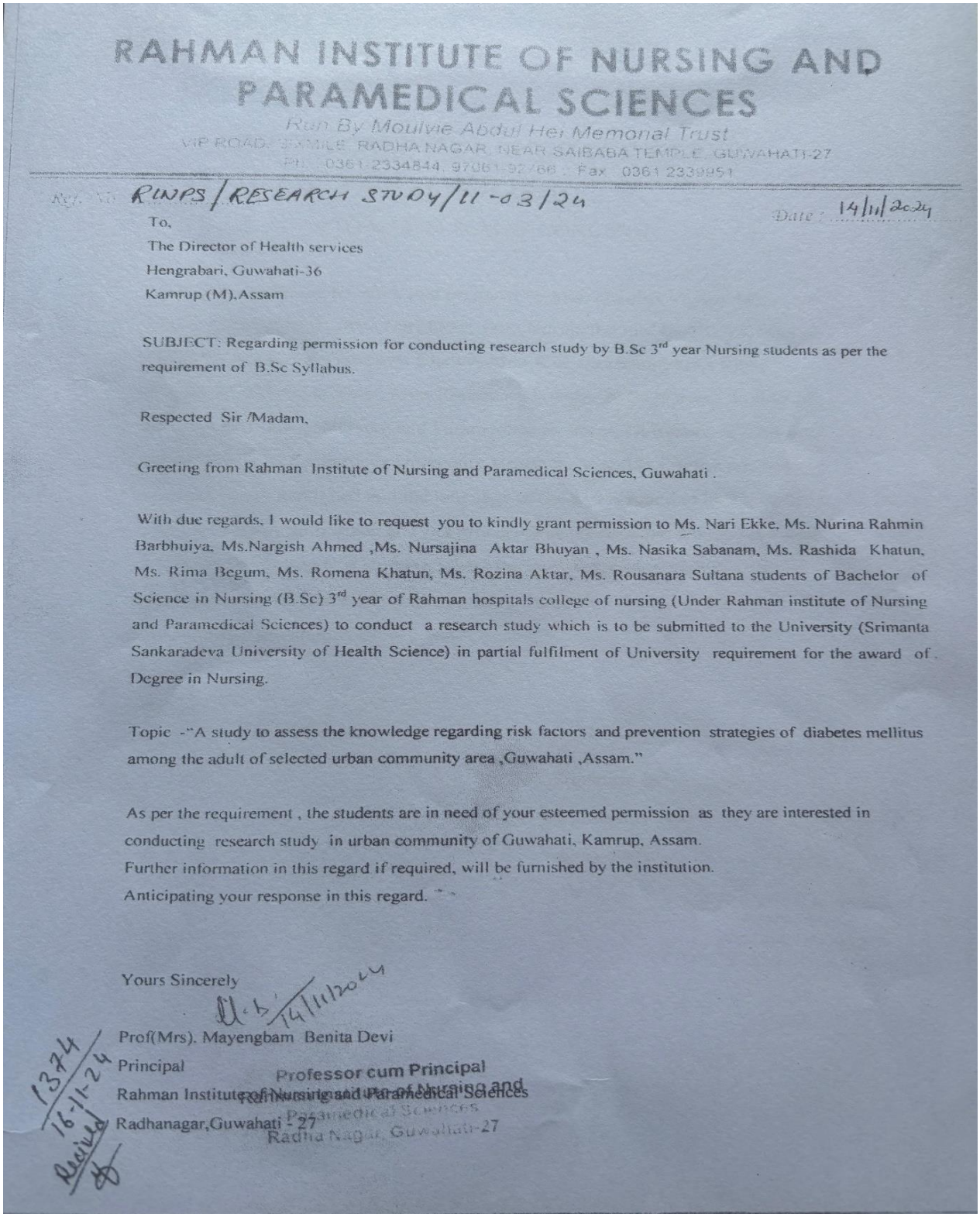
Signature of Principal: 21/2/2025

Seal:

Professor cum Principal
Rahman Hospitals College of Nursing
(Under Rahman Institute of Nursing and
Paramedical Sciences)
Radha Nagar, Guwahati-27

ANNEXURE XI

LETTER SEEKING PERMISSION FROM CONCERNED AUTHORITY TO CONDUCT THE STUDY.



RAHMAN INSTITUTE OF NURSING AND PARAMEDICAL SCIENCES

Run By Moulvie Abdul Hei Memonal Trust

VIP ROAD, 3RD MILE, RADHA NAGAR, NEAR SAIBABA TEMPLE, GUWAHATI-27

PH. : 0361-2334844, 9706192768, Fax : 0361 2339951

Ref. No. RINPS/RESEARCH STUDY/11-03/24 Date : 14/11/2024

To,
The Director of Health services
Hengrabari, Guwahati-36
Kamrup (M), Assam

SUBJECT: Regarding permission for conducting research study by B.Sc 3rd year Nursing students as per the requirement of B.Sc Syllabus.

Respected Sir /Madam,

Greeting from Rahman Institute of Nursing and Paramedical Sciences, Guwahati .

With due regards, I would like to request you to kindly grant permission to Ms. Nari Ekke, Ms. Nurina Rahmin Barbhuiya, Ms.Nargish Ahmed ,Ms. Nursajina Aktar Bhuyan , Ms. Nasika Sabanam, Ms. Rashida Khatun, Ms. Rima Begum, Ms. Romena Khatun, Ms. Rozina Aktar, Ms. Rousanara Sultana students of Bachelor of Science in Nursing (B.Sc) 3rd year of Rahman hospitals college of nursing (Under Rahman institute of Nursing and Paramedical Sciences) to conduct a research study which is to be submitted to the University (Srimanta Sankaradeva University of Health Science) in partial fulfilment of University requirement for the award of Degree in Nursing.

Topic -"A study to assess the knowledge regarding risk factors and prevention strategies of diabetes mellitus among the adult of selected urban community area ,Guwahati ,Assam."

As per the requirement , the students are in need of your esteemed permission as they are interested in conducting research study in urban community of Guwahati, Kamrup, Assam.
Further information in this regard if required, will be furnished by the institution.
Anticipating your response in this regard.

Yours Sincerely

14/11/2024

Prof(Mrs). Mayengbam Benita Devi
Principal
Rahman Institute of Nursing and Paramedical Sciences
Radhanagar,Guwahati - 27

Professor cum Principal
Rahman Institute of Nursing and Paramedical Sciences
Radha Nagar, Guwahati-27

13774
16-11-24
Received

ANNEXURE : XII

ETHICAL APPROVAL LETTER

Institutional Ethics Committee Of Rahman Hospitals Pvt. Ltd. And Its Allied Educational Institutions

VIP Road, Sixmile, Guwahati-22
Phone: 0361-2334844, 9954345345
Regd. No: **EC/NEW/INST/2023/3359**

Chair Person:
Dr. Putul Mahanta

Member Secretary:
Prof. U. C. Dutta

Clinician:
Dr. Mustafa I Chandshah

Dr. Ajaya Mahanta

Dr. Monoj Kr. Saikia

Basic Medical Scientist:
Prof. Mayengbam Benita Devi,

Dr. Ruhul Amin

Social Scientist:
Nurul Islam Laskar

Legal Expert:
Pradip Kumar Kalita

Lay Person:
Anil Kumar Sarma

Other Supporting Staff:
Md Rejaul Islam

Ref. No: IEC/RHPL/2025/02-13 *Date:* 22/02/2025

Protocol title: "A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati. "

Principal investigators: Ms. Nargish Ahmeda , Ms. Nari Ekke, Ms Nasika Sabnam, Ms Nursajina Aktar Bhuyan, Ms Nurina Rahmin Barbhuiya, Ms Rima Begum, Miss Rashida Khatun, Ms Romena Khatun, Ms Rozina Aktar, Ms Rousanara Sultana.

As per the decision of the Institutional Ethics Committee of Rahman Hospitals Pvt. Ltd. and its Allied Educational Institutions held on 22/02/2025 the protocol title: **"A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati "** Submitted by Ms. Nargish Ahmeda , Ms. Nari Ekke, Ms Nasika Sabnam, Ms Nursajina Aktar Bhuyan, Ms Nurina Rahmin Barbhuiya, Ms Rima Begum, Miss Rashida Khatun, Ms Romena Khatun, Ms Rozina Aktar, Ms Rousanara Sultana. The protocol was through examined by all the scientific members of Institutional Ethics Committee of Rahman Hospitals Pvt. Ltd. and its Allied Educational Institutions in the meeting.

Institutional Ethics Committee of Rahman Hospitals Pvt. Ltd. and its Allied Educational Institutions recommended the protocol for the period of one year.

Member Secretary
Institutional Ethics Committee
of Rahman Hospitals Pvt. Ltd.
and Its Allied Educational Institutions
Regd. No. EC/NEW/INST/2023/3359

Prof. U.C. Dutta
Member Secretary

INSTITUTIONAL ETHICS COMMITTEE * APPROVED * EC/NEW/INST/2023/3359

E-mail: rhplethicscommittee@gmail.com Website: www.rahmanhospitals.com

ANNEXURE : XIII

WRITTEN INFORMED CONSENT FORM IN ENGLISH AND ASSAMESE

Study Name: A study to assess the knowledge regarding risk factors and prevention of Diabetes Mellitus among the adults in selected urban community, Guwahati.

PLEASE READ THIS DOCUMENT CAREFULLY. YOUR SIGNATURE IS REQUIRED FOR PARTICIPATION. YOU MUST BE AT LEAST 20 YEARS OF AGE TO GIVE YOUR CONSENT TO PARTICIPATE IN RESEARCH. IF YOU DESIRE A COPY OF THIS CONSENT FORM, YOU MAY REQUEST ONE AND WE WILL PROVIDE IT.

Description of the Study: The study will be conducted among common people under the age 20-59 years in selected urban community, Guwahati. We use demographic data and knowledge assessment questionnaires.

Nature of Participation: Voluntarily

Purpose of the Study: The purpose of the study is to assess the knowledge regarding risk factors and preventing strategies for Type 2 Diabetes Mellitus.

Possible Risks: In this study there is no possibility for any kind of risk.

Possible Benefits: The study will help the community to gain knowledge regarding risk factors and prevention of Type 2 Diabetes Mellitus.

Confidentiality: The data gathered and information given by the participants will remain absolutely confidential and will be used only for the purpose of the study**.**

Opportunities to Question: Participants can freely ask questions related to study with out any hesitation in this study.

Withdrawal at will: Participants can withdraw from the study at any time and it is voluntary during our research study**.**

Opportunities to be informed of Results: Participants are given the opportunity to be informed about the results of the study**.**

Signature of Participant

Signature of Person Obtaining Consent

Dated this ……day of (month) ..…….., 20 ……..

সম্মতি প্র-পত্র

(অংশগ্রহণকাৰীৰ নাম) এই গবেষণাত অংশগ্রহণ কৰিবলৈ সিদ্ধান্ত বা অনুমতি দিলো। গৱেষকে কৰিব খোজা অধ্যয়নৰ বিষয়ে আতিগুৰি মাৰি বুজাই দিয়াৰ লগতে মোৰ প্রশ্নবোৰৰ যথোচিত উত্তৰ দিছে। মোক কি কি প্রশ্ন শুধিব সেয়া মই জানিব পাৰিছো। মোৰ বহুমূত্র বা মধুমেহ প্রকাৰ 2 ৰোগৰ বিষয়ে অধিক তথ্য সংগ্রহ কৰাটোৱে যে এই গৱেষণাৰ উদ্দেশ্য সেয়া মই বুজি পাইছো। মই এই গৱেষণাত যোগদান নকৰিলে কোনো শাস্তিমূলক ব্যৱস্থা লোৱা নহ'ব বা মোৰ কানো অধিকাৰ খর্ব কৰা নহ'ব। মই ..... (অংশগ্রহণকাৰীৰ নাম) এই গৱেষণাত এবাৰ যোগদান কৰাৰ পিছতো যিকোনো সময়তে উক্ত গৱেষণাৰ পৰা বিৰত থাকিব পাৰিম।

তলত দিয়া মোৰ চহীৰে উক্ত গৱেষণাত অংশগ্রহণ কৰিবলৈ মই সম্মতি জনালো।

অংশগ্রহণকাৰীৰ চহী.....

অংশগ্রহণকাৰীৰ নাম.....

গৱেষকৰ চহী.....

তাৰিখ.....