Comparison of Diabetes Knowledge and Self-efficacy in Diabetes Management Among the Urban People and the People from Garo Tribe in Mymensingh Division

By

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A thesis submitted to the Department of Pharmacy in partial fulfillment of the requirements for the degree of
Bachelor of Pharmacy (Hons.)

Department of Pharmacy
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Declaration

It is hereby declared that

1. The thesis submitted is my/our own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
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Approval

The thesis/project titled "Comparison of Diabetes Knowledge and Self-efficacy in Diabetes Management among the Urban People and the People from Garo Tribe in Mymensingh District" submitted by Md. Rafayat Hossain (14346016) of Summer, 2014 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Bachelor of Pharmacy on August 22, 2019.

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Ethics Statement

The study does not involve any kind of animal trial and human trial.

Abstract/ Executive Summary

The aim of the study is to compare diabetes knowledge within Garo and urban people, to recognize the fundamental needs and to think about the determinants of the knowledge score among Garo and nearby individuals of Mymensingh division. This survey included 173 adults with T2D. Over 60% of the members were male and 30% were female, 3.40% urban and 1.17% tribal had no essential tutoring, 33% of the respondents proclaimed a family income comparable to 5000-10,000 Taka for each month and almost 42.35% - 45.45 % had been experiencing diabetes for 1.1-5 years. Mean and S.D. of self efficacy was 58.19 ± 13.69 and 59.91± 12.61 for both urban and tribal individually. Their p-value for MDKT knowledge test was 0.0000079. The outcomes of the study give a view of low level of diabetes knowledge and attitudes among Garo and local Urban people. Also poor family income and absence of self-efficacy are crucial indicators of knowledge deficiencies. By creating awareness and providing high caliber of diabetes self-administration training line-up will give advantages and influence considerably on both urban and Garo patients

Keywords: Michigan diabetes knowledge test; Type 2 diabetes; Self-efficacy; Prevalence of diabetes; Tribal; Mymensingh.

Dedication

Dedicated to all the diabetes patients who had died due to diabetes and who are still surviving with diabetes throughout the world.

Acknowledgement

I might want start by expressing gratitude toward the All-powerful Allah, our maker, an amazing wellspring and quality, our insight and shrewdness, for the favors and benevolence. All gestures of recognition to the All-powerful Allah and I might want to offer my thanks for gifting me with massive persistence, quality, thankfulness and help when crucial to finish this venture. This research work would not have been finished without the help of the individuals who are appreciatively perceived here.

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Table of contents

List of Tables

List of Figures

List of Acronyms

MDKT	Michigan Diabetes Knowledge Test
T2D	Type 2 Diabetes
HbA1c	Glycated Hemoglobin A1c Testing.

Chapter 1

Introduction

1.1 Background

Globally an extensive public health problem related with mortality and morbidity is diabetes mellitus. A group of metabolic disorders specified by chronic excessive glucose level in blood or hyperglycemia with disruption of carbohydrate, fat and protein metabolism, following heterogeneity of etiologies (Imtiaz et al., 2016). World Health Organization predicted that there will be 79.4 million diabetic patients by the year 2030. Imprecise diet and inactivity throughout the whole day causing the trend to be increased. In total 45 tribal groups in Bangladesh represent solely 1% of the entire populace of the country. They are Chakma, Marma, Khasia, Jaintia, Santal, Garo, Manipuri, Tripura, Tanchangya, Mro (Mru or Moorang). The substantial ethnic group is Chakma residing of 4,44,748 persons and the second prodigious group is Marma consisting of 2,02,974 people. Most of them live in hilly area but a few live in plain land. Primeval cultivation and diversified way of life make them a vital focal point of research. They have steadily turned out to be utilized to Urban sustenance. Throughout the years, relocation and cultural assimilation of ethnic groups have achieved considerable changes in their ways of life and esteem frameworks. These ethnic groups are explicitly helpless and vulnerable to various types of health problem due to lack of accessibility in advanced technology for diagnosis whereas poverty is the chief reasons. Rough pervasiveness of T2D has been observed to be 6.6% and IFG 8.5% among the tribal people. It is usually said that tribal people are sedulous by nature and do arduous job and they should not be prone to have diabetes but the questions emerge about their dietary propensities. This is a territory which should be explored. Absence of data, different cultural practice and reliance on nature are the boundaries of research. Epidemiological examination

on diabetes among tribes living in the plain land and also hilly area is direly expected to decide the contemporary circumstance. Collaboration of tribal leaders can basically make this research fruitful.(“Diabetes and metabolic research,” 2015). Lately, it is reported that myriads number people are enlisted at diabetes registration center in local health care services. Diabetes has been observed to be increasingly prevalent in urban than rustic in populace. Because of governmental negligence, different cultural beliefs, social attitude and norms tribal people throughout Bangladesh are ignorant about basic health care facilities. Subsequently, expanding inconsistencies in wellbeing of tribes, when contrasted with general people living in the same territory, are obvious. Determining the state of health of tribal population and the condition of their current diseases will not only give accurate quantitative statistics but also give a clear perspective and instructions to the health authority where to work on priority basis. (Abdullah, 2011).

1.2 Introduction of Bangladeshi Tribal

A tribe is regarded, archaeologically or developmentally, as a societal group present before the progress of, or external of, states. There are various ethnic and minor groups in Bangladesh living throughout the country (Abdullah, 2011). The ethnic individuals of Bangladesh talk about to inherent indigenous minorities in south-eastern, northwestern, north-central and north-eastern regions of the country. These areas consist of the Chittagong Hill Tracts, Sylhet Division, Rajshahi Division and Mymensingh District. The total population of indigenous ethnic minorities in Bangladesh was once estimated to be over 2 million in 2010. In fact, 45 smaller organizations of indigenous people protecting about two percent of the total population have been residing in distinct pockets of the hilly zones and some areas of the plane lands of the country. The tribal population consisted of 897,828 persons, at the time of the 1981 census. The portion of the innate people in the 64 regions fluctuates from significantly less than 1% in lion's share of the regions to 56% in Rangamati,

48.9% in Kagrachari and 48% in Bandarban in the Chittagong Slope Tracts. (Vrana and Christandl, 2015). Most of the social gathering populace (778,425) lived in rustic settings, any place a few working on moving developments. They contrasted in their social association, wedding traditions, birth and demise rituals, nourishment, and diverse social traditions from the people of the rest of the nation. They communicated in Sino-Tibetan language dialects. Inside the mid-1980s, the extent appropriation of social gathering populace by confidence was Hindu twenty-four, Buddhist forty-four, Christian thirteen, et al nineteen. The four biggest clans were the Chakmaas, Maarmas, Tiperas, and Moorang. The clans thought about intermix and will be recognized from one another a great deal of by varieties in their figure of speech, dress, and traditions than by social gathering union. The greater part of the clans lives underneath close to home pay and don't pay a ton of on human services. they need normal propensity to underneath report their medical issue and among them the speed of usage of open. Most of the tribes live below the poverty level and don't pay a lot of on health care. They need a common tendency to below report their ill health and among them, the speed of utilization of public health services is incredibly low. These social group communities have high maternal mortality and fatality rate with a high prevalence of infectious diseases like malaria, respiratory disorder, and T.B. There are historical reasons for their poor economic and social standing and their rights and demands are more and more neglected in policy discourses.

1.3 Concept of Health

WHO outlined health as a condition of total dexterous, psychological and social well-being.(OMS, 2014). Moreover, in different culture their medical identification and observation is different. Some researchers say that health is important issue for every culture and clinical concept have to be clarified within community (Mishra, Kusuma, & Babu, 2013). As a social theory and as a component of social association, the importance of 'wellbeing'

unendingly changes and modifies itself to changes inside the more extensive society. Individuals living in social gathering space are defenseless to awfulness in light of low financial standing and underprivileged conditions which are unhealthy and connective to infections. Low degrees of mindfulness and absence of access to defensive and healing parts of consideration intensify the case. It is theorized that the vagrant network has been regularly changing at a specific pace together with their ideas of wellbeing and awfulness. The alteration inside the environment and eco-arrangement of social gathering people exacerbated with interruption of non-inborn parts into social gathering space assume a noteworthy job inside the changing social gathering quality, worth framework and perspective.

1.3.1 Perceptions of Health Among Garos

Each culture has its particular various explanations of wellbeing and awfulness. An individual is considered as sound on the off chance that one is prepared to attempt to take the necessary steps expected according to sex and age. The physical appearance of body infers wellbeing basically as great or perilous. Fever is that the typically referred to model demonstrating perilous wellbeing. With regards to the regular healers, pulse, heartbeat, urine, and so on demonstrate whether one is sound or unwell. Shortcoming of the body conjointly shows neurotic state. Alcoholic admission is figuratively referred to as Partner in nursing un-wellbeing in their locale, because of its results on family and network; it's conjointly guaranteed that liquor admission winds up in a wide range of ailments. From the key source talks with, it's unveiled that wellbeing isn't something else than this state of the body. 'Wellbeing' implies that the life, and it is never again combined with the psychological or social condition. When it had been asked anyway their wellbeing was, the dominant part study members previously mentioned that their wellbeing was reasonable as that they had no fever. The nonattendance of any ailment or ailment is named practically as great wellbeing; if fever is blessing inside the body, it is thought of that wellbeing isn't reasonable. Therefore,

the develop of wellbeing alludes exclusively to physical wellbeing. Comprehensively, the develop of wellbeing and un-health shifted with regards to the sex because of the body of the body, furthermore to sex related jobs in the public eye. As per them, un-wellbeing is ascribed to very one reason and, thus, they get varying kinds of treatment from totally various sources, looking on the kind of un-health (Mishra et al., 2013).

1.3.2 Concepts of Illness Among Garos

The Garo spoke to medical issue as seeming exhausting, frail and turning dull, absence of longing for, sluggishness, the weakness to run, the need to talk, astounding developments, sleepiness, indented eyes, pale and dry eyes, torment inside the body, and so forth. Changes inside the shade of discharge and speedier heartbeat rates conjointly infer neurotic state. The manifestations of wretchedness for children don't appear to take nourishment, absence of intrigue live, languor, hotness of the body and continuous crying. Physical attributes like pale shade of the body, rashes on the body, extending tummy and narrowing of bottom moreover symbolize medical issue. (Mishra et al., 2013).

1.3.3 Causes of Illness and Believe of Garos

Garo saw totally various specialists and practices as reasons for medical issue. There could likewise be single or different reasons for a solitary medical issue. The reasons for disorder are condensed in three gatherings:

1.3.3.1 Mystical Supremacies as Causative Mediators

Individuals have the supposition that ailment occurs if divine beings and tribal spirits are not happy with them, and conjointly due to the hostile stare, apparitions or envy; and on the off chance that the individual is startled with stress, at that point furthermore medical issue will happen. Most are thought of to be in control of a specific amount of heavenly power. It's

accepted that children are a great deal of inclined to the hostile stare. People accept that at whatever point someone comments that the child is perfect or sound, the child in a split second creates ailment and winds up more fragile. Envy, as a kind of the hostile stare is credited to clarification for disorders, and such awfulness will exclusively be restored by the ordinary master.

1.3.3.2 Bodily and Non-mystical Powers as Causative Influences

Here, disease is clarified as being caused because of the defiance of normal laws. Assortment of physical or regular reasons for illnesses work straightforwardly on the person to give wretchedness. Whatever causes as detailed by the examined populace are as per the following:

(i) Reason of food: Sustenance that are pondered to be warm, are thought to cause maladies. It's supposed that not taking sustenance in right time prompts unsettling influence of the belly, and prompts disease. Liquor administration is reputed in show of the first reasons for sickness. All the participants told that exploitation composts and pesticides in harvesting is another driving purpose behind various ailments.

(ii) Season change: Seasonal change causes dry cough and mild cold as well as fever.

(iii) Workplace: Stressing task and in hot and cold weather like field work, farming in rain triggers bad health condition.

(iv) Daily routine: Disturbance of daily routine is believed one of the causes of illness such as improper sleeping, bathing, meals. (Balgir, 2001)

1.3.3.3 Transmissible Causes of Illness

Contacting the garments and nourishment of the debilitated individual is capably accepted to cause bound illnesses. Vectors, for example, mosquitoes and flies regularly transmit

fluctuated maladies like protozoal disease. Furthermore, to these undesirable conduct of the people is accepted to be infectious in sending the ailments. People unequivocal that human conduct that's against the social standards all things considered of the real reasons for medical issue, together with infectious ailment and elective sicknesses. Having sexual contact with partner in nursing wiped out individual winds up in medical issue. People moreover referenced that a few maladies are inherited in nature. (Mishra et al., 2013).

1.4 Garo Overview

1.4.1 Historical Background of Garo

The name is not clearly understood for the word ‘Garo’. The pioneer Tolemi who initially taken the name ‘Garo’ in two hundred AD whereas assembling data from the Patliputra. He noted the Garo mount and its residents as ‘Garoini’. A forerunner researcher garo, the ‘Gara’ or ‘Ganching’ sub-tribe to begin with acquired their referring of ‘Gara’ which name was stretched to any or all of the inhabitants of the hills and become sooner or later it changed from ‘Gara’to ‘Garo’. There are 2 fundamental corporations the various Garo, specifically, ‘Lamdani’ and ‘Achhick’. They're currently known as Garo. But, the Garo peoples don't want that they would be referred as ‘Garo’. Most of the Garo trust that the name ‘Garo’ changed into maximum in all likelihood given via the Bengalese (predominant movement Bengali talking network) and Europeans. they feel that the term is derogative in their ethnos. Typically, the Garo peoples of Bangladesh and India need to be called ‘Achie’ (mountaineer) or ‘Achick Mandi’ (hill tribe) or simply as ‘Achik’. In Bangladesh, the ‘Garo’ introduce themselves ‘Mandi’. (Muhammed, Chakma, Hossain, Hossain, & Oesten, 2011).

1.4.2 Origin of the Garo

There is little data with respect to the records and cause of the Garo. The Garo people groups will truly be recognized from the standard Urban individual's groups by their appearance. By and large, they're comparable physically the people of Thailand or the Philippines. Probably the most fundamental speculations introduced by method for ethnologists and archaeologists concerning the beginning spot of the Garo people groups expect the ensuing:

(i) The Garo are an ethnos of 'Tibet barman', of Mongolian base, and inheritor from the Chinese region of Chinghai concerning three-five thousand years past. (Kumar, Hasan, & Lslam, 2005)

(ii) The facial look of Garo is similar with the people of Assam in Indian because most the Garos came from Khasis as well as from Manipuris.

(iii) Most of the Garo thinks they come from the Garo hills of Meghalaya region of Indian. (Muhammed, Chakma, Hossain, et al., 2011)

Notwithstanding totally unique assumptions, Garo people in current years have demanded to become 'aborigine'. They are asking their constitutional right to the government as well as claimed their land. Albeit the department of forest ministry don't declare them as tribal. The forest department see them nomadic people. (Muhammed, Chakma, Hossain, et al., 2011).

1.4.3 Demography and its Distribution

The Garo throngs are congested in the broader range of in north eastern part of Bangladesh particularly in Mymensingh and Netrokona as well as in Sylhet (Muhammed, Chakma, Farhad Hossain Masum, Mohitul Hossain, & Oesten, 2011). There's no exact numbers of Garo inhabitants in Bangladesh. The subsequent table arrange for an outline of Garo residents in Bangladesh.

Table 1 . Overall scenario of Bangladeshi Garo

Year	Inhabitants	Reference
1991	68210	Population Survey 1991 (BBS 1991)
1993	102000	Gain paper 2005
1997	105000	Sangma paper 2010
1997	100000	Burling paper 1997
2005	120000	Lewis paper 2009
2010	125000	Joshua project paper 2011
2010	130000	Drong paper, 2004

1.4.4. Kinship Organization

Garo particularly live in matrilineal society. Cooperative family dwelling array survives in Garo civilization. Nowadays, the arrangement is dynamical to relative's scheme because of the journey to the municipalities for pursuit of better environments and good schooling. For the most part, a Garo people group is separated into three Chatchi (i.e., gatherings); strikingly, Momin, Marak and Sangma. Momin group was formed by the reason of wedding. It is said there are many subgroups of Garo community. Sub divided groups are particularly Rema, Chisim, Nokrek and Toju. In their family babies born belongs to their mother. Ma Chong plays crucial roles in Garo life. If anyone doesn't have any female baby, then Ma

Chong determines the inheritor of the properties. There are tiny teams regionally called Mahari. Mahari includes only the foremost closely connected folks among constant Ma chong wherever familiarity and intellect of communal group is higher. Being exogamous, they can marry their cousin as well, Mahari area unit associated with one another.(Muhammed, Chakma, Farhad Hossain Masum, et al., 2011).

Table 2 The Clan Groups of Garo

Theories	Reference
The chief groups are; Ganching, Ruga, Chibak Mathabenng, Akawe Machi and Dual.	Playfair 1998
There are two groups Shira and Areng (1998).	Chowdhury 2007
The most of the Garos belongs to two groups That is Sanga and Maarak	Khalequ 1983
Recent research says there are five communities Common within Garo communal they are Abetty, Sira, Momin, Marak and Sangma.	Das & Islam 2005

1.4.5 Socio Economic Status

Most of the Garos do agricultural work. Garo community prefers to work agricultural arduous job and most importantly farming and landing. Long time ago they had their own land. However currently solely ten to 12 tone system of people have land ownership. According to

literature Garo lost their land just because of their poor education, illiteracy, political turmoil, not sustainable environmental condition, lack of establishment. The Garos still need to be improved in technological amelioration, and economical condition (Muhammed, Chakma,Farhad Hossain Masum, et al., 2011). As a result they get few wages from their landlord nowadays. Thus they are moving towards the urban area to get professional jobs in government, private sectors like garments industry, police, military forces, beauty parlors and so on.

1.4.6 Schooling

The absolute achievement rate of the examination space is 81.75%. This is a superior situation than that of the land populace. This incorporates a brilliant effect on their life vogue and wellbeing (Sarker & Ghani, 2009).

1.4.7 Livelihood and Salary

The study discovered that 51.95% of the respondents are ranchers, 39.08% administration holders, 5.39% are businesspeople and a little portion (1.99%) win its living as consistently workers. The vast majority of supplier holder's canvases in unmistakable NGOs and schools performed by means of the Christians. Month-to-month benefits of 51.03% of the Garos inside the watch region is tk. 2000-3000, which isn't adequate for well upkeep of a hover of relatives and this terribly affects their living stylish and redesign of wellbeing (Sarker & Ghani, 2009).

1.4.8 Nutrition Practice

The nourishment propensity for the Garos varies from various networks in view of their own old traditions. The Garos eat sustenance gathered from common sources free from any very

contaminated. They cook nourishments in a direct and simple methodology. They don't heat up an unreasonable measure of nor utilize abundance flavors though change of state curries. They are doing not utilize unnecessary greasy oils, rather for the most part cook sustenance while not oil and flavors. Thus, supplements or sustenance estimations of their nourishment don't appear to be crushed in their difference in state strategy. Garos eat a more extensive style of nourishment than a few of their closest neighbors. Their staple oat nourishment is rice. They also eat fish, meat, millet, maize and shifted vegetables just as bamboo shoots, mushrooms, Basak and neem tree leaves. They back goats, pigs, fowls and dairy animals and relish their meat significantly. For the most part, they eat meats of grouped creatures and winged animals, anyway the meat of ducks, cocks (fowl), bunny and even-toed ungulate are frightfully most loved to them. Everybody relishes turtles, frogs, snails, eels and little shrimp shell and a lot of others that are out there. Dry fish is that the most loved article of the Garos. They utilize a kind of hydroxide in curies, that they get by consuming dry things of plantain streams or youthful bamboos and differently getting their cinders incite an item they choice 'kharichi'. No oil, garlic, ginger, onion or different flavors are required once kharichi is encased inside the curry. The Garos accept that kharichi is valuable for customary course of blood and it shields them from totally unique gastro-intestinal inconveniences, stomachal ulcers, weight, heart sicknesses and polygenic ailment. It was found out that home-made wine drinking could be a typical advancement inside the Garo people group and loads of them zone unit habituated to drinking exorbitant measure of this beverage. This can be not a legit highlight in pertinence wellbeing the board rehearses as intemperate liquor is unsafe for liver. Truth be told, some Garos experience the ill effects of various sorts of sickness. Be that as it may, the rate of liver maladies among them isn't that restricting. This could result to their higher nourishment propensities.

1.4.9 Smoking

The vast majority of the Garos (57.92%) zone unit habituated to smoking tobacco (of them 62.50% territory unit male and 53.14% female). This implies the amount of male smokers is over the females. Smoking is a great deal of normal among the more seasoned guys, anyway this was observed to be less among the proficient and youthful Garos.

1.4.10. Garo Health Care Providers and Treatment

The vast majority of the Garo antiquated experts are estimated proficient, anyway none of them was found to have teaching method. Be that as it may, exclusively the matured and expertly rehearsed Garos apply their old arrangement of treatment. Inside the technique for treatment, the Garo antiquated healers gather meditative plants and elective fixings from the wilderness and strategy them in their own gratitude to use as remedy for the ills of the beset people. As Partner in nursing necessary a piece of the treatment a few of them blend allotment of wilderness drugs with ceremonies and penances to actuate alleviation from the scourge of malice spirits. For the most part, Garos are estimated sound people, their general wellbeing the executive’s practices square measure moderately better and their normal life expectancy is longer than the regular Urban people of Bangladesh. They're less oft assaulted by maladies or wretchedness than the ground people of the Urban people group. Garos' savvy sustenance propensity (they eat huge amounts of unpracticed vegetables and organic products from normal sources, that square measure free from concoction composts and pesticides), propensity for doing what's necessary physical work, support of non-open and barometrical cleanliness and their spotless living condition made in unadulterated and contemporary air and, most importantly, their cognizance concerning the board of wellbeing against sicknesses and their firm religion in characteristic methods for mending abuse common substances encourage them keep solid and glad (Sarker & Ghani, 2009).

1.5 Rationale of the Study

It has frequently been said that tribes in Bangladesh have more dreadful health condition than other Bangladeshi natives, however, no figure have been gathered to affirm these cases. The analysts needed to build up whether it is essentially an issue of tribes being more unfortunate than other Bangladeshi—destitution being notable as a reason for diseases—or in the case of being indigenous is, in itself, a health hazard. If a study's motto is to govern the disease's upcoming hindrance approaches, then the primary step is to address current facts. The collection of diabetes information, analysis of major risk factors, and collection of data about status and range of diabetes - related knowledge, awareness, practices of personal care, and treatment facilities for patients in various socio - economic classes and levels of education, together with regional variables, is therefore essential. Also in order to attract the attention of health - care professionals and government health - care officers to take the necessary steps and implement those strategies with a view to reducing the increasing rate of diabetes mellitus, its complications, mortality, morbidity and ensuring a healthy life for the mass population of Bangladesh. Garo is one of the most burdened and helpless indigenous networks among 70 unmistakably conspicuous indigenous residents in Bangladesh. They have been minimized via land snatching, dangers, removals and killings to such a degree, that their reality in Bangladesh is as of now jeopardized. An investigation has as of late been led to assess the issues and needs of Garo and to start advancement mediation to improve their lives.

1.6 Aim of the Study

The actions employed by the NGOs in term of improvement of health for ethnic peoples, have miscarried to endure much fruit, as ethnic peoples had no access or connection in the health planning and program formulation of the organizations. In some extents health improvement events have generated opposing impression, where the plan remained too far

detached from the indigenous communal, cultural and natural condition. The cause of the evaluation paper is to accumulate the current data and evidence on the prevalence, hazard factors, complications, knowledge level, self-management and cure of diabetes mellitus among the rural people, metropolis dwellers and ethnic minorities of Bangladesh to guide the future prevention policies and endorse the direction of future lookup strategies and efforts.

1.7 Objectives of the Study

There are quite a few targets of this study. These are following:

a. To gather the contemporary information regarding the prevalence and knowledge of diabetes within Garo tribes most noticeably current risk factors of diabetes in Bangladesh.

b. To evaluate and contrast the context of expertise assessment, self-management and dealing of diabetes mellitus amongst the rural people, town inhabitants and ethnic subgroups of Bangladesh.

c. To recognize and report the information and proof concerning the most dominant factors and motives in the back of negative information of diabetes, depressing self-management issues, wrong and insufficient cure amenities for grabbing the attention of the health care professionals and government health care frontrunners.

d. To discover out the strengths and boundaries of the research papers and reviewed articles.

e. To guide the plan of upcoming exploration

f. To collect the authenticities of the most newly tossed anti-diabetic drugs in Bangladesh.

g. To inform the feasible preferences of insulin.

Chapter 2

Methodology

2.1 Literature Review

2.2 Cultural & Socio Economic Factors in Health, Health Services and Hindrance for Endemic Folks

In 2019 Md. Rakibul Islam and his coworkers on the paper “Cultural and socio-economic factors in health, health services and prevention for indigenous people” showed that indigenous people over the globe ability a great deal of wellbeing related issues when contrasted with the populace at monstrous. Indigenous individuals wherever the world are generally commanded, disaffiliated and segregated, that is explicitly and verifiably influencing their wellbeing status conjointly. Studies uncover that ethnic populaces ability extra wellbeing associated issues and disparities, when contrasted with their ordinary populaces. Indigenous people groups' wellbeing upstanding and results are encompassed inside the specific financial, political and social settings, that they're alluded to in. Close by some normal variables, indigenous people groups are covered with unequivocal elements that expected individuals experience, for example, indigeneity, pioneer and post-frontier ability, rurality, absence of governments' acknowledgment so on. Furthermore, indigenous people round the world ability various medical problems in light of their changed financial and social foundations. Then again, conceptive wellbeing remaining of Garo local people in Bangladesh is more advantageous than the Bengali populace at gigantic. This can be a direct

result of some positive factors that are instrumental inside the network. Exercises gaining from the national and worldwide exchanges, we could reason that non common, physical, mental, passionate, social, financial, social and ecological variables should be consolidated into the autochthonic wellbeing plan to accomplish their wellbeing improvement. In doing subsequently, the state governments should have a positive point of view towards autochthonic wellbeing. (Islam & Sheikh, 2019)

2.3 The Effects of Ill Health on Livelihoods of Extremely Poor Tribal in Bangladesh

In 2013 an organization named “Shiree” studied and showed in its paper “The effects of ill health on livelihoods of extremely poor Tribal in Bangladesh” that the predominance pace of medical issue among extraordinary poor ancestral is amazingly high. They\'re the minority inside the examination space, yet dwarf the mass as far as general unwellness withdrawal rates, especially irresistible maladies. The ailments they\'re helpless against are affected by various factors just as poor living conditions, remoteness, poor sustenance, low salaries, low degrees of training and wellbeing mindfulness, and hesitance to look for viable treatment in beginning periods of infection. Absence of access to government wellbeing administrations is an especially serious issue. The restorative workers available to them had frightfully confined instructing and there was a general absence of trust in government wellbeing administrations – that was normally even. The intensity of incredibly poor tribal to move out of impoverishment with the help of monetary benefit creating exercises relies upon keeping up physiological state and dodging the types of medical issue which will cause greater impoverishment. Improved wellbeing mindfulness and information and clear access to sensible, quality wellbeing administrations, would improve the strength of the exceptional poor, and scale back the negative effect of medical issue on jobs. Current header instruments, similar to trouble offers of gainful resources, taking advances on wages, and high-enthusiasm

acquiring was a run of the mill explanation for impoverishment. the supply of different ways that of ensuring profitable resources is so vital for poor people. (Shiree 2013).

2.4 Awareness, Treatment, and Control of Diabetes in Bangladesh: A Nationwide Population-Based Study

In 2015 Md. Shafiur Rahman and his partners depicted that people with no guidance, lower money related standing, and people who lived in denied zones the extent that preparation and financial profile were found lacking of ID, treatment, and the administrators of diabetes. The revelations from our examination recommend that extensive enhancements of diabetes disclosure and treatment are required in Bangladesh particularly among denied masses. These will be dealt with by (I) changing the prosperity structure grounded on ailment issue, the govt. of Bangladesh should give prime need to NCDs particularly diabetes impediment and the board in their prosperity movement programs; (ii) completing comprehensive security or elective danger pooling instruments in prosperity financing structure to certify access and reasonable watch over all tenant from denied to rich; and (iii) making diabetes care, dynamic lifestyle and dietary penchants through all around arranged state supported guidance and wide correspondences fights. (Rahman et al., 2015).

2.5 Global Estimates of Diabetes Prevalence for 2013 and Projections for 2035

In 2014 L. Guariguata illustrated statistics on the prevalence of diabetes in different countries based on income. Prevalence of T2D and quantities of people with diabetes contrast extensively by World Bank exquisite procuring gathering. Most by far of people with diabetes are typically low-and center pay nations. Once observed crosswise over pay gatherings, the best will increment in people with diabetes over after twenty years can parallel increments inside the grown-up populace. Notwithstanding, for each extent increment

inside the grown-up populace, the corresponding increment inside the quantities of people will be greater and particularly for creating nations. The best relative increment inside the scope of grown-ups with diabetes is normal in low-pay nations (108%), trailed by lower center salary nations (60%), higher center pays nations (51%), and in the long run high-pay nations (28%). Diabetes commonness will increment with age over all districts and monetary profit bunches the best age-explicit pervasiveness is in people 60–79 years matured (18.6%), however the greatest quantities of people with diabetes are inside the 40–59 years' kin (184 million). These examples are foreseen to proceed over successive twenty years. The extents of grown-ups with diabetes underneath the age of fifty change by district and profit with the best extent in Africa area (61%) and low-salary nations (67%); however there\'s crucial cover inside these figures as most low-pay nations are in the Africa locale. The best corresponding increment inside the scope of people with diabetes by age section is foreseen to happen in individuals somewhere in the range of sixty and seventy-nine years of age. (Guariguata et al., 2014).

2.6 IDF Diabetes Atlas: Global Estimates of Diabetes Prevalence for 2017 and Projections for 2045

In 2018 N.H. Cho and his coworkers showed in their paper that the predominance of diabetes in grown-ups matured 18–99 years was required to be 8.4% in 2017 and expected to ascend to 9.9% in 2045.The high commonness of diabetes has crucial social, money related and improvement suggestions especially in low and center salary nations. There\'s a dynamically basic needing for governments to execute arrangements to diminish the risk factors for sort 2 diabetes and gestational diabetes, and certification appropriate access to treatment for all people living with diabetes. The critical holes in data and in information quality concerning the weight of diabetes should be exact in order to create arrangement without a doubt. (Cho et al., 2018).

2.7 Prevalence of Diabetes Mellitus and Its Risk Factors Among Permanently Settled Tribal Individuals in Tribal and Urban Areas in Northern State of Sub-Himalayan Region of India

In 2014 Dhiraj Kapoor and his colleagues shows in that urbanization as a process and at the same time ever-changing the day-to-day means within the sort of increment in fat utilization, physical idleness, and medication maltreatment with related danger of improvement of unending ailments like cardiovascular illness and DM. It's an explanation for worry in creating nations since it shares a major extent of the worldwide populace so the dismalness and mortality because of incessant maladies. Effect of a urban surroundings onto the way of life example was contemplated and demonstrated that the person who lived in urban condition had twofold extra probability to end up overweight and fat. All inclusive, age-institutionalized predominance of DM was observed to be 9.8% in male and 9.2% in female with discovered provincial imbalance, as a high commonness of DM was found in South Asia, geographic zone, the Caribbean, Focal Asia, North Africa, and in this way the Mideast. It had been clear that the Asian Indians are a ton of inclined to hazard variables like age, greasiness, and focal avoirdupois. Notwithstanding the low BMI among Asian Indians when contrasted with various ethnic groups, BMI was capably identified with aldohexose resilience. It is frequently asked that clans improved their conduct in a urban environment with the occasion of way associated hazard factors and afterward the high predominance of DM. There's a need to figure and actualize the social explicit way and wholesome intercessions to curtail the T2D. (Kapoor, Bhardwaj, Kumar, & Raina, 2014)

2.8 Community Based Study on Incidence of type 2 Diabetes and Hypertension Among Nomad Tribal Population of Rajasthan, India

In 2011 Bandana Sachdev's study demonstrated the higher presence of sort 2 diabetes when contrasted with various examinations from rustic Bharat. With developing urbanization and latent modus vivendi innate populace likewise are dwelling in and around towns and have received a way of life equivalent to them, and therefore they need comparable predominance as rustic populace as appeared in changed examinations. The aftereffects of our screening prescribe that huge scale epidemiologic examinations be embraced to decide the reasons for the rising kind 2 DM plague, for either ending or most likely notwithstanding turning around this pattern by joined preventive estimates taken by general wellbeing arrangement makers through the dynamic help of every single included partner. The commonness of prediabetes and polygenic malady inside the social gathering populace was observed to be over that in non-innate populace in Rajasthan. The relative easygoing commitment of overabundance avoirdupois, as ordered by proportions of weight and sq. of tallness for example BMI known to be partner degree modifier hazard issue for fat associated neurotic state. Propelling age and alcohol utilization may assume related job inside the advancement of sort a couple of diabetes and hypertension. The commonness pace of polygenic infection and its entanglements is expanding endlessly among these networks because of absence of access to medicinal services and data. Upheld the examination results, we will in general expect that medicinal services experts and organizers should create strategies to beat this downside and manufacture polygenic sickness care open and sensible to the ethnic populace (Sachdev, 2011)

2.9 High Prevalence of Gestational Diabetes in Women from Ethnic Minority Groups

The impact of matured individuals, heftiness, and correspondence on the recurrence of gestational diabetes was totally unique among the different ethnic groups. Inside the White and Dark young ladies, the gatherings with record-breaking low frequencies of gestational diabetes, BMI, age and equality all severally collected the recurrence of gestational diabetes. Inside the South East Asian and Indian young ladies, there are two minor gatherings with the upper recurrence of gestational diabetes, corpulence was separated from everyone else an autonomous hazard factor in the Indian young ladies. It's basic medicinal claim to fame see to screen exclusively potential diabetic young ladies: a network that has ladies who have a foundation history of diabetes, are large, or who have previously been conveyed of a macrosomic or baby. The collected recurrence of gestational diabetes in young ladies from ethnic gathering foundations should be taken into idea once screening arrangements are created to be utilized in antepartum centers (Dornhorst et al., 1992)

2.10 High Prevalence of Type 2 Diabetes Among the Urban Middle Class in Bangladesh

In 2013 the author Nazmus Saquib and his co-researchers showed a few feasible purposes behind the high predominance of diabetes and metabolic disorder measure urban white collar class Bangladeshis. Way of life related hazard variables of interminable maladies have a high nearness in South Asia and Bangladeshis have the most contemptible profile among the countries inside the area. For instance, 43rd of Bangladeshi donors inside the INTERHEART study showed centripetal heaviness. In our national capital example, 58% have centripetal obesity and 63 were cumbersome or fat as indicated by BMI; the predominance was outstandingly high among young ladies (82% and 77, independently). Additionally, 58% of

men had a cigarette-smoking history and 34th were directly smoking. Tobacco smoking is uncommon among Bangladeshi ladies; be that as it may, 21st utilized tobacco with betel-leaf, an average sees among Bangladeshis. The high recurrence of overweight and obesity couldn't completely legitimize the issue. Regularly changing eating routine synthesis just as abundance vitality admission may also be causative elements. The inside classification is increasingly more presented to handled and distinctive salt and substance rich nourishment. Healthful information naming on prepackaged sustenance is not authorized and nourishment sullying is broad in light of poor guideline and confined oversight. Further, an absence of nourishing data, social inclinations and convictions can repress side by side of higher subjective procedure with respect to dietary admission and elective way factors (Saquib et al., 2013).

2.11 Increasing Prevalence of Type 2 Diabetes in a Rural Bangladeshi Population: A Population Based Study for 10 Years

In 2013 Bishwajit Bhowmik and co-researcher in their paper stated that there is a basic augmentation in the age regulated inescapability of DM among study individuals saw all through the latest 10 years. Inescapability in this nation Bangladesh people has extended more than triple, from 2.3% to 7.9% over the latest 10 years. Different essential and mechanical changes have occurred in the examination district some place in the scope of 1999 and 2009, which may have changed nation life to an undeniably stationary lifestyle. Family expenses have extended half since 1999 in this masses which may be related to rising economy. Progressing examinations have exhibited a connection between urbanization, fiscal improvement and extended inescapability of DM in making countries. Mean characteristics for BMI, WHR, and WC recorded in the examinations have extended since the fundamental assessment in 1999. In 2004 to 2009 the pace of augmentation in these factors has also risen when appeared differently in relation to the period some place in the scope of 1999 and 2004.

The higher transcendence of DM in 2009, and the extended pace of advancement in peril factors in dynamic examinations can be agreed with the growing urbanization that has happened of late. Heftiness is a set up peril factor for DM. A critical connection between higher BMI and the occasion of DM was found in 2004 and 2009 assessment. It is of stress that mean BMI has basically extended in latest 10 years. WHR was basically associated with DM in men in all of the assessments. Nevertheless, a significant relationship for women and WHR was simply seemed 2009. The relationship among WHR and DM is moreover clear in past assessments drove in Bangladesh.(Bhowmik et al., 2013)

2.12 Population and Sampling

The reason for this venture was to survey the mindfulness and information of diabetes among large people with prediabetes who are patients in a family practice facility. The task utilized an illustrative research configuration to gauge members' learning and familiarity with T2D. A graphic research configuration is a strategy that gives a depiction of the general population partaking in an undertaking. The real methods for completing an undertaking utilizing a graphic research configuration are: Study, contextual investigation, and observational examinations. The members were ordered as monitoring having pre-diabetes in the wake of demonstrating that: (1) They had been articulated by a restorative specialist to be in the fringe for diabetes or had diabetes, (2) they had been educated that they had prediabetes or marginal diabetes, or (3) their degree of glucose is higher than standard however not satisfactory to be named as diabetes. Interest in the instructive sessions was willful. Blurbs welcoming obese patients with diabetes to take part in the instructive sessions were set at key areas in the Family Practice Facility. Subsequent to marking the assent structure, the members were furnished with the pretest before accepting the instructive sessions. A posttest was then led utilizing the DKT questionnaire. The investigation included 173 patients with diabetes older than 30 and who were eager to take an interest (Almalki, Almalki, Balbaid, & Alswat, 2017).

2.13 Data Collection

The survey contained just simple questions. The inquiries were straightforward and to the point to guarantee that the subjects don't take a ton of time addressing the inquiries. The polls were directed by a clerical specialist. Every member was given a one of a kind recognizable proof code for namelessness purposes. The members were given 30 minutes to finish the poll. After finishing of the surveys, the clerical specialist gathered and put away the polls for information examination. The surveys were twofold secured and put away a private room. Utilizing the one of a kind recognizable proof codes that were prior given to every member, the understudy had the option to analyze the pre-and posttest scores of every individual member. Information were gathered through a formal meeting with the patients led by one of the analysts. Benchmark qualities and estimations, for example, tallness, conjugal status, income source, educational background and family foundation were acquired at the season of visit. This cross-sectional study utilized a survey known as the Michigan Diabetes Knowledge Test to evaluate every patient's learning. Before the survey, the motivation behind the study was plainly disclosed to the patients also, the individuals who could peruse and keep in touch with self-finished the exploration survey, while the scientist was available to take care of any inquiries emerging from the respondents. On the other hand, the individuals who could neither read nor write to complete their surveys, they are being helped. It is guaranteed that these uneducated respondents comprehended the questions. This survey was likewise converted into Bangla. The Bangla variant of the poll was utilized to diminish language boundaries among patients.

2.14 Data Analysis

The survey questionnaire comprised of demographic and socio economic characteristic, clinical characteristics and of 14 True/false articulations that planned to evaluate DM information and mindfulness as well as 19 self-efficacy test question. Patients who addressed

> 65% of the inquiries accurately were considered to have great learning about DM. Financial information, smoking, physical exercise, T2DM term and instruction level were self-revealed. We utilized frequency test for categorical factors and mean and standard deviation (SD) for consistent factors. The Chi-squared test was utilized to consider the connection between factors; we utilized the t-test to compare the means. P value under 0.05 is factually critical and crucial. To test unwavering quality, the inner consistency was evaluated utilizing Cronbach's alpha. It is recommended that Cronbach alpha result should be 0.7 or more than that (Kline, 2006) (Table 4). Scores were determined for all out information, general DM learning and insulin information. Acceptable who effectively addressed 7 to 9 question or more were considered as breezing through the test and considered to have sufficient knowledge.

2.15 Analytical Tools

R programming language and Microsoft Excel Professional plus 2016 was utilized to figure graphic insights, for example, rates and frequencies. Frequencies and rates were utilized to break down statistic information from the members. Learning and mindfulness scores were examined by registering frequencies and rates. The learning scores extended from 0-14 and were ordered as pursues: <7= poor information, 7-9=average information, and >10= high information (Table 6).

Chapter 3

Results

3.1 Assessment of Demographic and Socio-economic data

Total 173 participants took part in this survey and among them Urban male and female respondents were 61 (69.31%) and 27 (30.68%). Among Tribal 57 (67.05%) male and 28 (32.94%) females also participated. 40 (45.45%) Urban people had been suffering from diabetes from 1.1 to 5 years whereas 36 Tribal patients that is more than one third of them had been suffering from diabetes in this range of years. Most of them Urban (97.72%) and Tribal (97.64%) respondents were married. Nearly more than one third (37.77%) of Urban participants had completed their primary and secondary level of knowledge but in case of Tribal only (24.70%) completed their primary level education and (44.70%) had completed their secondary level education. But Tribal were higher in percentage of taking bachelor education (9.41%). The income level of the Tribal shows that (5.88%) tribal individual's earnings is (>25,000), but most of them (36.4%) are in the range of (5000-10,000). More than one third (40.90%) Urban people's income range is within (5000-10,000) and only (25%) people's income range is within (10,000-25,000). Half of the total Urban (55.68%) and Tribal (50.58%) responded their disease diagnosed incidentally. One fourth of the total Urban (46.59%) and Tribal (48.23%) acknowledged that their predecessors and family members had diabetes.

Table 3 Baseline characteristics of the entire cohort

Variables	Bengal		Tribal	
Gender (%)	n = 88		n =85	
Male	61	69.31%	57	67.05%
Female	27	30.68%	28	32.94%
Duration of diabetes (%)				
<1 year-1 year	28	31.81%	28	32.94%
1.1 -5 year	40	45.45%	36	42.35%
5.1- 10 year	20	22.72%	21	24.70%
Martial state (%)				
Yes	86	97.72%	83	97.64%
No	2	2.27%	2	2.35%
Education (%)				
No primary school	3	3.40%	1	1.17%
Primray	35	39.77%	21	24.70%
Secondary	35	39.77%	38	44.70%
College	11	12.50%	17	20.00%
Bachelor	4	4.54%	8	9.41%
Income				
<5000	8	9.09%	11	12.94%
5000 - 10,000	36	40.90%	31	36.47%
10,000-25,000	22	25%	18	21.17%
>25,000	0	0%	5	5.88%
Diagnosis %				
Symptomatic	39	44.31%	42	49.41%
Incidental	49	55.68%	43	50.58%
Family members had diabetes before				
Yes	41	46.59%	41	48.23%
No	32	36.36%	37	43.52%
Don't know	15	17.04%	7	8.23%
Table 1. Baseline charactersitics of the Entire Cohort				

3.2 Cronbach Alpha Test of the 14 MDKT Questions

Reliability test result was 0.720 and 0.702 for Urban and Tribal group respectively. The result is around 0.7 which is within the recommended result and considered good consistency as well as reliable for the 14 items in Michigan Diabetes Knowledge Test.

Table 4 Reliability test of the 14-item MDKT

Cronbach's alpha if item deleted		
MDKT question number	Bengal	Tribal
Question 1	0.72	0.70
Question 2	0.70	0.68
Question 3	0.69	0.64
Question 4	0.70	0.68
Question 5	0.71	0.70
Question 6	0.69	0.66
Question 7	0.68	0.67
Question 8	0.71	0.69
Question 9	0.72	0.66
Question 10	0.72	0.69
Question 11	0.69	0.70
Question 12	0.71	0.70
Question 13	0.71	0.70
Question 14	0.70	0.73
*Total cronbach alpha for Bengal and Tribal was 0.72 and 0.70 respectively		

3.3 Assessment of Knowledge Score

The questionnaire has 20 True/False question. Those who don't take insulin regularly they were allowed to answer first 14 questions regarding diet and general management question. One of the questions was about Glycosylated hemoglobin to assess the range of knowledge of all the participants about blood glucose level measurement. It was observed that 75% of the total Urban patients don't know what HbA1c test is. Only a few patients 10.2% gave the right answer. (Correct answer=False). In case of tribal they couldn't give the correct answer of this question. Again, the question on diet soft drink in the treatment of low blood sugar patient the Urban group did well as they got 43.18% in False option (correct answer) and here Tribal group got 40 % correct answer which doesn't differ that much from Urban group.

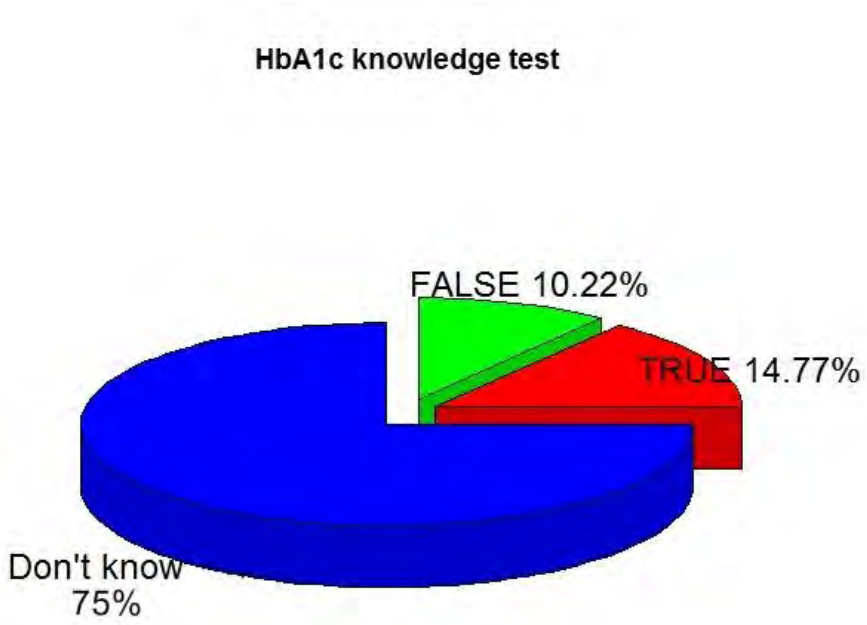

Figure 1 HbA1c test knowledge score (Pie chart of the urban group's answer)

Figure 2 HbA1c test knowledge score (Pie chart of the Tribal group's answer)

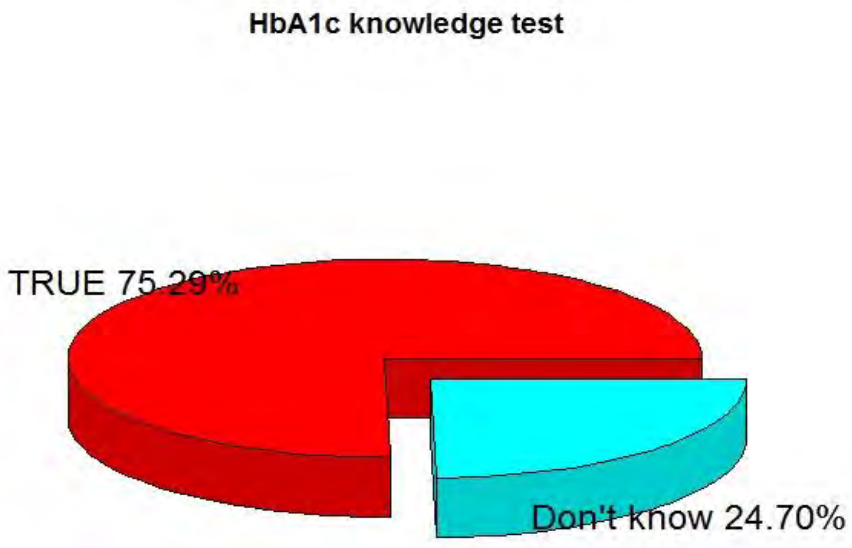

Figure 3 Diet soft drink knowledge score in the treatment of poor blood glucose

Figure 4 Diet soft drink knowledge score in the treatment of poor blood glucose

A total of 173 patients including Urban and Tribal are recruited to complete the questionnaire. The questionnaire can be categorized into several parts. The first part is all about diet. Among all the respondents both Tribal (96.47%) and Urban (98.86%) picked the correct answer. In the question regarding carbohydrate in chicken and potatoes, Tribal people (74.11%) were more correct than Urban 43.67%). Again, orange and low fat milk associated question both Tribal (83.52%) and Urban (75%) had no significant difference. The question on unsweetened fruit juice in the treatment of low blood sugar treatment Tribal (2.35%) didn't score good whereas Urban (9.09%) respondents were correct. Moreover, the question on diet, soft drink in the treatment of low blood glucose patient and use of olive oil for cooking, both groups didn't much differ in correct answers.

Question related to exercise both Tribal (85.88%) and Urban (69.31%) most people were correct. Also in high blood pressure related question the Tribal people were (69.41%) and Urban people were (86.36%).

General management associated question like to prevent foot ulcers only (3.52%) Tribal and (9.09%) Urban patients were correct. Regarding numbness related to nerve disease both group Tribal and Urban corrected (51.76%) and (48.86%) consecutively.

Finally, question regarding diagnosis of diabetes Tribal people scored (3.52%) and Urban people scored (7.95%) correct answer. Even the question regarding HbA1c test both Tribal and Urban both respondents scored (16.47%) and (10.22%) respectively. To compare the groups chi square test was done for 14 MDKT question in both groups.

Table 5 Percentage of respondents with correct answers and chi squared test of MDKT

Questions	Bengal		Tribal		Chi squared test	
N=20	N=88	(%Correct)	N=85	(%Correct)	X^2	p-value
1. Diabetes diet is healthy diet for most people	87	98.86%	82	96.47%	0.03	0.8
2. Chiken has more carbohydrate than potatoes	38	43.18%	63	74.11%	2.04	0.3
3. HbA1c tests the average blood gluocse of past week	9	10.22%	14	16.47%	2.15	0.7
4. Orange juice contains more fatty elements than cow milk	66	75%	71	83.52%	2.41	0.6
5. Urine and blood both testing are equally good for blood glucose	7	7.95%	3	3.52%	2.65	0.2
6. Unsweetnend juice of fruits may raise the level of gluocse in blood	8	9.09%	2	2.35%	5.78	0.21
7. Diet drinks can be used in the treatment of poor glucose level patient	38	43.18%	38	44.70%	13.37	0.009
8. Using olive oil in cooking can lower the cholesterol in blood	78	88.63%	76	89.41%	19.02	0.0007
9. Regular exercising reduce high BP	76	86.36%	59	69.41%	1.5	0.4
10. Regular exercise has impact in the sugar level of blood	61	69.31%	73	85.88%	3.36	0.4
11. Infection can cause increase in blood sugar level	3	3.40%	1	1.17%	4.42	0.3
12. Wearing bigger size shoes than usual can prevent foot ulcers	8	9.09%	3	3.52%	0.32	0.5
13. Eating foods lower in fat can reduce the chance of heart disease	77	87.50%	79	92.94%	2.08	0.7
14. Becoming numb and tingling is the sign of a disease of nerve	43	48.86%	44	51.76%	3.88	0.4

Table 2. Percentage of respondents with correct answers with chi squared test and their p value for each item of MDKT

In table 6. both group are categorized into three categorized based on their level of knowledge. Here 52 Urban respondents (59.09%) and 21 Tribal (24.70%) got less than 7 points, they fell in low group. Again, there were 36 Urban patients (40.90%) and 63 Tribal patients (74.11%) in acceptable level of knowledge that mean they got 7 to 9 in between. Only 1 Tribal patient (1.17%) had good level of knowledge. Then to understand total difference t-test was done and it gave value 4.60 and p-value is 0.0000079.

Table 6 t- test between the total level of knowledge of two groups (n= number of people)

Level of knowledge						
Groups	Low n (%) <7	Accetable n (%) 7 to 9	Good n(%) ≥ 10	Total	t test	p- value
Bengal	52 (59.09%)	36 (40.90%)	0 (0 %)	88	t= 4.6069	0.0000079
Tribal	21(24.70%)	63 (74.11%)	1 (1.17%)	85		
Total	73 (42.19%)	98 (54.64%)	1 (1.17%)	173		

3.4 Assessment of Self-Efficacy Scale

Mean self-efficacy scores and scoring distribution didn't differ substantially, they were almost similar in both groups (Urban 58.19 ± 13.69, Tribal 59.91 ± 12.61) with statistically significant differences between Tribal and Urban participants (Table 4). All the diet question both groups mean score were almost same except "keep my diet when I go to parties" question. Tribal were (3.27 ± 0.94) and Urban scored (2.61 ± 0.95). Again in the question "keep my diet when I eat out in known places" Tribal scored (3.25 ± 0.92) and Urban were (2.86 ± 0.96). In general management questions like "perform the treatment of diabetes in my daily life" the score was (3.40 ± 0.74) and (2.62 ± 0.76) for both Tribal and Urban respectively. In addition, questions on confident and safety to use one's knowledge in daily treatment Tribal scoring was a bit high, like for "confident in my ability to deal with diabetes" Tribal mean (3.20 ± 0.72) and Urban mean (2.73 ± 0.69). Other than these, they

were akin. Also, two sample t test of each item asked to both groups had been done. Blood sugar and planned treatment related question p- value was 0.425 and 0.195 respectively which is greater than 0.05. Again, p- value of the question associated with insulin dose based on the blood and sugar testing when necessary as well as insulin dose to avoid falling blood sugar when practicing physical exercise was 0.72 and 0.79 consecutively. Apart from these all the p-value are less than 0.05.

Table 7 Item content and mean of the self-efficacy scale

Item	Mean ± Sd		t test
I believe I can…	Bengal (n=88)	Tribal (N=85)	p value
…perform the treatment of diabetes in my daily life	2.62 ± 0.76	3.40 ± 0.74	1.994E-10
I am confident in my ability to deal with diabetes	2.73 ± 0.69	3.20 ± 0.72	0.00001873
I feel safe to use my knowledge of diabetes in my daily treatment	2.62 ± 0.59	3.15 ± 0.65	8.76E-08
…follow the diabetes routines every day	3.33 ± 0.77	3.87 ± 0.37	2.783E-08
I am sure that diabetes treatment does not hinder my daily routine	3.23 ± 0.75	3.68 ± 0.49	0.00000549
…follow the planned treatment of diabetes, even when there are changes in my daily routine	2.77 ± 0.77	2.93 ± 0.81	0.195
…know when my blood sugar is too high	3.97 ± 0.24	3.99 ± 0.11	0.425
… recognize when my blood sugar is too low	2.66 ± 0.95	3.85 ± 0.52	2.2E-16
I do blood or urine sugar testing more often than usual when I am sick	2.34 ± 0.62	2.66 ± 0.72	0.002201
…apply insulin using the right technique	2.38 ± 0.81	2.84 ±0.99	0.0009927
I have the ease of applying insulin When I am away from home	2.26 ± 0.70	2.80 ± 0.99	0.00006073
… adjust my insulin dose based on the results of the blood or urine sugar testing when necessary	2.01 ± 0.24	2.02 ± 0.22	0.7264
…adjust my insulin dose to avoid falling blood sugar when practicing physical exercise	2.03 ± 0.32	2.02 ± 0.22	0.7991
… eat at the same time everyday	3.16 ± 0.95	3.31 ± 0.86	0.2865
… keep my diet when I eat out in known places (for example friends)	2.86 ± 0.96	3.25 ± 0.92	0.008213
…keep diet when I eat away from home in unfamiliar places	3.16 ± 0.97	3.56 ± 0.78	0.002756
I am sure I will be able to keep my diet when people around me do not know that I am diabetic	3.16 ± 0.96	3.64 ± 0.72	0.0002922
…properly replace one type of food for another of the same group. Example: Changing rice for potatoes	2.27 ± 0.69	2.47 ± 0.84	0.09289
… keep my diet when I go to parties.	2.61 ± 0.95	3.27 ± 0.94	9.80E-06
Total Scale	58.19 ± 13.69	59.91± 12.61	2.545E-10

Chapter 4

Discussions

The main objectives of this research is to discover the prevalence of diabetes and compare the level of knowledge & attitude among Garo and local Urban people. Our studies show that Garo are one step ahead in education comparing with local Urban people. So, local Urban people have to be more educated and knowledgeable at the same time. Creating awareness regarding diabetes and knowledge can be one of the crucial factor. Again, in the Michigan Diabetes Knowledge Test questionnaire there are several categories, but diet and general management are most important. In our studies it shows that Tribal scored really well in diet part, that may be for their good level of knowledge. In some case, like general management part Tribal individuals didn't score more than local Urban people. It could be their ignorance or reluctant of applying their knowledge in their usual lifestyle behavior. Diabetic patients should be capable so as to accomplish better glycemic control. In our study, it shows that (59.09%) Urba respondents and (24.70%) Tribal respondents had low level of knowledge. Their basic general knowledge about diabetes are almost same but there are some shortages of knowledge mostly in diet part for Urban respondents and for Tribal respondents it is general management, which have to be ameliorated. Moreover, in this study, in the self-efficacy part of the questionnaire Urban people had mostly negative attitude whereas Tribal respondents had quite positive attitude. This shows that Urban respondents are not satisfied with their daily life management with diabetes comparing with Tribal respondents. It can be also due to their lacking of knowledge and negligence. This have to be removed by creating local awareness program by different NGOs and government organization. Additionally, clinical characteristics show in our study show that, (48.29%) Tribal respondents and (46.59%) Urban participants said they ancestors and closely related family persons had

diabetes. It indicates that family can be a factor of having diabetes if closely related family members have had diabetes. Overall study encourages that; knowledge part is criterion but self-efficacy and care is really required to bring the change in ideal glycemic control. Our study has limitation also; this data is taken from all the respondents who were suffering from diabetes and agreed to take part in this survey, so question may arise about the validity of the data. Also, we were not able to communicate all the diabetes patients of Ranikhong area in Mymensingh, but we managed to collect a moderate number of people of that specific area who are actually representing the all the diabetes patient's level of knowledge and prevalence of diabetes as well. Finally, it can be said that, Tribal people had much more sound and acceptable knowledge in comparison with Urban respondents. We claim that, constrained family earnings and poor level of education is responsible for this. Local health care providers also have to be adequately trained to let the limited educated patients as well as make local people concern about the disease to reduce the prevalence of diabetes.

Chapter 5

Conclusions

Different examinations give solid proof that diabetes recurrence is very advancing along with its extreme difficulties in Bangladesh. The information on the reason, control and hazard variables of diabetes, self-observing just as the treatment of diabetes remain essentially low particularly among the general population of poor districts, uneducated ones and among the ethnic minorities. By breaking down and assessing a critical number of studies it tends to be proposed that legitimate enhancements of diabetes conclusion, learning level, self-observing and medicines are required in Bangladesh particularly among the oppressed individuals. Moreover, more investigates ought to be directed by centering at the underlying causes, ecological hazard factors (arsenic sullied water, air contamination) and so on the advancement of diabetes, pharmacovigilance information seeing anti diabetic medications just as the visualization of diabetes. In addition, broad exploration and review ought to be led in each locale of Bangladesh on the commonness, learning evaluation, self-administration and treatment of diabetes mellitus in each 5 or 10 years so as to break down the enhancements and ailing in different parameters or factors and find a way to conquer those impediments for guaranteeing better wellbeing for all individuals. We should focus to aggrandize the healthcare needs and to develop the situation of medical care center for these susceptible people and make these facilities available and easy accessible for the welfare of ethnic groups.

Chapter 6

References

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Appendix A

ASSESMENT OF DIABETES KNOWLEDGE AND SELF-EFFICIENCY IN DIABETES MANAGEMENT

SECTION A- DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS

SECTION B- CLINICAL CHARACTERISTICS

SECTION C- DIABETES KNOWLEDGE TEST (REVISED MICHIGAN DIABETES KNOWLEDGE SCALE)

SECTION D- SELF EFFICIENCY SCALE IN DIABETES MANAGEMENT (IMDSES)

IMDSES SCALE-GENERAL MANAGEMENT

IMDSES SCALE-INSULINE

IMDSES SCALE-DIET

SECTION A

DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS

No	Questions	Feedback
DSC 1	Enter your gender	Male
		Female
DSC 2	How old are you?	<4o
		40-60
		> 60
DSC 3	Are you married?	Yes
		NO
DSC 4	What is the highest level of education you completed?	No primary school
		Primary
		Secondary

		College

		Graduate
		Post Graduate
DSC 5	What is your present profession?	Part time job
		Full time job
		Unemployed
DSC 5	How much income you earn per month?	<5000
		5000-6000
		10000-25000
		>25000
DSC 6	Are you living with your family?	Yes
		NO

SECTION B

CLINICAL CHARACTERISTICS

No	Questions	Feedback
CC 01	Which type of diabetes mellitus you have?	Type 1
		Type 2
		Don’t know
CC 02	How long is the duration of your diabetes?	<1year
		1.1-5 year
		5.1-10 year
		10.1-20 year
		>20 year

No	Questions	Feedback
CC 03	What was the mode of diagnosis of your diabetes?	Symptomatic
		Incidental
CC 04	Do you have any family members who has diabetes?	Yes
		No
		Don’t know

SECTION C

DIABETES KNOWLEDGE TEST-

REVISED MICHIGAN DIABETES KNOWLEDGE SCALE (TRUE/FALSE VERSION)

Here are 20 statements about diabetes, some are true statements and some are false. Please read each statement and then indicate whether you think true or false by putting a tick sign on either true or false. If you do not know the answer, please put a tick on don't know. A score of 1 is assigned for a correct response and 0 for an incorrect response/no response/don't know response.

No	Questions	Feedback	Score
MDK 01	The diabetes diet is a healthy diet for most people	True	01
		False	
		Don't know	
MDK 02	A pound of chicken has more carbohydrate in it than a pound of potatoes	True	01
		False	
		Don't know	

No	Questions	Feedback	Score
MDK 03	Glycosylated hemoglobin (Hba1c) is a test that measures your average blood glucose level in the past week	True	01
		False	
		Don't know	
MDK 04	Orange juice has more fat in it than low fat milk	True	01
		False	
		Don't know	
MDK 05	Urine testing and blood testing are both equally as good for testing the level of blood glucose	True	01
		False	
		Don't know	

No	Questions	Feedback	Score
MDK 06	Unsweetened fruit juice raises blood glucose levels	True	01
		False	
		Don't know	
MDK 07	A can of diet soft drink can be used for treating low blood glucose levels	True	01
		False	
		Don't know	
MDK 08	Using olive oil in cooking can help lower the cholesterol in your blood	True	01
		False	
		Don't know	

No	Questions	Feedback	Score
MDK 09	Exercising regularly can help reduce high blood pressure	True False Don't know	01
MDK 10	For a person in good control, exercising has no effect on blood sugar levels.	True False Don't know	01
MDK 11	Infection is likely to cause an increase in blood sugar levels.	True False Don't know	01
MDK 12	Wearing shoes a size bigger than usual helps prevent foot ulcers	True False Don't know	01

No	Questions	Feedback	Score
MDK 13	Eating foods lower in fat decreases your risk for heart disease	True False Don't know	01
MDK 14	Numbness and tingling may be symptoms of nerve disease	True False Don't know	01
MDK 15	Lung problems are usually associated with having diabetes.	True False Don't know	01
MDK 16	When you are sick with the flue you should test for glucose more often	True False Don't know	01

No	Question	Feedback	Score
MDK 17	High blood glucose levels may be caused by too much insulin	True	01
		False	
		Don’t know	
MDK 18	If you take morning insulin but skip breakfast your blood glucose level will usually decrease	True	01
		False	
		Don’t know	
MDK 19	Having regular check-ups with your doctor can help spot the early signs of diabetes complications	True	01
		False	
		Don’t know	
MDK 20	Attending your diabetes appointments will stop you getting diabetes complications	True	01
		False	
		Don’t know	

SECTION D

ASSESMENT OF IMDSES SCALE-

Self-efficiency Scale in Diabetes Management (IMDSES)

Please circle the most appropriate number of each statement which correspond most closely to your desired response.

IMDSES SCALE-GENERAL MANAGEMENT	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In most cases, I can perform the treatment of diabetes in my daily life.	1	2	3	4	5
I am confident in my ability to deal with diabetes	1	2	3	4	5
I feel safe to use my knowledge of diabetes in my daily treatment	1	2	3	4	5
I believe I can follow the diabetes routines every day	1	2	3	4	5
I am sure that diabetes treatment does not hinder my daily routine	1	2	3	4	5
I think I can follow the planned treatment of diabetes, even when there are changes in my daily routine	1	2	3	4	5

IMDSES SCALE-INSULINE	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I can know when my blood sugar is too high	1	2	3	4	5
I can recognize when my blood sugar is too low	1	2	3	4	5
I do blood or urine sugar testing more often than usual when I am sick	1	2	3	4	5
I can apply insulin using the right technique	1	2	3	4	5
I have the ease of applying insulin When I am away from home	1	2	3	4	5
I can adjust my insulin dose based on the results of the blood or urine sugar testing	1	2	3	4	5

when necessary					
I can adjust my insulin dose to avoid falling blood sugar when practicing physical exercise	1	2	3	4	5
IMDSES SCALE-DIET	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I can eat at the same time everyday	1	2	3	4	5
I can keep my diet when I eat out in known places (for example friends)	1	2	3	4	5
I can keep diet when I eat away from home in unfamiliar places	1	2	3	4	5
I am sure I will be able to keep my diet when people around me do not know that I am diabetic	1	2	3	4	5

I can properly replace one type of food for another of the same group. Example: Changing rice for potatoes	1	2	3	4	5
I can keep my diet when I go to parties.	1	2	3	4	5