DISSERTATION

ON

"ASSESS THE PREVALENCE AND COMPARE THE RISK FACTORS OF TYPE II DIABETES MELLITUS AMONG ALCOHOLIC AND NON ALCOHOLIC MALES RESIDING AT MEDAVAKKAM, CHENNAI."

M.Sc (NURSING) DEGREE EXAMINATION

BRANCH –IV COMMUNITY HEALTH NURSING

COLLEGE OF NURSING

MADRAS MEDICAL COLLEGE, CHENNAI-3

A dissertation submitted to

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI-600 032.

In partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN NURSING

APRIL -2012

CERTIFICATE

This is to certify that this dissertation titled**, "Assess the prevalence and compare the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males residing at Medavakkam, Chennai",** is a bonafide work done by **Ms.N.Thivya**, College of Nursing, Madras Medical College, Chennai-03, submitted to The Tamilnadu Dr. M.G.R. Medical University, Chennai in partial fulfillment of the university rules and regulations towards the award for the degree of Master of Science in Nursing, Branch-IV, Community Health Nursing under our guidance and supervision during academic period from 2010-2012.

Ms.R.Lakshmi, M.Sc(N), Ph.D.,
Principal,
College of Nursing
Madras Medical College
Chennai-03

Dr.V.Kanagasabai,M.D
Dean,
Madras Medical College
Chennai-03

DISSERTATION

ON

"ASSESS THE PREVALENCE AND COMPARE THE RISK FACTORS OF TYPE II DIABETES MELLITUS AMONG ALCOHOLIC AND NON ALCOHOLIC MALES RESIDING AT MEDAVAKKAM, CHENNAI".

Approved by the Dissertation Committee On: _____

Clinical Speciality Guide: _____
Mrs. P.Sornam, M.Sc(N)
Reader ,
Department of Community Health Nursing,
College of Nursing ,
Madras Medical College,Chennai-3.

Medical Expert _____
Dr. A.K.Rajendran, MD,DPH
Director,
Institute of Community Medicine,
Madras Medical College,
Chennai-600 003

Block Medical Officer _____
Dr.E.Ravichandran, MBBS
Chief Civil Surgeon,
Upgraded Primary Health Centre,
Medavakkam,
Chennai.

Statistical Guide _____
Mr. A. Vengatesan, MSc., M Phil., PGDCA (Ph.D)
Lecturer in Statistics,
Department of Statistics,
Madras Medical College,
Chennai- 3

A Dissertation submitted to
THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY,
CHENNAI.600 032.
In partial fulfillment of the requirement for the degree of
MASTER OF SCIENCE IN NURSING
APRIL – 2012

ACKNOWLEDGEMENT

I thank **Almighty God** for his abundant grace, blessings, wisdom, knowledge, guidance, strength and unconditional love showered on me to complete this study without any interruption

My sincere thanks to **Dr.R.Lakshmi M.Sc(N).,PhD,** Principal, College of Nursing, Madras Medical College, Chennai-3 for vivid and valuable suggestion in the field of Nursing Research and extending support to conduct this study.

My sincere thanks to **Dr.V.Kanagasabai M.D.**, Dean, Madras Medical college, Chennai-03 who permitted me to conduct the study.

With great privilege, I extend my heartfelt thanks and gratitude to the Former Principal, **Dr.Mrs.P.Mangala gowri M.Sc(N)., Ph.D,** College of Nursing, Madras Medical college, Chennai-03, for her innovative and constructive guidance, with very valuable suggestions and support to me, which made this study a fruitful one.

I also express my deepest and sincere thanks to **Miss.Jenette Fernandes M.sc (N).,** Reader, College of Nursing, Madras Medical College, Chennai-03, for guiding me and taking me on the right path and suggestions given for this study.

My sincere thanks to Guide Dr**. K.Menaka M.Sc(N).,PhD**, Reader, for her support and encouragement for the successful completion of the study.

It is my great pleasure and privilege to express my gratitude to **Mrs.P.Sornam M.Sc(N).,** Reader, Community Health Nursing, College of Nursing Chennai-03, for her support, constant encouragement and valuable suggestions and guidance to complete this study.

I am grateful to **Mrs.Elizabeth Kalavathy M.Sc (N).,** Lecturer, for her constant guidance, encouragement and motivation throughout the study.

I wish to express my gratitude to all the **Faculty Members** of College of Nursing, Madras Medical College for their valuable guidance in conducting this study.

I wish to express my thanks to **Dr. Kanagambujam M.Sc (N)., Ph.D,** professor, MIOT College of Nursing, for her support and spending her valuable time in validation of the tool

I wish to express my heartfelt thanks to **Dr. Rajeshwari vaidyanathan M.Sc(N)., Ph.D,** Principal, College of Nursing, Sri Ramachandra Medical University, Porur, for the support and spending her valuable time in validation of the tool.

My earnest gratitude to **Dr. V.Ravichandran MBBS.,** Chief civil Surgeon, Upgraded Primary Health Centre, Medavakkam for his support during the study.

I acknowledge my sincere thanks to **Mr. A. Vengatesan, MSc., M Phil., PGDCA (Ph.D) and Lecturer** in Statistics for his valuable suggestions and guidance in the data analysis and presentation.

My immense thanks to **Mr.John Jeba Singh M.A., Lit (Eng), M.Ed Lecturer,** Madras Christian College, Tambaram for editing the dissertation in English.

My special word of thanks to the **Mr. Ravi M.A., MLIS Librarian** of College of Nursing, Madras Medical College, Chennai – 03.

I extend my immense love and gratitude to my Father **Mr.K. Natarajan M.A.,** and Mother **Mrs.N.Soundari** and my brothers for their loving support, encouragement, earnest prayers, which enabled me to accomplish this study.

I extend my special thanks to **all my friends** who gave me support and innumerable suggestions throughout the study

Last but not the least, I extend my gratitude **to all** those who have been directly or indirectly associated with my study at various levels but not mentioned in this acknowledgement.

ABSTRACT

The prevalence of diabetes is rapidly increasing all over the globe at an alarming rate over the past 30 years. Several factors increase the risk of Type II Diabetes Mellitus, including being overweight, family history of diabetes and a number of lifestyle factors including diet, habits, and lack of physical activity. There is a growing consensus that alcohol consumption as an influencing factor for Type II Diabetes Mellitus. The statement of the problem was assess the prevalence and compare the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males residing at Medavakkam, Chennai and the objectives of the study was to assess the prevalence of Type II Diabetes Mellitus among males, to compare the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males and to associate the selected demographic variables with the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males . Non experimental exploratory design was used by simple random sampling using lottery method. The study was conducted in Medavakkam rural area, Chennai with the sample size of 100 males with known diabetes (50 alcoholic males and 50 non alcoholic males) were selected as study subjects by simple random sampling. The tool used for the study includes structured interview schedule and was developed based on the objectives of the study. The obtained data was analyzed by using descriptive and inferential statistics in terms of frequency distribution, percentage, standard deviation, independent t – test, and chi square test. The findings of the study showed that prevalence of Type II Diabetes Mellitus among the males is 13.36% with the confidence interval of 95% and comparison of risk factors like lifestyle factors, dietary pattern, stress factors ($p=0.001$) of alcoholic and non alcoholic males were highly significant. It reveals that both alcoholic and non alcoholic males must be more aware of their risk factors associated with Type II Diabetes Mellitus to promote their health and prevent themselves from disease. Alcoholism is one of the factors for the cause of Type II Diabetes Mellitus. Among the alcoholic and non alcoholic males level of stress and history of hypertension are at greater significance in the alcoholic males with the history of Type II Diabetes Mellitus.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER – I

INTRODUCTION

"India, the world's second most populous Country,

Now have more people with Type II Diabetes Mellitus"

- Jared Diamond

Type II Diabetes Mellitus is a major disease burden in developed and developing countries. It is a long term disease which is also known as adult onset disease that occurs when the body does not produce enough insulin marked by high levels of sugar in the blood. The prevalence of Type II Diabetes Mellitus is growing rapidly worldwide and is reaching epidemic proportions, which is usually asymptomatic for long periods of time during which micro vascular complications can develop.

The prevalence of diabetes is rapidly increasing all over the globe at an alarming rate over the past 30 years; the status of diabetes has changed from being considered as a mild disorder of the elderly to one of the major causes of mortality and morbidity affecting the youth. The 42nd World Health Assembly noted that Type II Diabetes Mellitus is already a significant public health concern and the problem is growing especially in the developing countries

According to World Diabetes Atlas it is estimated that there are currently 285 million people with Type II Diabetes Mellitus worldwide and this number is set to increase to 438 million by the year 2030 and according to International Diabetes Federation the number of people with Type II Diabetes Mellitus in India is currently around 40.9 million and is expected to rise to 69.9 million by 2025. Indian council Medical research study by

the year 2007 reported that the prevalence of Type II Diabetes Mellitus in rural population is 1.5% and above 40 years is 2.8%.

The **world health organization** reports showed that the estimation of Type II Diabetes Mellitus in India is

- 2000- 32 million
- 2006- 38.9 million
- 2010- 40.09 million
- 2025- 69.9 million
- 2030- 80 million

Prevalence of Type II Diabetes Mellitus in Chennai is

- 2000- 11.6%
- 2004-13.5%
- 2010- 14.3%

Several factors increase the risk of Type II Diabetes Mellitus, including being overweight, family history of diabetes and a number of lifestyle factors including diet, habits, and lack of physical activity. There is growing consensus that alcohol consumption has an influencing factor for Type II Diabetes Mellitus.

The biological mechanism is uncertain but there are several factors that may explain the relationship between Type II Diabetes Mellitus and alcohol, including increase in insulin sensitivity after alcohol consumption, changes in the level of alcohol metabolites which increases the High Density Lipoprotein cholesterol concentrations. Alcohol has calories without the vitamins, minerals and other nutrients that are essential for maintaining good health. Frequent heavy drinking can cause liver damage overtime. Because the liver stores and releases glucose, blood glucose levels may be more difficult

to control in person with liver damage from alcohol. Therefore drinking heavy alcohol in people may cause blood sugar to rise.

India is one of the largest producers of alcohol in the world and there has been a steady increase in its production over the last 15 years. According to Tamilnadu State Marketing Corporation statistics more than two-third of the total beverage of alcohol consumption is in the region of India. Since there are various beverages like beer, wine, sparks. Etc. Liquor is the beverage available more in the rural Tamilnadu which contains 15-55% of Alcohol in 100 ml. Studies by alcohol and drug information in India shows that there is an alarming increase in alcohol consumption among adolescents and youths during the last twenty years

.

John A and Barman A examined the prevalence of alcoholism in rural India and there were 46.7% of lifetime users of alcohol. Hence easy availability of illicit and commercial alcohol at low cost which is affordable by the rural people made them addict to alcohol which is one of the risk factors for developing Type II Diabetes Mellitus.

Tsumura and collegues observed a large cohort of Japanese men and found that heavy alcohol use among men are associated with an increased risk of Type II Diabetes Mellitus likewise, **Holbook et al.,** examined 524 diabetic patients and found that alcohol intake was a risk factor for the development of non-insulin dependent Diabetes Mellitus in men. **Lindegard and Langman** also found a positive correlation between alcoholism and prevalence of Type II Diabetes Mellitus.

In the study conducted by **Sudheer.B et.al.,** was carried out in Tirupathi, a town in Andrapradesh, regarding the prevalence of Type II diabetes mellitus among 220 diabetic patients out of which 185 (84%) were Type II diabetes mellitus and 35(16%) were Type I diabetes mellitus. Out of Type II diabetes mellitus patients 130 (70%) fall in the age between 30-35 years and 32 (17.5%) between 46-55 years and 23(12.5%) are above 55 years. Regarding lifestyle and habit 45(24.5%) of the Type II diabetes mellitus patients

have regular habit of both smoking and alcoholic, where 15(18%) of the patients were alcoholics alone. Among total diabetic patients 92% of them were unaware about the role of other factors like smoking, alcohol, diet and exercise associated with diabetes.

NEED FOR THE STUDY

India leads the world with largest number of diabetic patients, affecting the rural population in India comprising of 72%, a major proportion of the total Indian population than the urban area with only 28% of the population. In the rural community, alcoholism plays a major role, due to their heavy physical work they are forced to take easily available illicit and commercial alcohol at low cost which is affordable by them and made them an addict, especially the youth males. However alcoholism is the cause for various diseases, there is the growing consensus that alcohol is processed in the body very similarly to the way fat is processed and alcohol provides almost as many calories which may cause blood sugar to rise.

Misra p.,et al conducted study on extent of problem of diabetes in rural India, a systematic search was performed using electronic as well as manual methods, for a period of 15 years and the results revealed that 2.02 per 1000 population per year increase in diabetes prevalence. The rate of increase was high in males (3.33 per 1000 per year) as compared to females (0.88 per 1000 per year). Hence the prevalence of diabetes is raising in rural India, they suggests that population level and individual level measures are needed to combat this increase burden of diabetes

Males in the rural community are unaware of the fact that alcohol consumption causes insulin sensitivity, as they are consuming minimum of 500ml alcohol in the raw manner without any side dishes and they are having the habit of taking food later after alcohol consumption, which increases the insulin sensitivity and develops diabetes very earlier than other risk factors of Type II Diabetes Mellitus like genetic factors, dietary factors, illness, stress. Etc.

TASMAC (Tamilnadu State Marketing Corporation) owned by the Government of India has increased the shops available at most of the corners in the community and exposure to mass medias, casual drink with friends makes the youth addict to alcohol, which serves as one of the risk factors of adult onset disease called Type II Diabetes Mellitus. A prospective epidemiological studies by **Karon et al.,** have yielded results that the association of alcohol and incident of Type II Diabetes Mellitus, they concluded that among 71 patients, 18% reported that they drink alcohol containing beverages with in the last month. Among them 61% of the diabetic drinkers were light drinkers, 31% were moderate drinkers and 8% were heavy drinkers, and most of the alcohol consumers drank between meals and only 12% of diabetic drinkers, drinking alcohol with meals as recommended by American Diabetes Association.

The relationship between alcohol consumption and the incidence of Type II Diabetes Mellitus was examined by **Manson et al.,** among relatively young and middle aged women. A prospective study was done among 109690 women aged 25 to 42 years during ten years of follow up, 935 incident cases of Type II Diabetes Mellitus was identified. The results revealed that women who reported 30 grams per day or more of liquor intake showed a significantly increased risk of Diabetes Mellitus compared with those who did not report liquor intake.

Sofia Carlson., et al, studied "Alcohol consumption and the incidence of Type II diabetes mellitus" to investigate alcohol consumption in relation to incidence of Type II diabetes mellitus. A study sample comprises 22,778 twins of the Finnish by cohort study. Information on alcohol, smoking, diet, and physical activity, medical and social conditions was obtained by questionnaire; the results concluded that high alcohol consumption was associated with an increased incidence of Type II diabetes mellitus in lean women but not in overweight women or men. In women binge drinking was associated with an increased incidence of Type II diabetes mellitus. Hence binge drinking

and high alcohol consumption may increase the risk of Type II diabetes mellitus in women.

This has been observed by the investigator during the survey of area in data collection procedure while the prevalence of alcoholics with Type II diabetes are more in the rural area of Medavakkam and also from the Literatures, the investigator found that the prevalence of Type II Diabetes Mellitus is more among alcoholics, so to prove that, the investigator was motivated to assess the prevalence and compare the risk factors among alcoholic and non alcoholic males.

STATEMENT OF PROBLEM

Assess the prevalence and compare the risk factors of Type II Diabetes Mellitus among alcoholic and nonalcoholic males residing at Medavakkam, Chennai.

OBJECTIVES

- To assess the prevalence of Type II Diabetes Mellitus
- To compare the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males
- To associate the selected demographic variables with the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males

HYPOTHESIS

- There is significant difference between the risk factors among alcoholic and nonalcoholic males
- There is significant association between the risk factors among alcoholic and nonalcoholic males with selected demographic variables

OPERATIONAL DEFINITION

Prevalence:

The total number of males with known Type II Diabetes Mellitus in the given population at a time

Risk Factors

Factors like physical parameters, hereditary, life style, illness, dietary pattern, stress etc. that are prone to develop Type II Diabetes Mellitus

Type II Diabetes Mellitus:

Males with known Type II Diabetes Mellitus above 30 years of age with the habit of in taking alcohol and non alcoholics.

Alcoholic males

Males with the habit of alcohol consumption at least 100 ml once in a week.

Non Alcoholic Males

Males who do not have the habit of alcohol consumption

ASSUMPTION

- Alcohol has calories without minerals, vitamins and other nutrients essential to maintain good health which in turn may cause blood sugar to rise.
- Onset of Type II Diabetes Mellitus might occur earlier among alcoholic males

- Males with known diabetes in the rural community have less awareness of the risk factors and poor maintenance of health

DELIMITATION

The study was delimited to

- Data collection period of 4 weeks
- Data collection procedure through interview technique

CHAPTER – II

REVIEW OF LITERATURE

This section has two parts:

Part – A : Review of related literature

Part – B : Conceptual Frame work

Part – A

Review of related literature

This section on literature is divided into 2 parts which explores the literature and the previous studies on prevalence and risk factors of Type II Diabetes Mellitus. This section is divided into the following headings:

1. Studies related to risk factors of Type II Diabetes Mellitus
2. Studies related to alcohol consumption as the risk factor of Type II Diabetes Mellitus

Studies related to risk factors of Type II Diabetes Mellitus

Alokail MS et al., (2011) assessed the current prevalence of major chronic, non communicable disease in the central region, Saudi Arabia; an epidemiological study was done among 9,149 samples of ages 17 to 80 years were randomly selected from the previous cohort study for inclusion. Diagnosis of Type II diabetes mellitus and obesity were based on world Health Organization criteria and concluded that the overall prevalence of Type II diabetes mellitus was 23.1% and the prevalence was significantly higher in males, (34.7%) than in females. The age adjusted prevalence of obesity was 40%

Andrew Grandinetti et al., (2011) conducted a study in rural community Hawaii to assess the Prevalence of diabetes. A cross sectional study was done among the samples of 1452 men and non pregnant women who were above 18 years of age. The results revealed that the prevalence of diabetes is three fold higher among Asian and Hawaiian groups than among Caucasians, even after adjusting for other risk factors

Bener A et al., (2011) conducted the study to determine the association between consanguineous marriage, obesity and environmental risk factors associated with Type II Diabetes Mellitus in Qatari population. The case control study was done includes 338 cases with diabetes and 338 controls without diabetes, face to face interview was based on a questionnaire. The study revealed that there were statistically significant differences between diabetic and control subjects with respect to Body Mass Index, low educational level, consanguinity, blood pressure, total cholesterol were more prevalent in diabetic patients.

Dutt D et al., (2011) conducted a study on risk factor assessment of Type II Diabetes Mellitus in a Tertiary hospital at Kolkata. A case control study design was used with the sample of 75 cases and 75 control group attending diabetes clinics and the results identified are family history of diabetes, urbanization, and self perceived stress and alcohol consumption. Hence identified risk factors need to be addressed in prevention and control strategies.

Gao JB et al., (2011) explored the disease characteristics and risk factors of Type II Diabetes Mellitus with he samples of 865 subjects were screened and diagnosed by oral glucose tolerance test based on American Diabetes Association criteria and the results revealed that no gender difference was found in the prevalence of Type II Diabetes Mellitus 42.59% in males and 48.18% in females and regarding risk factors high prevalence of obesity, hypertension, hyperlipidemia and smoking with less physical activity were associated with Type II Diabetes Mellitus.

Krairittichai U et al., (2011) conducted a study in Thailand to assess the prevalence and risk factors of diabetic neuropathy among patients with type II diabetes mellitus, A cross sectional study was used with the sample of 877 Type II diabetes mellitus patients and concluded that the prevalence of diabetic retinopathy with normoalbuminuria, microalbuminuria was 18.5% and 48% respectively and the prevalence of all diabetic nephropathy was 37.2%

Misra p et al., (2011) conducted study on extent of problem of diabetes in rural India. A systematic search was performed using electronic as well as manual methods, for a period of 15 years and the results revealed that 2.02 per 1000 population per year increase in diabetes prevalence. The rate of increase was high in males (3.33 per 1000 per year) as compared to females (0.88 per 1000 per year). Hence the prevalence of diabetes is raising in rural India and they suggest that population level and individual level measures are needed to combat this increase burden of diabetes

Sudheer. B et al., (2011) conducted a study on prevalence of known diabetes in Tirupathi urban population and to find out the role of other factors. A cross sectional study was designed and house to house inquiry was carried out with detailed questionnaire. The results revealed that out of 220 known diabetic patients among them 35(16%) were Type I diabetes and 185(84%) were Type II diabetic patients. Out of Type II diabetic patients 30(70%) fall in age between 30-45 years and 32(17.5%) fall in age between 46-55 years and 23(12.5%) are above 55 years. Regarding life style and habit, 45(24.5%) of the Type II diabetic patients have regular habit of both smoking and alcohols. Among total Type II diabetic patients 92% of them were unaware of the effect of other factors like smoking, alcohol and role of exercise in control of diabetes.

Sarah Wild et al., (2011) conducted " estimates for the year 2000 and projections for 2030" to estimate the prevalence of diabetes and the number of people of all ages with diabetes and diabetes prevalence was derived from studies meeting the criteria. The prevalence of diabetes for all groups worldwide was estimated to be 2.8% in

2000 and 4.4% in 2030. The total number of people with diabetes is projected to raise from 171 million in 2000 to 366 million by 2030. These findings indicate the diabetes epidemic

Constantine GR et al., (2010) studied the prevalence of diabetes and pre diabetes in adults in Srilanka, the cross sectional study was conducted; a multistage random cluster sampling technique was used with the sample of 4532 patients. The results revealed that the prevalence of overall Urban and rural Pre-diabetes was 11.5%, 13.6% and 11% respectively. The projected diabetes prevalence for the year 2030 is 13.9%, those with diabetes and pre diabetes compared with normal glucose tolerance were older, physically inactive, frequently lived in urban areas and has a family history of diabetes.

George Bakris et al., (2010) conducted a study on risk factor assessment for new onset of diabetes. The results revealed that the risk factors for Type II Diabetes Mellitus have been identified and they include obesity, impaired glucose metabolism, old age, and family history of diabetes, physical inactivity and more recently hypertension.

Talmud PJ et al., (2010) conducted study on utility of genetic and non-genetic risk factors in prediction of Type II Diabetes Mellitus, a workplace based prospective cohort study with the sample size of 5535 participants, initially healthy people of whom 302 developed new onset of Type II Diabetes Mellitus over 10 years and concluded that genetic variables are major risk factors for developing Type II Diabetes Mellitus

Zirie M et al., (2010) studied the determinants of Type II Diabetes Mellitus by cross sectional study in a rural area of Wardha district, the sample size of 306 persons above the age of 45 years were diabetic. The study revealed that the proportion of people diagnosed with Diabetes Mellitus increase with increasing age groups, the proportion of Diabetes was more among those who had family history of diabetes, BMI more than 25 and those with sedentary lifestyles

Bener A et al., (2009) conducted the study on prevalence of diagnosed and undiagnosed diabetes mellitus and its risk factors in a population-based study of Qatar", a cross sectional study was done in urban and semi urban primary health care centres, the study period is from January 2007 to July 2008 above 20 years of age, the study sample are 1434 subjects, the study was conducted using structured questionnaire followed by laboratory test. The results suggest that the overall prevalence of diabetes mellitus was 16.5%, smoking habits, family history of diabetes were the major contributors for diabetes mellitus.

Chan JC et al., (2009) investigated the prevalence of diabetes mellitus and impaired glucose intolerance among Hong Kong Chinese adults of working ages. The study subjects of 1513 employees from the public utility company, the results revealed that overall prevalence of diabetes is 4.5% and the prevalence of diabetes mellitus in men was 5.1% and 3.6% in women. Their data revealed that Hong Kong Chinese have a moderate to high susceptibility to non-insulin dependent diabetes when exposed to sufficient environmental and life style factors.

Frank B et al., (2009) conducted a study on diet, lifestyle and the risk of Type II Diabetes Mellitus in women with the sample of 84, 941 nurses. Information about their diet and lifestyle was updated periodically; during 17 years of follow up they documented 3,300 new cases of Type II Diabetes Mellitus. The results revealed that obesity, lack of exercise, poor diet, current smoking, alcohol were all associated with a significantly increased risk of diabetes

Haffner SM et al., (2009) conducted a study on epidemiology of Type II Diabetes Mellitus risk factors, cross sectional study was done and the results revealed that genetic factors, incidence of obesity and cultural effects leads to an increased incidence of obesity in those populations, which may lead to increased insulin resistance

Ohlson L.O et al., (2009) conducted the study on risk factors for Type II Diabetes Mellitus, a homogenous sample of randomly selected 54 years of age from Swedish population with the diabetes incidence 6.1%. The results shows that those with a positive family history of diabetes have 2.4 fold higher risk for developing diabetes than those without such history.

Enzo Bonora et al., (2008) conducted a study on population based incidence rates and risk factors for Type II diabetes in white individuals. Through stratified random sampling of 1000 samples he made assessment of risk factors and concluded that hyperglycemia, obesity, insulin resistance and impaired insulin response to glucose are independently predictors of Type II Diabetes Mellitus.

Studies related to alcohol consumption as the risk factor of Type II Diabetes Mellitus

Carlos A et al., (2011) conducted " a prospective study of drinking patterns in relation to risk of Type II Diabetes Mellitus among men", using a data from a 12 year prospective study, a sample of 1,571 new cases of Type II Diabetes Mellitus were documented. Frequency of consumption conveys the greatest risk of Type II Diabetes Mellitus, but the beverage choice did not alter the risk.

Sofia Carlson et al., (2011) studied "Alcohol consumption and the incidence of Type II Diabetes Mellitus" to investigate alcohol consumption in relation to incidence of Type II Diabetes Mellitus. A study sample comprises 22,778 twins of the Finnish by cohort study. Information on alcohol, smoking, diet, and physical activity, medical and social conditions was obtained by questionnaire; the results concluded that high alcohol consumption was associated with an increased incidence of Type II Diabetes Mellitus in lean women but not in overweight women or men. In women binge drinking was associated with an increased incidence of Type II Diabetes Mellitus. Hence binge

drinking and high alcohol consumption may increase the risk of Type II Diabetes Mellitus in women.

Joline W et al., (2010) investigated whether a polymorphism in the alcohol dehydrogenase gene modifies the association between alcohol consumption and Type II Diabetes Mellitus. A sample from 640 women with incident of Type II Diabetes Mellitus as case control studies and 1000 control subjects from Nurse's health study and 383 men with incident of diabetes and 382 control subjects from the health professional follow up study was done. The results revealed that moderate to heavy alcohol consumption was associated with a decreased risk of diabetes among women but not men and alcohol dehydrogenase genotype modified the relation between alcohol consumption and diabetes in women

Linda w et al., (2010) conducted a study on alcohol consumption and the risk of Type II Diabetes Mellitus, the authors conducted a prospective study of Type II Diabetes Mellitus risk associated with alcohol consumption in a cohort study with the sample of 12,261 middle aged participants, who are followed between 3 and 6 years. Alcohol consumption at baseline was characterized into lifetime abstainers, former drinkers and current drinkers. Incident diabetes was determined by blood glucose measurements and self report results of this study support the hypothesis that high alcohol intake increases diabetes risk among middle aged men or women.

Manson et al., (2010) examined the relationship between alcohol consumption and the incidence of Type II Diabetes Mellitus among relatively young and middle aged women. A prospective study was done among 109690 women aged 25 to 42 years during 10 years of follow up, 935 incident cases of Type II Diabetes Mellitus was identified. The results revealed that women who reported 30 grams per day or more of liquor intake showed a significantly increased risk of Diabetes Mellitus compared with those who did not report liquor intake

Dolly O et al., (2009) done a study to clarify the dose response relationship between alcohol consumption and Type II Diabetes Mellitus, a systematic computer assisted and hand search was conducted to identify the diabetic patients through longitudinal design. Through 20 cohort studies those who met the inclusion criteria was selected. The results revealed that when consuming more than 22 g/day can become deleterious at just over 60 g/day are at more risk of developing Type II Diabetes Mellitus.

Karlon H et al., (2009) examined the prevalence of alcohol, tobacco and drug use and their relation to the age of onset of Type II Diabetes Mellitus among inner city minority diabetic patients who sought medical clinics in South Central Los Angel's. A cross sectional study design was used to sample of 392 diabetic patients. The results showed that 71 diabetic patients (18%) reported that they recently consumed alcohol. 69 patients (17%) reported smoking, 38 diabetic patients reported a history of regular illicit drugs which indicated earlier onset of Type II Diabetes Mellitus

Michel M et al., (2009) studied "changes in alcohol consumption and subsequent risk of Type II Diabetes Mellitus in men. A prospective study was examined with the study sample of 38,031 men and a total of 1,905 cases of Type II Diabetes Mellitus occurred. The results observed that increase in alcohol consumption overtime was associated with risk of Type II Diabetes Mellitus.

Andrea A Howard et al., (2008) conducted a study on alcohol consumption and diabetes risk in the diabetes prevention program and determined whether alcohol consumption was predictor of incident Type II Diabetes Mellitus in individuals enrolled in the diabetes prevention program; a sample of 3175 diabetic patients were selected, participants were randomly assigned to placebo, metformin or lifestyle modification and were followed for a mean of 3.2 years alcohol intake was assessed at baseline. The results revealed that participants who reported higher calorie intake and higher HDL concentration and it was found that there is increased risk of Type II Diabetes Mellitus

Julia H et al., (2008) conducted a study on effect of alcohol consumption on Diabetes Mellitus, cohort study was done with 974 study participants, the results revealed that compared with no alcohol use moderate consumption is associated with a 33% to 50% of lower incidence of diabetes and compared with moderate consumption, heavy consumption may be associated with upto 43% increased incidence of Type II Diabetes Mellitus

Hodge A.M et al., (2006) conducted the study to examine associations between amount and frequency of alcohol consumption and Type II Diabetes Mellitus, a prospective study was done with the sample of 36, 527 adults aged 40-69 years at baseline and identified 362 cases and the results revealed that former drinkers had higher risks than lifetime abstainers. A high daily intake of alcohol, even on or before 1-3 days a week, may increase the risk of Type II Diabetes Mellitus.

Congrave et al., (2005) conducted the study at Sydney on risk of incident of Type II diabetes mellitus on alcohol dependence, a prospective study was conducted and the results revealed that higher amount of alcohol consumption increased the risk of Type II diabetes mellitus

Fumiaki Imamura et al., (2005) studied "Confounding by dietary patterns of the inverse association between alcohol consumption and Type II diabetes mellitus risk" the authors modeled the longitudinal study of association between alcohol consumption and 7 years risk of Type II diabetes mellitus in 2,879 adults the results suggested that alcohol intake, not dietary patterns associated with alcohol intake, is responsible for the observed inverse association with Type II diabetes mellitus.

Iris Shai et al., (2005) conducted a study on glycemic effects of moderate alcohol intake among patients with Type II Diabetes Mellitus." A randomized control trial was done among 109 patients; the study concluded that among patients with Type II

Diabetes Mellitus who had previously abstained from alcohol, initiation of moderate alcohol consumption reduced fasting blood sugar but not postprandial glucose.

Jolini W.J et al., (2005) conducted a study on alcohol consumption and risk of Type II Diabetes Mellitus among older women, the samples of 16,330 women aged 49 to 70 years at Europe was selected. During follow up, 760 cases of Type II Diabetes Mellitus were documented. The results revealed that lifetime alcohol consumption was associated with the risk of Type II Diabetes Mellitus.

PART II

CONCEPTUAL FRAMEWORK

A conceptual framework broadly present an understanding phenomenon of interest reflect the assumption and philosophic views of model's designer. It is a device that helps to stimulate research and the extension of knowledge by providing both directing and impetus. A framework may serve as a spring for a scientific advancement.

The conceptual framework for the study is based on Johnson's Behavioral system model views the client as a behavioral system consisting of interdependent subsystem. The Subsystem alone affected the behaviors by other some unstable threats. The individual as the behavioral system should maintain an optimum organization and integration of subsystem.

The behavioral system continually strives to maintain a healthy state by adjusting and adapting the internal and external threat forces. Each behavioral system has structural requirements (goal, predisposition to act, scope of action and behavior) and functional requirements (Protection from harmful influences, nurturance, and stimulation to enhance growth and prevent stagnation.

The investigator adopted the Johnsons Behavioral system model as a basis for the current study which aims to compare the risk factors of type II Diabetes Mellitus among alcoholic and non alcoholic males

Dorothy E Johnson proposed her model to focus on efficient and effective behavioral functioning among the clients to prevent illness with regard to person. She explained subsystem that requires some regulation and adjustment to maintain a balance.

MODIFIED DOROTHY E. JOHNSON'S BEHAVIORAL SUBSYSTEM MODEL (1980)

Affiliative subsystem

As the investigator felt that there is necessary to develop social interaction and it form the basis for all social organization it promotes survival and sense of security

Dependency subsystem

The risk factors of type II Diabetes Mellitus found to be dependent on the life style habits which are good or bad for their health. The dependency system result in approval, attention, recognition and physical assistance

Ingestive subsystem

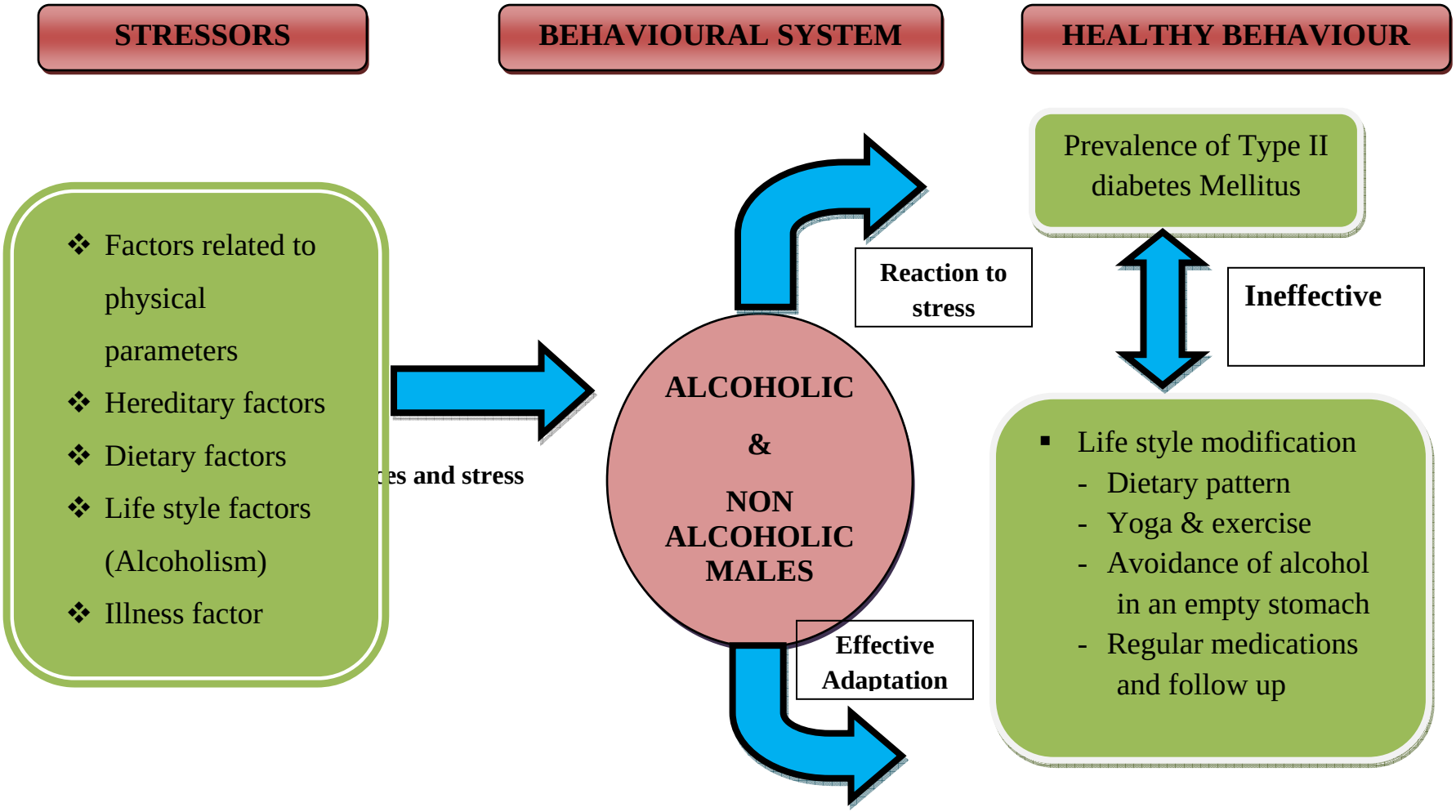
In this the main risk factors is alcoholism in males with type II Diabetes Mellitus in which they are consuming in an empty stomach in raw manner leads to insulin resistance

Aggressive subsystem

In which the investigator found that the main risk factors such as physical parameters, hereditary factors, dietary factors, Lifestyle factors, illness factor, factors related to stress made to free their aggressive behavior

FIGURE – 1

MODIFIED DOROTHY E. JOHNSON'S BEHAVIORAL SUBSYSTEM MODEL (1980)



CHAPTER – III

METHODOLOGY

This chapter deals with the description of the methods and blueprint of the study by using different steps for collecting and organizing data for the investigation.

It includes the description of the research approach, the research design, variables, setting, population, the sample and the sample size, the sampling technique, the sampling criteria, the development and description of the tool, the pilot study, the data collection procedure and the plan for data analysis in the study.

The present study was done to assess the prevalence and compare the risk factors of type II Diabetes Mellitus among alcoholic and nonalcoholic males

Research approach

A research approach guides the researcher in the nature of data to be collected and the method of analysis. To accomplish the objectives of the current study quantitative research approach was chosen by the investigator.

Research design

The design chosen to assess the prevalence and compare the risk factors of Type II Diabetes Mellitus among alcoholic and nonalcoholic males was non-experimental exploratory design that helps to provide factual information about the existing phenomena.

Setting of the study

The study was conducted in Medavakkam rural area, which belongs to St.Thomas Mount block, Kancheepuram district and is located around the Upgraded Primary Health centre, Medavakkam. It has 9 village panchayats covering the population of 1, 01,527. One among the 9 village panchayat is Perumbakkam village panchayat which covers the population of 37,940. This panchayat has 24 streets. Among these Kalaignar Nagar and Vanadurai, which has sub streets adopted by the department of Community Health Nursing, College of Nursing to provide curative and preventive care to the population. Kalaignar nagar which has 8 substreets with the population of 1800 and Vanadurai which has 11 substreets with the population of 3050 has been selected to conduct the study.

The selection of areas, has been done on the basis of

1. Geographical proximity
2. Feasibility of conducting the study
3. Availability of samples

Population

The target population of this present study comprised of males with known diabetes. The accessible population for the present study are males with known diabetes residing at kalaignar nagar and Vanadurai of Medavakkam. The total population (males with known sdiabetes) in Kalaignar nagar is 85 and in Vanadurai is 186 with the total of 271 diabetic male patients.

Sample and sample size

The sample for the present study comprised of males with known diabetes of both alcoholic and non alcoholic males who have met the inclusion criteria. The sample size for the present study was 100 males with known diabetes. (50-Alcoholic males, 50- non-alcoholic males)

Sampling technique

Sampling technique used for the present study was simple random sampling by using lottery method. The investigator conducted a survey in the Kalaignar nagar and Vanadurai streets of Medavakkam to identify the total number of males with known diabetes.

The name list of males with known diabetes from the selected streets was collected with the total of 271diabetic males. By using lottery method 50 alcoholic diabetic males and 50 non alcoholic diabetic males were selected from the list.

Table -1: Study population details:

S.NO	NAME OF THE STREETS	MALES WITH DIABETES	ALCOHOLIC DIABETIC MALES	NON ALCOHOLIC DIABETIC MALES
1.	Kalaignar Nagar	**85 (55- non alcoholics 30-alcoholic)**	**16**	**16**
2.	Vanadurai	**186 (120-Non-Alcoholic 66-Alcoholic)**	**34**	**34**
	TOTAL	**271**	**50**	**50**

Criteria for Sample selection

Inclusion Criteria

- Males with Type II Diabetes Mellitus above 30 years of age
- Male willing to participate
- Males who can speak and understand Tamil

Exclusion Criteria

- Males not available at the time of the study
- Males who are included in the pilot study

Variables

Variable is a characteristic or attribute of a person or an object that varies within the population under study. The variables of the study include;

Independent variables

An independent variable is a stimulus or activity that is manipulated or varied by the researcher to create an effect on dependent variable. In this study the independent variables are risk factors like physical parameters, hereditary, dietary pattern, lifestyle, illness, stress etc..

Dependent variables

A dependent variable is the response or outcome that the researcher wants to predict or explain. In this study prevalence of Type II Diabetes Mellitus is the dependent variable.

Development of the tool

A structured interview schedule was developed based on the objectives of the study, through review of literature on related studies, journals and books, opinion from experts. All these helped in the ultimate development of the tool.

Description of the instrument

The instrument used in this study consists of

Part I- It consists of demographic data which includes age, type of family, marital status, religion, Educational status, Occupation, Family income, habit of Alcohol Consumption

Part II- It consists of multiple choice questions which were prepared to assess the risk factors of Type II Diabetes Mellitus. The questions related to risk factors like Physical parameters, hereditary, dietary pattern, lifestyle, stress.

Reliability

The reliability of the present study was established by using test-retest method. The r value (0.824) is highly reliable. The tool was feasible and practicable

Content Validity

In order to measure the content validity the tool was given to two experts from the community health nursing department. Experts were requested to judge items for their clarity, relevance, comprehensiveness and appropriateness of content. Appropriate modifications were made in each section as per the suggestions given by the experts. Only items with 100% agreement were included in the interview schedule.

Pilot study

Pilot study was conducted in Bhavani Amman Koil Street of Medavakkam. 5 alcoholic males and 5 non alcoholic males with known diabetes were selected based on inclusion criteria. This street was not used for the study. The structured interview schedule was administered from 21.3.2011 to 25.3.2011. The investigator found that the instrument was feasible to use and further no modifications were needed before actual implementation of the study.

Data collection method

Data collection is the gathering of information needed to address or face a research problem. The data collection was done for a period of four weeks from 29.8.11 to 29.9.11. The data was collected on all the days except on Sundays. On an average 6-8 males were interviewed in a day between 9.00 -5.00 pm. Permission to conduct the study was obtained from the Medical Officer of the health centre, village health nurse, multipurpose Health worker who are working in the area. The study samples, males with known diabetes were screened using the sampling criteria and were selected by simple random sampling by lottery method. The purpose of the study was informed to the males. Confidentiality of the shared information was assured. Interview was conducted in their respective houses. Each male was interviewed separately. It took 30-45 minutes to collect data for each sample. The investigator posed the questions and responses one by one to the males with known diabetes. The response acceptable to the respondent was marked then and there. When males needed clarification of the question or responses was restated and repeated. The males with known diabetes of both alcoholic and non-alcoholic cooperated and participated willingly in the entire process of data collection.

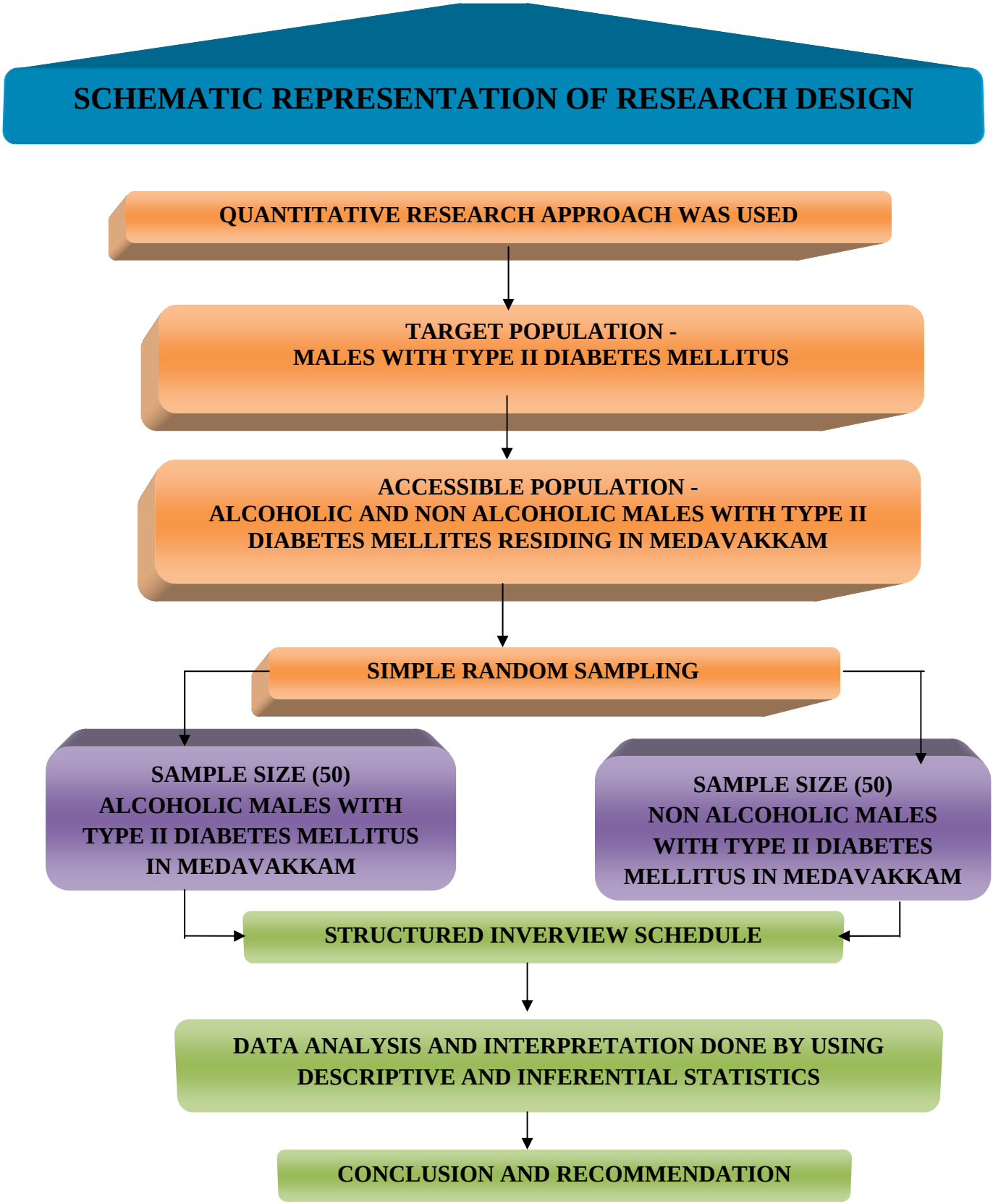
Plan for data analysis

Data analysis enables the researcher to reduce, summarize, organize, evaluate, interpret and communicate numerical information to obtain answer to research questions. Analysis and interpretation was done based on objectives of the study. The data was analyzed using descriptive statistics like frequency distribution, percentage, and inferential statistics like standard deviation, chi-square test, Independent t-test. The significant findings were expressed in the form of tables and figures.

Ethical consideration:

The study was conducted after the approval from the Ethical committee board from Madras Medical College, Chennai-03. Permission was obtained from the Block Medical Officer of the Upgraded Primary Health Centre, Medavakkam. Informed consent was obtained from all the participants. Confidentiality of the subjects information was maintained.

Figure – 2: Research Design



CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of the data to assess the prevalence and compare the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males and to determine the relationship with selected demographic variables. Analysis is the appraisal of the data and interpretation of the data consisting of relation between findings of the study to the research problem and theoretical framework for the study. An important function of the process of interpretation is to link the findings of the study to the main stream of scientific knowledge in the field.

The data collected from 50 alcoholic males and 50 non alcoholic males with known Diabetes Mellitus is tabulated, organized, analyzed and interpreted on the basis of objectives of the study.

Presentation of data:

The study findings of the samples are presented in the following sections.

Section –I Distribution of samples according to Demographic variables

Section – II Assess the prevalence of Type II Diabetes Mellitus among males.

Section – III Comparison of risk Factors of Type II Diabetes Mellitus among alcoholic and non alcoholic Males

Section – IV Association of the selected demographic variables with the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males

SECTION – I

PERCENTAGE DISTRIBUTION OF SAMPLES ACCORDING TO DEMOGRAPHIC VARIABLES

Table 2: Demographic profile

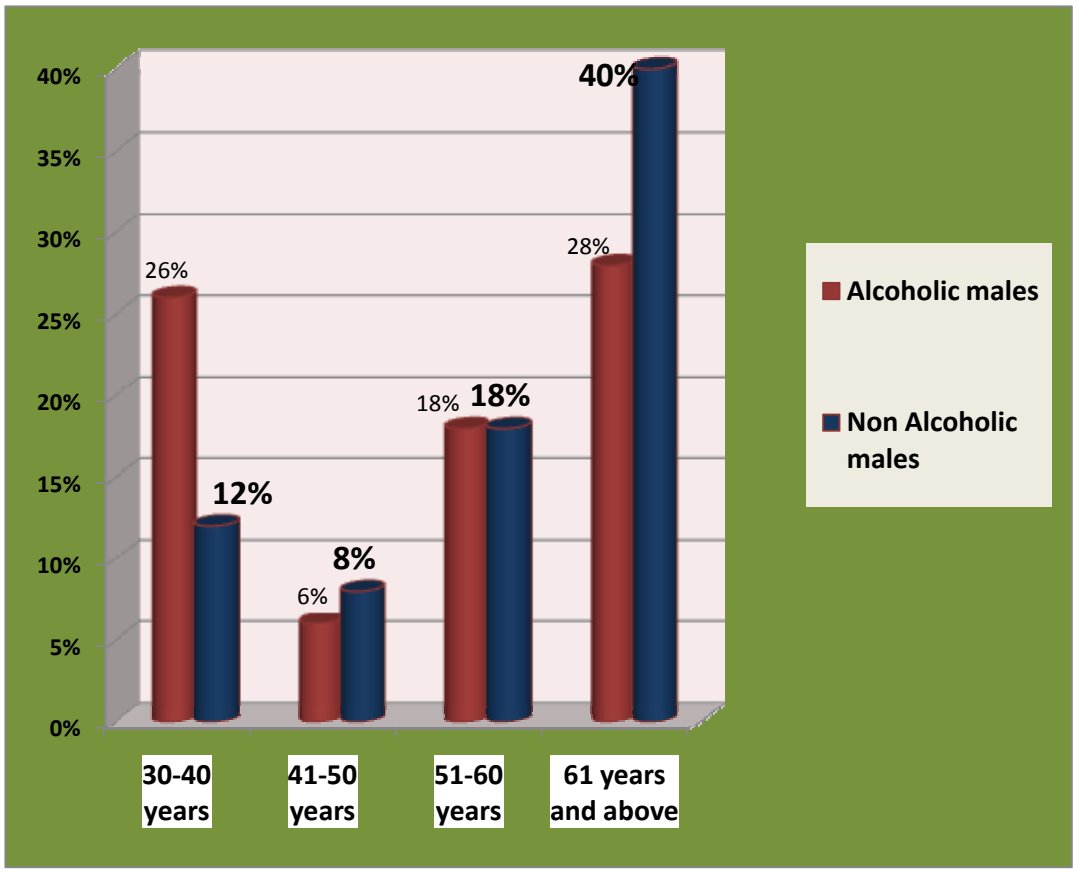
Demographic variables		**MALES WITH TYPE II DIABETES MELLITUS**			
		Alcoholic		**Non alcoholic**	
		N	**%**	**N**	**%**
Age	30 -40 yrs	16	26.0%	9	12.0%
	41 -50 yrs	5	6.0%	6	8.0%
	51 -60 yrs	13	18.0%	13	18.0%
	60 and above	16	28.0%	22	40.0%
Type of family	Nuclear family	31	62.0%	25	50.0%
	Joint family	19	38.0%	25	50.0%
Marital status	Single	2	4.0%	0	0.0%
	Married	43	86.0%	47	94.0%
	Widower	1	2.0%	3	6.0%
	Divorced	4	8.0%	0	0.0%
Religion	Hindu	41	82.0%	42	84.0%
	Christian	4	8.0%	2	4.0%
	Muslim	5	10.0%	6	12.0%
Educational status	Non formal education	5	10.0%	17	34.0%
	Primary education	23	46.0%	12	24.0%
	High school	18	36.0%	10	20.0%
	Higher secondary	4	8.0%	11	22.0%
Occupation status	Unemployed	8	16.0%	19	38.0%
	Government	0	0.0%	4	8.0%
	Private	20	40.0%	11	22.0%

	Self employed	22	44.0%	16	32.0%
Monthly income	<Rs.1000	0	0.0%	0	0.0%
	Rs.1001 – 2000	9	18.0%	8	16.0%
	Rs.2001 – 3000	10	20.0%	14	28.0%
	Rs.3001 – 4000	25	50.0%	14	28.0%
	>Rs. 4001	6	12.0%	14	28.0%
History of Hypertension	Yes	24	48.0%	28	56.0%
	No	26	52.0%	22	44.0%
History of heart disease	Yes	13	26.0%	9	18.0%
	No	37	74.0%	41	82.0%
History of high cholesterol	Yes	8	16.0%	12	24.0%
	No	42	84.0%	38	76.0%
History of diabetes	Yes	50	100.0%	50	100.0%
If yes, how many years	< 1 yr	10	20.0%	5	10.0%
	1 -2 yrs	16	32.0%	10	20.0%
	3 - 5 yrs	18	36.0%	21	42.0%
	>5 yrs	6	12.0%	14	28.0%

Table 2 reveals that majority of the alcoholic males (26%) and non alcoholic males (12%) belong to the age group of 30-40 years. More than half of the proportions of the alcoholic males (62%) and non alcoholic males (50%) are in nuclear family. Higher proportions of the alcoholic males (41%) and non alcoholic males (42%) are Hindus. Majority of the alcoholic males (50%) and non alcoholic males (28%) family income is Rs.3001-4000. Majority of the alcoholic males (36%) and non alcoholic males (42%) have the history of Type II Diabetes Mellitus within 3 to 5 years.

Figure -3

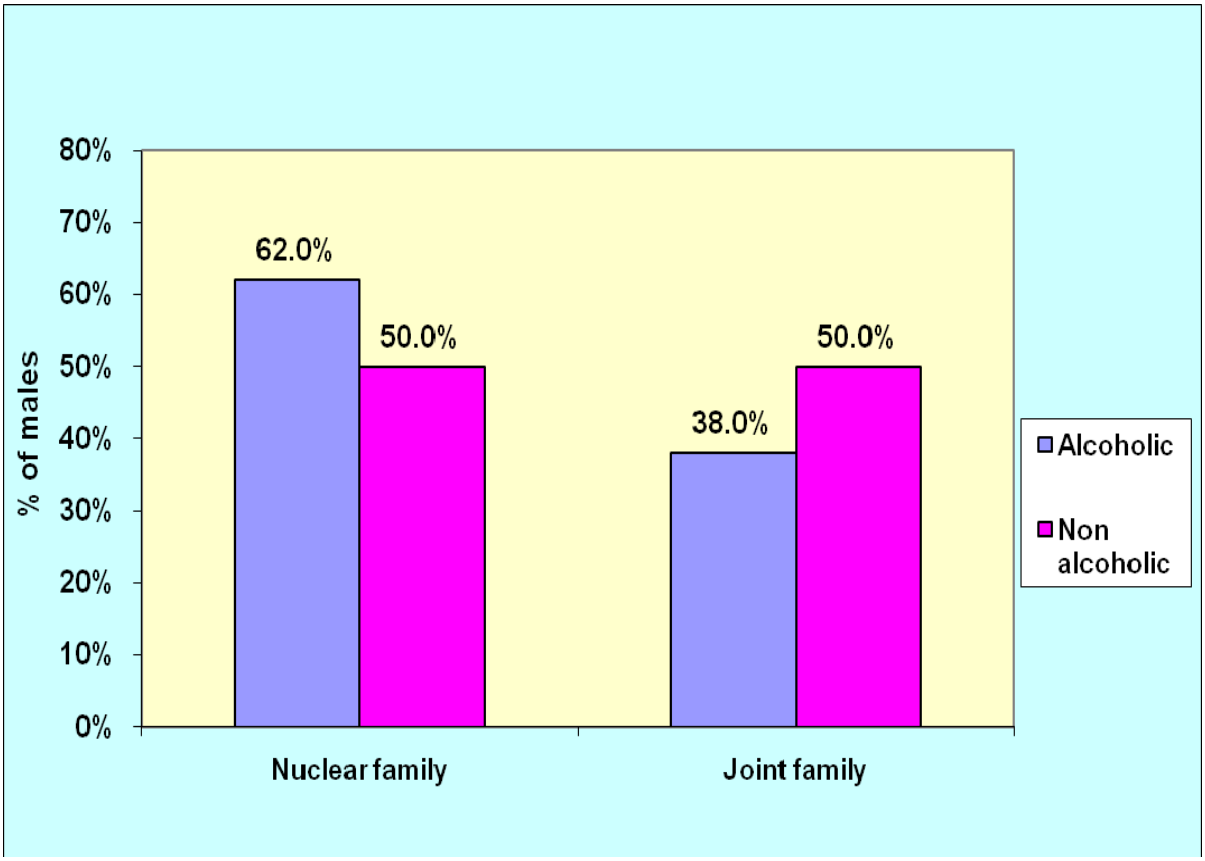
Distribution of Alcoholic and Non alcoholic males according to their age



The above figure reveals that majority of the alcoholic males (26%) and non alcoholic males (12%) belongs to the age group of 30-40 years

Figure: 4

Distribution of Alcoholic and Non alcoholic males according to their Family type



The above figure reveals that majority of the alcoholic males (62%) are in nuclear family and non alcoholic males (50%) are in Joint family

SECTION – II

ASSESS THE PREVALENCE OF TYPE II DIABETES MELLITUS AMONG MALES

Figure 5: Distribution of prevalence of Type II Diabetes Mellitus Among Males

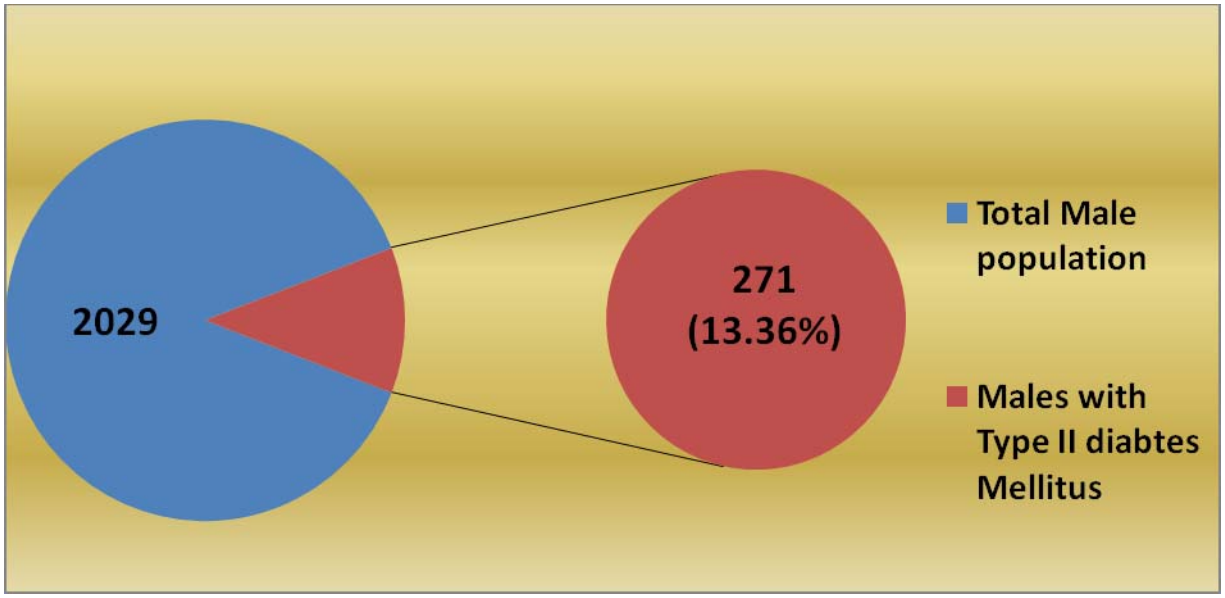


Table 3: PREVALENCE OF TYPE II DIABETES

		No. of males	Percentage of Proportion of diabetes with 95% Confidence interval
Type II Diabetes Males	Population	2029	13.36%(11.92 – 14.88)
	Diabetes	271	

Table 3 shows that among the male population 2029 and 271(13.36%) are identified as Type II Diabetes Mellitus. Prevalence Proportion of percentage. The mean difference (11.92 – 14.88) percentage of proportion of diabetes is 95% with Confidence interval

COMPARISON OF RISK FACTORS OF TYPE II DIABETES MELLITUS AMONG ALCOHOLIC AND NON- ALCOHOLIC MALES

Table: 4 Factors related to physical Parameters

		Males with Type II Diabetes Mellitus				Pearson chi square test
		Alcoholic		Non alcoholic		
		N	%	N	%	
Body Mass Index	< 25	3	6.0%	6	12.0%	
	25 – 30	19	38.0%	28	56.0%	
	30 – 35	21	42.0%	14	28.0%	$\chi 2$=6.90 P=0.07 DF=3
	>35	7	14.0%	2	4.0%	
Waist circumference	< 94 cm	12	24.0%	14	28.0%	
	94 - 102 cm	26	52.0%	21	42.0%	
	102 - 110 cm	10	20.0%	13	26.0%	$\chi 2$=1.08 P=0.78 DF=3
	>110 cm	2	4.0%	2	4.0%	

Table 4 shows that among the alcoholic males (42%) and non alcoholic males (28%) belong to the Body mass Index of 30-35. Regarding the waist circumference, (52%) of alcoholic males and (42%) of the non alcoholic males have waist circumference of 94-102cm. which is not statistically significant. Hence there is no difference in the physical parameters among alcoholic and non alcoholic males.

Table: 5 Factors related to Hereditary

		Males with Type II Diabetes Mellitus				Pearson chi square test
		Alcoholic		Non alcoholic		
		N	%	N	%	
Family History of Diabetes	Yes	21	42.0%	26	52.0%	$\chi 2=1.00$ P=0.311 DF=1
	No	29	58.0%	24	48.0%	
Family History of Hypertension	Yes	7	14.0%	15	30.0%	$\chi 2=3.84$ P=0.05* DF=1
	No	43	86.0%	35	70.0%	
Family History of Obesity	Yes	5	10.0%	0	0.0%	$\chi 2=5.26$ P=0.02* DF=1
	No	45	90.0%	50	100.0%	

Table 5 depicts that there were significance (p=0.05) (p=0.02) in the Hereditary factors of family history of hypertension and family history of Obesity. This shows that compared to the family history of diabetes, the other factors like family history of hypertension and family history of obesity are the major risk factors of Type II Diabetes Mellitus among males

Table: 6 Factors related to Dietary pattern

		Males with Type II Diabetes Mellitus				Pearson chi square test
		Alcoholic		Non alcoholic		
		N	%	N	%	
Habit of taking fast food	Never	17	34.0%	18	36.0%	$\chi 2=10.3$ P=0.01** DF=3
	Rarely	22	44.0%	11	22.0%	
	Most often	11	22.0%	15	30.0%	
	Always	0	0.0%	6	12.0%	
Using palm oil for cooking	Never	2	4.0%	3	6.0%	$\chi 2=17.66$ P=0.01** DF=3
	Rarely	14	28.0%	28	56.0%	
	Most often	22	44.0%	4	8.0%	
	Always	12	24.0%	15	30.0%	
	Never	15	30.0%	32	64.0%	
Using ghee with food	Rarely	28	56.0%	13	26.0%	$\chi 2=12.6$ P=0.01** DF=3
	Most often	2	4.0%	2	4.0%	
	Always	5	10.0%	3	6.0%	
	Never	7	14.0%	12	24.0%	
	Rarely	32	64.0%	25	50.0%	
Eating oily snacks	Most often	10	20.0%	13	26.0%	$\chi 2=3.56$ P=0.31 DF=3
	Always	1	2.0%	0	0,0%	
	Never	18	36.0%	17	34.0%	
	Rarely	24	48.0%	28	56.0%	
Taking processed food	Most often	8	16.0%	2	4.0%	$\chi 2=6.93$ P=0.08 DF=3
	Always	0	0.0%	3	6.0%	

Table 6 shows that there was significance (p=0.01) (p=0.01) in having a habit of taking fast food and using palm oil for cooking. There was also significance (p=0.01) in the usage of ghee in the food. This shows that in dietary pattern having a habit of taking fast food, ghee and using palm oil for cooking is the major risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males

Table: 7 Factors related to Life style

		Males with Type II Diabetes Mellitus				Pearson chi square test
		Alcoholic		Non alcoholic		
		N	%	N	%	
Habit of drinking alcohol	Yes	50	100.0%	0	0.0%	$\chi 2$=100.0 P=0.001 DF=1
	No	0	0.0%	50	100.0%	
often taking alcohol	Daily	17	34.0%			NA
	1 -3 times in a week	24	48.0%			
	4 -6times in a week	7	14.0%			
	Occasionally	2	4.0%			
Drinking alcohol before meals	Never	13	26.0%			NA
	Rarely	29	58.0%			
	Most often	8	16.0%			
Drinking alcohol with sugary mixed drinks	Never	17	34.0%			NA
	Rarely	25	50.0%			
	Most often	8	16.0%			
overeat after drinking alcohol	Never	7	14.0%			NA
	Rarely	21	42.0%			
	Most often	15	30.0%			
	Always	7	14.0%			

Habit of fasting	Never	28	56.0%	35	70.0%	$\chi 2$=7.09 P=0.02* DF=2
	Rarely	18	36.0%	15	30.0%	
	Most often	4	8.0%	0	0.0%	
Habit of doing exercise daily	Never	14	28.0%	4	8.0%	$\chi 2$=8.59 P=0.04* DF=3
	Rarely	32	64.0%	36	72.0%	
	Most often	3	6.0%	6	12.0%	
	Always	1	2.0%	4	8.0%	
Habit of doing meditation	Never	2	4.0%	6	12.0%	$\chi 2$=2.17 P=0.14 DF=1
	Rarely	48	96.0%	44	88.0%	$\chi 2$=100.0 P=0.001 DF=1

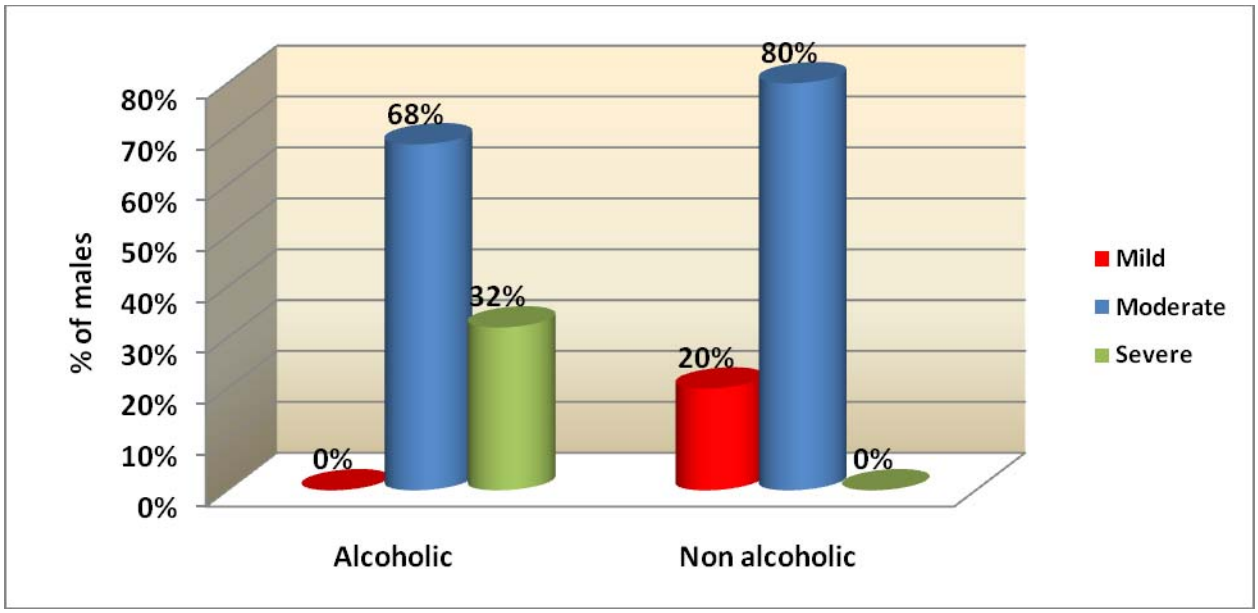
Regarding the factors related to life style table 7 shows that there was significance (p=0.02) (p=0.04) in having the habit of fasting and not exercise daily. Hence the lifestyle factor habit of fasting and lack of exercise are the major risk factors of Type II Diabetes Mellitus alcoholic and non alcoholic males.

Table 8: Factors Related To Illness

		Males with Type II Diabetes Mellitus				Pearson chi square test
		Alcoholic		Non alcoholic		
		N	%	N	%	
Do you have history of Thyroid disorder	Yes	1	2.0%	0	0.0%	$\chi 2=1.01$ P=0.31 DF=1
	No	49	98.0%	50	100.0%	
Have you had any major surgeries or trauma	Yes	3	6.0%	0	0.0%	$\chi 2=3.09$ P=0.08 DF=1
	No	47	94.0%	50	100.0%	
Do you have history of any recurrent infection	Yes	6	12.0%	1	2.0%	$\chi 2=3.84$ P=0.05* DF=1
	No	44	88.0%	49	98.0%	
Do you have a history of any liver disease	Yes	1	2.0%	0	0.0%	$\chi 2=6.93$ P=0.08 DF=1
	No	49	98.0%	50	100.0%	

Table 8 reveals that there was significance (p= 0.05) in having history of recurrent infection. This shows that in the illness factor history of recurrent infection is the risk factor of Type II Diabetes Mellitus among alcoholic and non alcoholic males.

Figure 6: Factors related to Stress



Regarding the level of stress the above figure 4 shows that there was significance (P=0.001). This shows that for both alcoholic and non alcoholic males stress is the major risk factor for Type II Diabetes Mellitus.

SECTION – IV

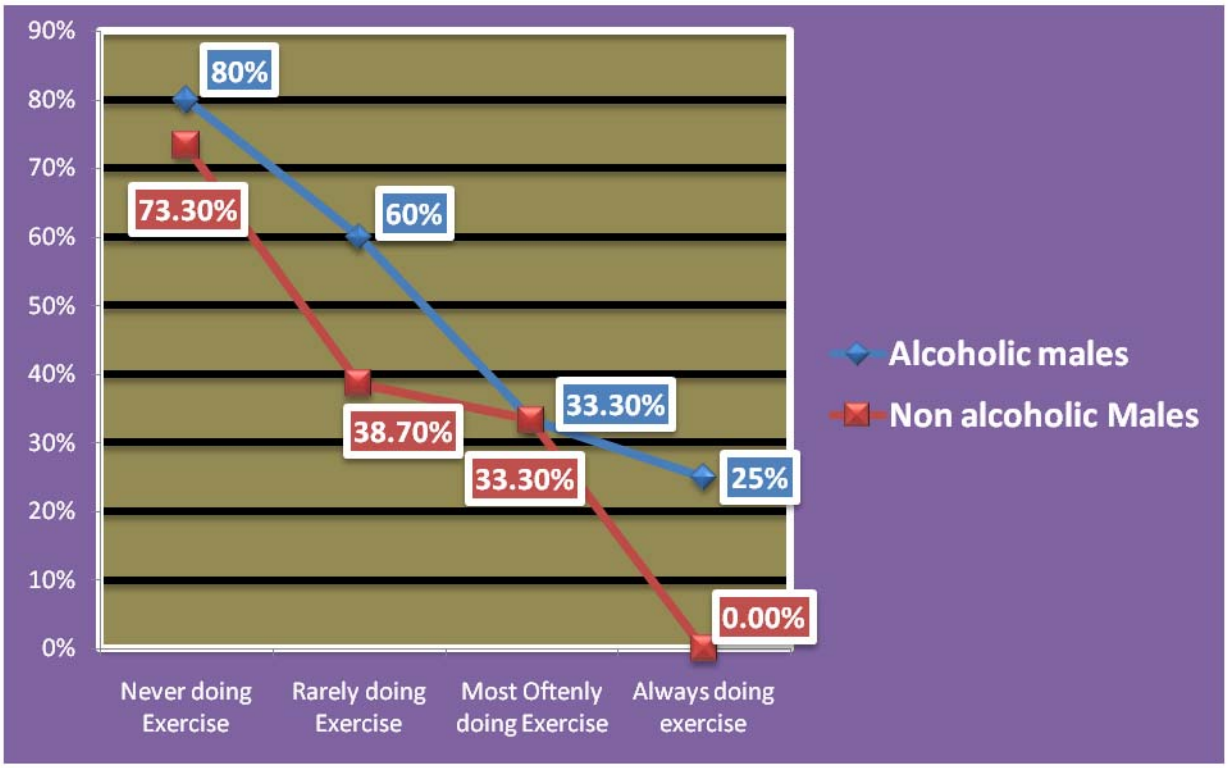
ASSOCIATION OF THE RISK FACTORS OF TYPE II DIABETES MELLITUS WITH SELECTED DEMOGRAPHIC VARIABLESBAMONG ALCOHOLIC ANDNON ALCOHOLIC MALES

Table: 9 Association between the risk factors of Type II Diabetes Mellitus and the age among alcoholic and non alcoholic males

Risk factors of Type II Diabetes Mellitus		Alcoholic males						Pearson chi square test	Non alcoholic males						Pearson chi square test
		Age							Age						
		30-40 years		41-60 years		Above 60 years			30-40 years		41-60 years		Above 60 years		
Body mass index	< 25	3	100 %	0	0.0%	0	0.0%	$\chi 2$=13.83 P=0.03* DF=6	4	66.7%	2	33.3%	0	0.0%	$\chi 2$=20.96 P=0.002** DF=6
	25-30	3	15.8%	11	57.9%	5	26.3%		2	7.1%	20	71.4%	6	21.4%	
	30-35	7	33.3%	11	52.4%	3	14.3%		0	0.0%	10	71.4%	4	28.6%	
	> 35	0	0.0%	4	57.1%	3	42.9%		0	0.0%	1	50.0%	1	50.0%	
Family History of Diabetes	Yes	7	33.3%	10	47.6%	4	19.0%	$\chi 2$=11.03 P=0.01** DF=2	5	19.2%	13	50.0%	8	30.8%	$\chi 2$=13.83 P=0.03* DF=2
	No	6	20.7%	16	55.2%	7	24.1%		1	4.2%	20	83.3%	3	12.5%	

The above table shows that there was significance (0.03) (0.002) in body mass index. There is also significance (0.01) (0.03) in the family history of Diabetes Mellitus among alcoholic and non alcoholic males. This shows that males with the age group of 30 – 40 years are with increased Body mass index among alcoholic males than non alcoholic males and in the family history of Type II Diabetes Mellitus with the age group of 30-40 years are at increased risk among alcoholic males than non alcoholic males

Figure- 7: Association between the risk factors of Type II Diabetes Mellitus and History of Hypertension among alcoholic and non alcoholic males



The above figure shows that there was significance (0.05) in the history of Hypertension and doing exercise. This shows that alcoholic males never and rarely doing exercise with the history of hypertension are increased risk of Type II Diabetes Mellitus than non alcoholic males.

Table: 10 Association between risk factors of Type II Diabetes Mellitus (stress) and demographic variables among alcoholic and non alcoholic males

Demographic variables		Alcoholic males Level of stress				Pearson chi square test	Non alcoholic males Level of stress				Pearson chi square test
		Moderate		Severe			Moderate		Severe		
		n	%	n	%		n	%	n	%	
Marital status	Single	2	100%				0	0.0%	0	0.0%	
	Married	29	67.4%	14	32.6 %	χ^2=2.01 P=0.57 DF=1	8	17.0%	39	83.0%	χ^2=4.33 **P=0.04*** DF=1
	Widow	1	100%				2	66.7%	1	33.3%	
	Divorced	2	50%	2	50%		0	0.0%	0	0.0%	
Educational status	Non formal education	3	60%	2	40.0 %		7	41.2%	10	58.8%	
	Primary education	17	73.9%	6	26.1 %	χ^2=0.72 P=0.86 DF=1	2	16.7%	10	83.3%	χ^2=8.16 **P=0.04*** DF=1
	High school	12	63.2%	7	36.8 %		1	10.0%	9	90.0%	
	Higher secondary	2	66.7%	0	33.3 %		0	0.0%	11	100.0 %	
Occupation status	Unemployed	2	25.0%	6	75.0 %	χ^2=8.775 **P=0.01** DF=1	50	26.3%	14	73.7%	χ^2=2.54 P=0.47 DF=1
	Private	14	70.0%	6	30.0 %		1	9.1%	10	90.9%	
	Self employed	18	81.8%	4	18.2 %		4	25.0%	12	75.0%	

Monthly income	Rs.1000 – 2000	2	28.6%	7	71.4 %	χ^2=11.42 **P=0.01** ** DF=1	2	25.0%	6	75.0%	χ^2=1.33 P=0.72 DF=1
	Rs.2000 – 3000	5	50.0%	5	50.0 %		2	14.3%	12	85.7%	
	Rs.3000 – 4000	20	80.0%	5	20.0 %		2	14.3%	12	85.7%	
	>Rs. 4000	5	83.3%	1	16.7 %		4	28.6%	10	71.4%	
History of Hypertension	Yes	12	50.0%	12	50.0 %	χ^2=6.87 **P=0.01** ** DF=1	2	7.1%	26	92.9%	χ^2=6.57 **P=0.01**** DF=1
	No	22	84.6%	4	15.4 %		8	36.4%	14	63.6%	

The above table shows that there is the significance (0.01) (0.04) in the level of stress with the demographic variables like marital status, educational status, occupational status, monthly income and history of hypertension among the alcoholic and non alcoholic males. This shows that stress is in major significance in the risk factors of type II Diabetes Mellitus among alcoholic and non alcoholic males.

CHAPTER V

DISCUSSION

The prevalence of Type II Diabetes Mellitus is growing rapidly worldwide and is reaching epidemic proportions that affect rural population especially males with the habit of alcohol consumption. However health care is rapidly improving in preventing the risk factors of Type II Diabetes Mellitus, since people are unaware of the fact that alcohol is also one of the risk factor for Type II Diabetes Mellitus. In rural community alcohol plays a major role because of the easy availability and because of heavy physical workload among the males become addict to it, and they consume much in an empty stomach, which as a result increases insulin sensitivity and susceptibility for Type II DiabetesMellitus.

Assessing the risk factors among alcoholic and non alcoholic diabetic males is really a challenging in this dynamic world. This area of research aims to assess the prevalence and compare the risk factors of Type II Diabetes Mellitus among the alcoholic and non alcoholic males. Structured interview schedule was framed based on the demographic data and the risk factors of Type II Diabetes Mellitus

DEMOGRAPHIC FINDINGS

The present study reveals that among the alcoholic males 26% of them are between 36-40 years of age, 6% are in between 41-45 years, 18% are in between 46-50 years, 28% between 51-55 years and 22% are between 56-60 years. Among the participants 62% are from nuclear family and 38% are from joint family.

The present study reveals that among the alcoholic males 86% of respondents are married, 4% are single, 2% were widower and 8% were divorced. Another finding of the study reveals that 10% of alcoholic males have non formal education, 46% have completed up to primary education, 36% have completed high school education and 8% are educated up to higher secondary level of education

The study reveals that regarding the occupational status 16% of alcoholic males are unemployed, 40% are working in private, 44% of them self employed, and 48% of the alcoholic males have history of hypertension. The study also reveals that 26% have history of heart disease and 16% have history of high cholesterol and also the study findings shows that 20% of alcoholic males have history of Type II Diabetes Mellitus less than 1 year, 32% have history of Diabetes Mellitus between 1-2 years, 36% of alcoholic males have 3-5 years of Diabetes Mellitus and 12% have more than 5 years of Type II Diabetes Mellitus.

Regarding the non alcoholic males the study reveals that 12% of them are between 36-40 years, 8% are in between 41-45 years, 18% are in between 46- 50 years, and 40% are in between 51-55 years, 22% in between 56-60 years. Among the participants 50% are from nuclear family and 50% are from joint family

The present study reveals that among the non alcoholic males 94% of respondents are married, 6% are widowers. Another finding of the study reveals that 34% of non alcoholic males have non formal education, 24% have completed up to primary education, 20% have completed high school and 22% are educated higher secondary level education.

Among the participants regarding the occupational status 38% of non alcoholic males are unemployed, 8% are working in government, 22% are working in private and 32% are self employed. 56% of the non alcoholic males have history of hypertension. The study also reveals that 18% have history of heart disease and 24% have history of high cholesterol and also the study findings reveals that 10% of non alcoholic males have history of diabetes less than 1 year, 20% have history of Diabetes Mellitus between 1-2 years, 42% of them have 3-5 years of Diabetes Mellitus and 28% have more than 5 years of age.

The first objective of the study is to assess the prevalence of Type II Diabetes Mellitus among males

In this study among the male population 13.36% of the males are identified as having known diabetes and the percentage proportion of the diabetes is 95% with the confidence interval of (11.92-14.88). This study was supported by **Constantine.et al**, in their study the prevalence of Type II diabetes among males of Srilankan males was assessed and found that 13.9% of them were affected by Type II Diabetes Mellitus

And also **Misra p.,et al (2011)** conducted study on extent of problem of diabetes in rural India, a systematic search was performed using electronic as well as manual methods, for a period of 15 years and the results revealed that 2.02 per 1000 population per year increase in diabetes prevalence. The rate of increase was high in males (3.33 per 1000 per year) as compared to females (0.88 per 1000 per year). Hence the prevalence of diabetes is raising in rural India, they suggests that population level and individual level measures are needed to combat this increase burden of diabetes

The second objective of the study of the study is to compare the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males

The present study reveals that 42% of the alcoholic males and 28% of the non alcoholic males are with the Body Mass Index of 30-35 and half of the proportion of the alcoholic males have the waist circumference of 94-102 cm and 42% of the non alcoholic males with the waist circumference of 94 to 102 cm. the investigator found that males with the habit of alcohol consumption have increased Body Mass Index and waist circumference than non alcoholic males.

This study was supported by Carlson (2003) in her study womens reporting alcohol consumption tended to have slightly higher Body Mass Index. There is also tendency for

an increased risk in lean and normal weight drunker and concluded that prolonged high consumption and Binge drinking may increase the risk of Type II Diabetes Mellitus.

The investigator found that 14% of the alcoholics and 30% of non alcoholics have family history of hypertension and 10% of the alcoholic males have family history of obesity. The study was supported by Enzo Bonora et al, identified obesity in the factor for the prevalence of Diabetes Mellitus

The study findings shows that regarding dietary pattern 22% of alcoholic males and 30% of non alcoholic males have the habit of taking fast food , and among the alcoholic males 24% and non alcoholic males 30% always use palm oil for cooking. 56% of alcoholic males and 26% of non alcoholic males use ghee in their food.

Similarly the study by Mohan (2007) in his study in Chennai, he reported that fast –foods culture which has overwhelmed cities and towns and also and also a major driver of diabetes epidemic. The prevalence of diabetes is now rapidly increasing among the rural areas due to rapid changes in the dietary habits.

During the data collection the investigator found that regarding life style among the alcoholic males, 34% of alcoholics having daily habit of taking alcohol, 58% of alcoholic males are rarely taking alcohol before meals and 16% of males drinking alcohol with sugar mixed drinks and 30% of males most often over eat after taking alcohol. A similar study by Andrea et al, in United States reported that compared with moderate drinkers, persons who are consuming more than 3 drinks daily have up to 43% increased risk of diabetes.

In the present study more than half of the proportion of males is rarely doing exercise and meditation regularly. The study findings shows that12% of the alcoholic males and 2% of non alcoholic males have history of recurrent infection. The study was supported by sudheer, in his study among the total 185 diabetic patients, 142 patients are not doing regular exercise and among them 89 patients had the habit of taking alcohol

The investigator found that among alcoholics half of the proportion of the males are with moderate stress (68%) and 32% of the males have severe stress and among non

alcoholic males 80% of them are with moderate stress and none of them have severe stress. This study was supported by Nancy, stated that illness and stress can trigger the high blood sugars.

The study findings are supported by Carlos A, et al, in their study they assessed various factors among alcoholics and identified that alcohol induces other risk factors when compared with non alcoholics.

Thus males in the rural community are unaware of the fact that alcohol consumption causes insulin sensitivity, as they are consuming minimum of 500ml alcohol in the raw manner without any side dishes and they are having the habit of taking food later after alcohol consumption, which increases the insulin sensitivity and develops diabetes very earlier than other risk factors of Type II diabetes mellitus like genetic factors, dietary factors, illness, stress. Etc

TASMAC (Tamilnadu State Marketing Corporation) owned by the Government of India has increased the shops available at most of the corners in the community and exposure to mass medias, casual drink with friends makes the youth to addict alcohol, which serves as one of the risk factors of adult onset disease called Type II diabetes mellitus.

The third objective of the study is to associate the selected demographic variables with risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males

In this study it was found that among alcoholic males with the age group of 41- 50 years with increased Body Mass Index, family history of diabetes, family history of hypertension and family history of obesity. Among the non alcoholic males with the age group of 41-50 years are with Body Mass Index above 30, and with waist circumference above 102, family history of diabetes and with the habit of palm oil cooking. In the study by Ramachandran, onset of diabetes occurred before the age of 50 years in 54.1% of

cases, implying that these subjects developed diabetes in the most productive years of life.

In the present study more than half of the proportion of alcoholic males with hypertension are not having the habit of doing exercise but have the habit of taking fast food and in the non alcoholic males with hypertension are having habit of taking oily snacks and more than half of proportion of the males are not doing exercise and have BMI more than 30. Similarly the data collected from the study of Linda, in the diabetes group with the habit of alcohol consumption, there is the significance (0.001) in the history of hypertension with increased Body Mass Index.

The study findings shows that alcoholic males who are unemployed are at severe stress and with the family income of 1000-2000 they have severe stress and half of the males with hypertension have severe stress. Among the non alcoholic males more than half of the proportion of the married males are having moderate stress and regarding education, males with higher secondary education, and males having history of hypertension have moderate stress which is one of the risk factors of Type II Diabetes Mellitus.

The current scenario depicts increased availability and easy accessibility of health care services in both urban and rural areas. As the demand increases adequate health services also extended, alcohol is the major hindrance to the health in which heavy alcoholism is one of the risk factor for Type II diabetes mellitus

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATIONS & RECOMMENDATIONS

SUMMARY

In the rural community, alcoholism plays a major role and is the cause for various diseases, there is the growing consensus that alcohol may cause blood sugar to rise. Hence the investigator was motivated to conduct a study to assess the prevalence and compare the risk factors of Type II Diabetes Mellitus among alcoholic and non alcoholic males residing at Medavakkam.

A descriptive survey approach was utilized to achieve the overall purpose. The research design used for the study is non experimental exploratory design. The study was conducted in Kalaignar nagar and Vanadurai Street of Medavakkam rural area and the study samples was 50 alcoholic males and 50 non alcoholic males with known Type II Diabetes Mellitus based on inclusion criteria. The sampling criteria were selected using simple random sampling by lottery method.

The data was collected with the help of structured interview schedule method for the period of 4 weeks from 27.08.11 to 27.9.11. The data was collected on all days except Sunday on an average of 6 to 8 males. They were interviewed in a day between 9 to 5 pm. Interview was conducted in their respective houses separately. It took 30-45 minutes to collect data for each sample.

The collected data were analysed and interpreted by using the computerized statistical Package system.

MAJOR FINDINGS OF THE STUDY

- Majority of the alcoholic males (28%) and non alcoholic males (40%) belongs to the age group of 51-55 years
- Majority of the alcoholic males (62%) and non alcoholic males (50%) are in nuclear family
- Maximum number of alcoholic males (86%) and non alcoholic males (94%) are married
- Majority of the alcoholic males (46%) and non alcoholic males (24%) have primary education
- Half of the proportion of alcoholic males (50%) and non alcoholic males (28%), the family income is Rs.3001 – 4000
- Majority of the alcoholic males (48%) and non alcoholic males (56%) have history of hypertension
- Higher proportion of alcoholic males (36%) and non alcoholic males (42%) have the history of diabetes from 3 to 5 years of age
- The prevalence of Type II Diabetes Mellitus among males is (13.36%)
- There is significance (0.02) in the family history of obesity among alcoholic and non alcoholic males
- There is significance (0.01) in the habit of taking fast foods among alcoholic and non alcoholic males
- There is significance (0.01) in cooking with palm oil among alcoholic and non alcoholic males

- There is significance (0.01) in the often using ghee in food among alcoholic and non alcoholic males

- There is significance (0.02) in the habit of taking fast food among alcoholic and non alcoholic males

- There is significance (0.04) in doing exercise among alcoholic and non alcoholic males

- There is significance (0.05) in having the history of recurrent infection among alcoholic and non alcoholic males

- There is significance (0.001) in level of stress among alcoholic and non alcoholic males

- There is significance (0.01) in the family history of type II Diabetes Mellitus among age group of 51-60 of among alcoholic males

- There is significance (0.01) in the history of hypertension among the age group of 51-60 years of alcoholic males

- There is significance (0.002) in the body mass index among age group of 41-50 years of non alcoholic males

- There is significance (0.01) in the waist circumference among age group of 41-50 years of non alcoholic males

- There is significance (0.002) in the family history of Type II Diabetes Mellitus and history of hypertension among alcoholic males

- There is significance (0.001) in the history taking fast foods and history of hypertension among alcoholic males

- There is significance (0.05) in the habit of exercise and history of hypertension among alcoholic males
- There is significance (0.5) in the family history of type II Diabetes Mellitus, waist circumference and history of hypertension among alcoholic males
- There is significance (0.05) in the body mass index and history of hypertension among non alcoholic males
- There is significance (0.01) in the habit of taking oily snacks and history of hypertension among non alcoholic males
- There is significance (0.05) in the habit of doing exercise and history of hypertension among non alcoholic males
- There is also significance (0.01) in the level of stress and occupation of alcoholic males
- There is significance (0.01) in the level of stress and unemployment among alcoholic males
- There is also higher significance (0.01) in the level of stress and hypertension among alcoholic males
- There is significance (0.04) in the level of stress and marital status of non alcoholic males
- There is significance (0.01) in the level of stress and education of non alcoholic males
- There is significance (0.01) in the level of stress and history of hypertension among non alcoholic males

CONCLUSION

From the present study it was concluded that among various risk factors associated with Type II Diabetes Mellitus, alcoholism is one of the major factors for the cause of Type II Diabetes Mellitus. Among the alcoholic and non alcoholic males level of stress and history of hypertension are at greater significance in the alcoholic males with the history of Type II Diabetes Mellitus. Hence the alcoholic and non alcoholic males are made aware of their risk factors associated with Type II Diabetes Mellitus in order to promote their health by being on regular treatment and periodical follow ups.

NURSING IMPLICATION

The study has its implications for nursing practice, nursing education, administration and research

NURSING PRACTICE

- The community health nurse have a vital role in providing information for all the diabetic population
- Diabetes awareness programme should be carried out periodically in a community particularly in rural areas.
- Community health nurse has to educate the alcoholic males towards the prevention of Type II Diabetes Mellitus
- The study will be helpful for the community health nurse to Educate the client to follow regular treatment regimen

NURSING EDUCATION

- In nursing curriculum general information about the alcoholism and Type II Diabetes Mellitus should be included
- Special education programme on creating awareness about the risk factors of Type II Diabetes Mellitus should be given to all health care providers
- Continuing education programme should concentrate in Diabetes Mellitus, which is the major problem in the country to update the knowledge of the nurses
- Studies related to alcoholism and Type II Diabetes Mellitus should be added more in the Indian Diabetic Journals.

NURSING ADMINSTRATION

- All Primary Health Centre and subcentres , a diabetic nurse specialist should be posted
- Diabetes camps should be organized by the nursing students to assess the health status and to identify proper screening and early identification
- More budget should be allotted by health planning commission towards Diabetes Mellitus control programme
- The World Health Organization should add alcohol as one of the risk factors of Type II Diabetes Mellitus
- Mass media education on diabetes and alcoholism should be broadcasted regularly.

NURSING RESEARCH

- A comparative study should be conducted with rural and urban population
- A study can be conducted to assess the factors of Type II Diabetes Mellitus among males and females
- A comparative study on prevalence of Type II Diabetes Mellitus among alcoholic and non alcoholic males can be done on larger population
- A similar study can be conducted in other areas of Chennai

RECOMMENDATIONS

- To open food Code for every TASMAC to avoid taking alcohol in an empty stomach
- The life style modification should be adopted by the individual and community participation by Providing Education Module by means of Posters, Boards etc..
- Mass health education Programme to be given to the Morbidity area of Type II Diabetes Mellitus
- Mass media should concentrate more in educating awareness on diabetes and alcoholism
- The adolescents should be educated by means of school health programme on diabetes and alcoholism.
- In schools and colleges education programme should be conducted to the Parents about alcohol consequences to prevent the incidence of Type II Diabetes Mellitus

- Health care providers need to consider using different counseling strategies to motivate the alcoholic and non alcoholic males with Type II Diabetes Mellitus to comply with treatment regimen

- Helpline to be provided to the diabetic clients, if clients need it

SUGGESTIONS FOR FURTHER STUDY

Based on the findings of the study, the investigator proposed the following suggestions for future studies,

- A similar study can be done with larger population

- A similar study can be done among urban and rural areas

- A similar study can be conducted among those who have regular habit of alcoholism and those who stopped alcohols can be done

- A similar study can be done between two districts or two states.

- A survey can be done on larger scale to assess the prevalence of Type II Diabetes Mellitus and alcoholism.

BIBLIOGRAPHY

BOOKS

1. Allender Ann et al (2002), *Community Health Nursing*, Philadelphia, J.B. Lippin cott Company
2. Ansal & M.Berger; (1983), *Diabetes Education India*, Academic Publisher.
3. Black M. Joyce (2005). *Medical Surgical Nursing Clinical Management for positive outcomes*. Saint Louis, Elsevier Inc.
4. Brunner and Suddarth, (2001), *Medical Surgical Nursing*, Philadelphia; J.B., Lippincott company
5. Claudia & Smith (2000), *Community Health Nursing Theory and practice*, Philadelphia; W.B. Saunders Company
6. Daniel S. Blumenthal (2004), *Community based health research*, Springer Publications
7. Ellenberg, Rifkins (1990). *Diabetes Mellitus Theory and Practice*, Newyork; Elsevire science Publications
8. Gill GV (1997) *Diabetes Mellitus in developing countries*. Text book of diabetes Vol II, oxford, Black well Science List of tables
9. Gupta. S.P.(1991). *Statistical methods*, New Delhi; Sultan chand publication
10. Ignatavicius D.D., Workman. M.L (2006) *Medical Surgical Nursing* for collaboration care Saunders, Elsevire Publications
11. Johnn W. Creswell (1994) *Research design Qualitative and Quantitative approaches*. California, Sage publications
12. Joseph., P. Healyu (1999). *Statistics a tool for social research*, California, Ward worth publishing company
13. Julia B.G (1005) *Nursing theories the base for professional nursing practices application*, Lange publication
14. Marica Stanhope Lancaster (1992), *Community Health Nursing*, London, Mosby Publications
15. Mary Sulakshi Immanuel Dr. (1993) *Instruction for the Preoperation dissertation*, India, Academic Publisher

16. Polit. F. D., and Beck C.T. (2004) *Nursing research; principles and method*, Philadelphia, Lippincott Williams and Wilkins
17. Potter A.P. Perry G.A. (2003) *Basic Nursing Essentials for practice*. St. Louis, Mosby Publications
18. Smettzer. C.S. & Bare. B., (2004). *Textbook of Medical Surgical Nursing*, Philadelphia, Lippincott Williams and wilkins.
19. Thomas. N., Vasan. S (2006) A *Practical Guide to Diabetes Mellitus*, India, Academic Publisher
20. Watia kapur, (2004) *Diabetes education course diabetes education for health care professionals*, interaction diabetes federation, Chennai.

JOURNALS

1. Ajani UA et al (2000). Alcohol consumption and risk of type 2 Diabetes Mellitus among US male physicians. *Archives of Internal medicine* volume 160:1025-1030
2. Andrea A. et al (2004). Effect of Alcohol consumption on Diabetes Mellitus, a Systemic review. *Annals of Internal Medicine* 140 (3): 211-219
3. Anjana R.M et al (2011) Nationwide estimates of diabetes prevalence in India. *Indian Journal of Medical Research*. 133: 369-380
4. Andrew Grandinetti et al (2007). Prevalence of diabetes and Glucose Intolerance in an ethnically diverse rural community of Hawaii. *Ethnicity and Disease* Volume 17:
   250-255
5. Baliunas DO et al (2009). Alcohol as a risk factor for type 2 diabetes. A systemic review and meta-analysis. *Diabetes care* 32: 2123-2132
6. Beulens JW et al (2005). Alcohol consumption and risk of type 2 Diabetes Mellitus in men. *Diabetes care* 28: 2933-2938
7. Carlsson S et al., (2003). Alcohol consumption and the incidence of type 2 diabetes. *Diabetes care* 26: 2785-2790
8. Conigrave KM et al (2001). A prospective study of drinking patterns in relation to risk of type 2 diabetes among men. *Diabetes Care*. 50: 2390-2395

9. Crandall et al (2009) Alcohol consumption and diabetes risk in the diabetes prevention program. *American Journal of Clinical Nutrition* 90: 595- 601
10. Dolly O. Baliunas et al (2009). Alcohol as a risk factor for Type 2 diabetes: a systemic review and Meta- analysis. *Diabetes care* 32(11): 2123- 2132
11. Dornhorst A, Ouyang A (1971). Effect of alcohol on glucose tolerance. *Lancet(*2): 957-959
12. Economic Intelligent unit. The silence epidemic: An economic study of diabetes in developed and developing countries: 2007
13. Facchini FS et al (1994). Light to moderate alcohol intake is associated with enhanced insulin sensitivity. *Diabetes care*. Volume 17: 115-119s
14. Fumlaki Imamura et al (2009). Confounding by dietary patterns of the inverse association between alcohol consumption and type 2 diabetes risk. *American Journal of Epidemiology.* 170(1): 37-45
15. Holbrook TL et al (1990). A prospective population based study of alcohol use and non insulin dependent Diabetes Mellitus. *American Journal of Epidemiology*. Volume: 132: 902-909
16. Howarrd AA et al (2004). Effect of alcohol consumption on Diabetes Mellitus: a systemic review. *Annals of Internal medicine*. Volume 140: 211-219
17. Hu FB et al (2001). Diet, lifestyle and the risk of type 2 Diabetes Mellitus in women. *New England Journal of Medicine* 345: 790-797.
18. Iris Shai. RD et al (2007). Glycemic effects of moderate alcohol intake among patients with type 2 diabetes. *Diabetes care*.30(12): 3011-3016
19. Joann E. Manson et al (2007). Alcohol consumption and type 2 Diabetes Mellitus influence of genetic variation in alcohol dehydrogenase. *American diabetes Association* volume 56: 2388-2394
20. Joline W.J. Beulens. et al (2005). Alcohol consumption and risk of type 2 diabetes among older women. *Diabetes care* 28(12): 2933-2938
21. Jose GM et al(1977). Serum glucose levels and alcohol consumption habits in a large population. Diabetes 26: 780-785
22. Kao LHW et al (2001). Alcohol consumption and the risk of type 2 Diabetes Mellitus. *American Journal of Epidemiology* 154: 748-757

23. Karlon H. Johnson. Et al (2001). Alcohol, Tobacco and drug use and the onset of type 2 diabetes among inner-city minority patients. *Journal of American Board of Family practice* 14(6): 430-436
24. Katherine M. et al (2001). A Prospective study of drinking patterns in realation to risk of Type 2 Diabetes Mellitus among men. *Diabetes care*. Volume (50): 2390-2395
25. Linda Kao W.H. et al (2001) Alcohol consumption and the risk of type 2 Diabetes Mellitus. *American Journal of Epidemiology* 154(8): 748-757
26. Medalie JH et al(1975) Major factors in the development of Diabetes Mellitus in 10,000 men. *Archieves of Internal Medicine* 135: 811-817
27. Michel M. Joosten et al (2011). Changes in alcohol consumption and subsequent risk of type 2 Diabetes Mellitus in men. *Diabetes Journals*.Volume 60: 74- 79
28. Mohan. V et al (2007) Epidemiology of type 2 Diabetes Mellitus; Indian Scenario. *Indian Journal of Medicine Research* 125: 217-230
29. Nakanishi N et al (2003). Alcohol consumption and the risk for development of type 2 diabetes in middle aged Japanese men. *Diabetes Care* 26: 48-54
30. Ramachandran A et al (2002). Burden of type 2 diabetes and its complications, the Indian scenario. *Current Science*, 83(12): 1471- 1476
31. Sofia Carlsson.et al (2003). Alcohol consumption and the Incidence of Type 2 diabetes. *Diabetes care*. 26(10) : 2785-2790
32. Stampfer M. et al (1988). A prospective study of Moderate alcohol drinking and risk of diabetes in women. *American Journal of Epidemiology* 128: 549-558
33. Sudheer. B et al (2010). Prevalence of Diabetes in Tirupathi urban population and the role of risk factors associated with it, a preliminary study. *International journal of pharmtech Research* 2(2): 1437-1438
34. Tsumura k. et al (1999). Daily alcohol consumption and risk of type 2 diabetes in Japanese men: the Osaka Health Survey. *Diabetes care* 22: 1432-1437
35. Van de Wiel A (2004). Diabetes Mellitus and alcohol. Diabetes Metabolism research and reviews 20: 263-267
36. Wannamethee SG et al (2002). Alcohol consumption and the incidence of Type II diabetes. *Journal of Epidemiology and community health*. Volume 7: 542-548

37. Wei M et al (2000). Alcohol intake and incidence of type 2 diabetes in men. *Diabetes care* 1: 18-22
38. Wild s et al (2004). Global prevalence of diabetes, estimates for year 2000 and projections for 2030. *Diabetes care*: 67: 1047-1053
39. WHO fact sheet N 312 september 2008
40. WHO technical report series 646, 2008 WHO expert committee on Diabetes Mellitus, Second report

NET SOURCES

1. Diabetes Mellitus, Wikipedia the free encyclopedia
2. www.diabetes.diabetesjournal.org
3. www.annals.org
4. www.archinternmed.com
5. http://care.diabetesjournals.org
6. http://.oxfordjournals.org
7. www.ajcn.org
8. www.whoindia.org
9. www.sphinxsai.com
10. http://www.pueblo.gsa.gov/cic_text/health/noninsulin-diabetes/alcohol.htm
11. http://www.diabetes.ca/Section_About/nutrition2000
12. www.joslin.harvard.edu/education/library/walohol.html)
13. www.diabetes.ca/prof/nutritional_guide_eng.

STRUCTURED QUESTIONNAIRE

PART-I:

Demographic Data

[Key: Please tick ( ) the answers you feel appropriate]

1. Serial No:
2. Age
    a) 30-40 years
    b) 41-50 years
    c) 51-60 years
    d) 60 and above
3. Type of family
    a) Nuclear family
    b) Joint family
    c) Extended family
4. Marital status
    a) Single
    b) Married
    c) Widow
    d) Divorced
5. Religion
    a) Hindu
    b) Christian
    c) Muslim
    d) Others

6. Educational status
    a) Non-formal education
    b) Primary education
    c) High school education
    d) Higher secondary education
    e) Graduate
7. Occupation of the participant
    a) Unemployed
    b) Government
    c) Private
    d) Self-employed
8. Monthly income of the family
    a) Less than Rs. 1000
    b) Rs. 1001-Rs. 2000
    c) Rs. 2001-3000
    d) Rs. 3001-4000
    e) Rs. 4000 and above
9. Do you have a habit of Alcohol consumption?
    a) Yes
    b) No
10. Do you have a history of hypertension?
    a) Yes
    b) No

11.Do you have a history of any heart disease?

a) Yes

b) No

12.Do you have a history of High Cholesterol level?

a) Yes

b) No

13.Do you have a history of Diabetes Mellitus?

a) Yes

b) No

13. A) If yes, for how many years?

a) Less than 1 year

b) b) 1-2 years

c) 3 to 5 years

d) More than 5 years

PART II

Section I

Factors Related To Physical Parameters

1. Body Mass index
    a) Lower than 25 kg/m^2
    b) 25-30 kg/m^2
    c) 30-35 kg/ m^2
    d) More than 35 kg/m^2
2. Waist circumference
    a) Less than 94 cm
    b) 94-102 cm
    c) 102- 110 cm
    d) More than 110 cm

Section II

Factors related to Hereditary

1. Have any of your family members or relatives been diagnosed with diabetes?
    a) Yes
    b) No

    If yes, Specify----------
2. Do you have the family history of hypertension?
    a) Yes
    b) No
3. Do you have the family history of obesity?
    a) Yes
    b) No

Section – III

Factors related to Dietary Pattern

1. Do you have the habit of taking fast foods?
    a) Never
    b) Rarely
    c) Most often
    d) Always
2. Do you use palm oil for cooking?
    a) Never
    b) Rarely
    c) Most often
    d) Always
3. How often do you use ghee in your food?
    a) Never
    b) Rarely
    c) Most often
    d) Always
4. How often do you take oily snacks?
    a) Never
    b) Rarely
    c) Most often
    d) Always
5. How often do you take processed food?
    a) Never
    b) Rarely
    c) Most often
    d) Always

Section – IV

Factors related to Lifestyle

1. Do you have the habit of drinking alcohol?
    a) Yes
    b) No

If yes,

i) How often do you take alcohol?
    a) Daily
    b) 1-3times in a week
    c) 4-6 times in a week
    d) Occasionally

ii) How often do you take alcohol before meals?
    a) Never
    b) Rarely
    c) Most often
    d) Always

iii) How often do you take alcohol mixed with sugary mixed drinks?
    a) Never
    b) Rarely
    c) Most often
    d) Always

iv) How often do you overeat after taking alcohol?

a) Never
b) Rarely
c) Most often
d) Always

2. Do you have the habit of fasting?
    a) Never
    b) Rarely
    c) Most often
    d) Always
3. Do you exercise daily?
    a) Never
    b) Rarely
    c) Most often
    d) Always
4. Do you have the habit of meditation?
    a) Never
    b) Rarely
    c) Most often
    d) Always

Section – V

Factors related to Illness

1. Do you have the history of any thyroid disorders?
   a) Yes
   b) No

2. Have you had any major surgeries or trauma?
   a) Yes
   b) No

3. Do you have a history of any recurrent infection?
   a) Yes
   b) No

   If yes, specify……..

4. Do have a history of any liver diseases?
   a) Yes
   b) No

Section – VI

Factors related to Stress

S.NO	STRESS RELATED FACTORS	ALWAYS	OCCASIONALLY	NEVER
1.	Do you have at least 7- 8 hours of unbroken sleep a night?			
2.	Do you do vigorous exercise (eg: cycling, jogging, etc.) at least twice a week			
3.	Do you take time during the day to relax or do things just for you?			
4.	Do you stay out of financial problems?			
5.	Do you organize your time effectively?			
6.	Do you have a faith or religion which helps you through hard times?			
7.	Do you have one or more friends to confide in about personal matters?			
8.	Do you express your feelings when angry or worried?			
9.	Do you give and receive love and affection?			
10.	Do you eat at least one healthy meal a day, including fresh fruits and vegetables?			
11.	Do you drink fewer than 3 cups of coffee a day?			

12.	Are you a self confident person?			
13.	Do you feel physically healthy?			
14.	Whether you had a happy and stable childhood?			
15.	Do you feel comfort in your job?			

Stress Score:

Below 20: Mild stress

20-30 : Moderate stress

30-45 : Severe stress

totik¡f¥g£l ne®fhzš nfŸÉfË‹ bjhF¥ò

gFâ - 1

Égu§fŸ ahî« c§fis g‰¿aJ bjËthf vGjî«

1) taJ (tUl§fËš)

M) 36-40 tiu ☐

ï) 41-45 tiu ☐

<) 46-50 tiu ☐

c) 51-55 tiu ☐

C) 56-60 tiu ☐

2) FL«g tif

m) jÅ¡ FL«g« ☐

M) T£L¡ FL«g« ☐

3) âUkz Égu«

m) âUkzkhfhjt® ☐

M) âUkzkhdt® ☐

ï) kidÉia ïHªjt® ☐

<) Éthfu¤jhdt® ☐

4) kj«

m) ïªJ ☐

M) KÞÈ« ☐

ï) »¿ÞJt® ☐

<) k‰wit ☐

5) fšÉ¤ jFâ

m) mDgt¡ fšÉ ☐

M) Mu«g¡ fšÉ ☐

ï) ca®Ãiy¡ fšÉ ☐

<) nkšÃiy¡fšÉ ☐

c) g£ljhÇ ☐

6) bjhÊš Égu«

m) ntiyÆšyhjt® ☐

M) muR CÊa® ☐

ï) jÅah® CÊa® ☐

<) ifÉida® ☐

7) FL«g¤â‹ khj tUkhd«

m) %.1000¡F« Fiwthf ☐

M) %.1001 Kjš 2000 tiu ☐

ï) %.2001 Kjš %.3000 tiu ☐

<) %.3001 Kjš 4000 tiu ☐

c) %.4001 ¡F« nkš ☐

8) c§fS¡F kJ mUªJ« gH¡f« cŸsjh?

m) M« ☐

M) ïšiy ☐

9) c§fS¡F ïu¤j bfhâ¥ò cŸsjh?

m) M« ☐

M) ïšiy ☐

10) c§fS¡F ïUja nehOE cŸsjh?

m) M« ☐

M) ïšiy ☐

11) c§fS¡F ïu¤jâš bfhG¥ò mâf« cŸsjhf m¿ªÔ®fsh?

m) M« ☐

M) ïšiy ☐

12) c§fS¡F r®¡fiu nehOE cŸsjh?

m) M« ☐

M) ïšiy ☐

12. m. M« v‹whš v¤jid tUl§fshf?

m) xU tUl¤âw¡F« Fiwthf ☐

M) 1 Kjš 2 tUl§fshf ☐

ï) 3 Kjš 5 tUl§fshf ☐

<) 5 tUl¤â‰F« nkš ☐

gFâ-2

clš ßâahd Ãiyahd kâ¥òila fhuÂfŸ

1) clš gUk‹ msî

m) 25 »»/Û2 »nH ☐

M) 25-30 »»/Û2 tiu ☐

ï) 30-35 »»/Û2 tiu ☐

<) 35 »»/Û2 nkš ☐

2) ïL¥ã‹ R‰wsî

m) 94 br.Û ¡F« Ñoe ☐

M) 94-102 br.Û tiu ☐

ï) 102-110 br.Û tiu ☐

<) 110 br.Û ¡F« nkš ☐

gFâ - III
gu«giu fhuÂfŸ
1) c§fŸ FL«g¤âš ntW ahU¡fhtJ r®¡fiu nehOE cŸsjh?

m) M« ☐

M) ïšiy ☐

M« v‹whš ahU¡F _____
2) c§fŸ FL«g¤âš ahU¡fhtJ ïu¤j bfhâ¥ò cŸsjh?

m) M« ☐

M) ïšiy ☐

3) c§fŸ FL«g¤âš ahU¡fhtJ bfhG¤j clš cŸsjh?

m) M« ☐

M) ïšiy ☐

gFâ - 4
czî gH¡f« tifahd fhuÂfŸ
1) c§fS¡F bjUfilfËš c©Q« gH¡f« cŸsjh?

m) ïšiy ☐

M) v¥nghjhtJ ☐

ï) mo¡fo ☐

<) v¥bghGJ« ☐

2) czÉš gh« MÆš fyªJ c©Qåuh?

m) ïšiy ☐

M) v¥nghjhtJ ☐

ï) mo¡fo ☐

<) v¥bghGJ« ☐

3) czÉš beOE fyªJ c©Qåuh?

m) ïšiy ☐

M) v¥nghjhtJ ☐

ï) mo¡fo ☐

<) v¥bghGJ« ☐

4) Ú§fŸ v©bzOE fyªj â©g©l§fis c©Qgtuh?

m) ïšiy ☐

M) v¥nghjhtJ ☐

ï) mo¡fo ☐

<) v¥bghGJ« ☐

5) gj¥gL¤j¥g£l czî¥ bghUis c©Qåuh?

m) ïšiy ☐

M) v¥nghjhtJ ☐

ï) mo¡fo ☐

<) v¥bghGJ« ☐

gFâ - 5

thoe¡ifKiw fhuÂfŸ

1) c§fS¡F kJ mU¤J« gH¡f« cŸsjh?

m) M« ☐

M) ïšiy ☐

v¥bghGbjšyh« kJ mUªJå®fŸ?

m) âdK« ☐

M) thu¤âš 1 Kjš 2 Kiw ☐

ï) thu¤âš 3 Kjš 5 tiu ☐

<) v¥nghjhtJ ☐

czî mUªJ« K‹ kJ mUªJ« gH¡f« cŸsjh?

m) ïšiy ☐

M) v¥nghjhtJ ☐

ï) mo¡fo ☐

<) v¥bghGJ« ☐

Ú§fš kJit r¡fiu fyªj ÚUl‹ fyªJ mUªJåuh?

m) ïšiy ☐

M) v¥nghjhtJ ☐

ï) mo¡fo ☐

<) v¥bghGJ« ☐

kJ mUªâaã‹ Ãiwa czî c©Q« gH¡fk cŸsjh?

m) ïšiy ☐

M) v¥nghjhtJ ☐

ï) mo¡fo ☐

<) v¥bghGJ« ☐

2) c§fS¡F neh‹ò filão¡F gH¡f« cŸsjh?

m) ïšiy ☐

M) v¥nghjhtJ ☐

ï) mo¡fo ☐

<) v¥bghGJ« ☐

3) c§fS¡F âdK« cl‰gÆ‰á brOEí« gH¡f« cŸsjh?

m) M« ☐

M) ïšiy ☐

4) c§fS¡F âahd« brOEí« gH¡f« cŸsjh?

m) M« ☐

M) ïšiy ☐

gFâ- 6

1) c§fS¡F ijuhOE£ ãu¢rid cŸsjh?

m) M« ☐

M) ïšiy ☐

2) c§fS¡F VjhtJ bgÇa mWitá»¢ir mšyJ bgÇa mo V‰g£LŸsjh?

m) M« ☐

M) ïšiy ☐

3) Ú§fŸ VjhtJ bjhl®ªJ nehOE»UÄahš jh¡f¥g£tuh?

m) M« ☐

M) ïšiy ☐

4) c§fS¡F <uÈš VjhtJ nehOE cŸsjh?

m) M« ☐

M) ïšiy □

gFâ- 7
kdmG¤j« bjhl®ghd fhuÂfŸ
nfŸÉfŸ v¥bghGJ« v¥nghjhtJ ïšiy
1. Ú§fŸ âdrÇ 7 Kjš 8 kÂ neu«
ö§Fgtuh ?
2. Ú§fŸ âdrÇ Äf fodkhd cl‰gÆ‰á
brOEgtuh?
3. Ú§fŸ c§fS¡fhf neu« xJ¡» XOEî
vL¥Õ®fsh?
4. c§fS¡F gz¥ãu¢áid cŸsjh?
5. Ú§fŸ c§fŸ neu¤ij rÇahf
brytÊ¥Õuh?
6. c§fS¡F flîŸ e«ã¡if cŸsjh?
7. Ú§fŸ c§fš ãu¢ridia kd« É£L
ngRtj‰F njhH®fŸ cŸsh®fsh?
8. Ú§fŸ c§fŸ nfhg¤ij
btËfh£Lgtuh?
9. Ú§fŸ ghr¤ij neuhf fh£Lgtuh?
10. Ú§fŸ âdrÇ xUKiwahtJ
fhOEf¿fisí«, gH§fisí« nr®¤J¡
bfhŸå®fsh?
11. Ú§fŸ _‹W f¥ò¡F« mâfkhf njÜ®
mUªJåuh?
12. Ú§fŸ c§fis mâf j‹d«ã¡if
cilatuhf fUJ»Ö®fsh?
13. Ú§fŸ rÇÉ»j czî c©gtuh?
14. Ú§fŸ clšßâahf eykhf
ïU¡»Ö®fsh?
15. c§fŸ ntiy c§fS¡F âU¥â
mË¡»wjh?