

**ASSESS THE PREDICTIVE FACTORS OF TYPE II DIABETES
MELLITUS AMONG PATIENTS WITH KNOWN DIABETES**



**A DISSERTATION SUBMITTED TO THE TAMILNADU
DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI,
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE
OF MASTER OF SCIENCE
IN NURSING**

APRIL 2016

**ASSESS THE PREDICTIVE FACTORS OF TYPE II DIABETES
MELLITUS AMONG PATIENTS WITH KNOWN DIABETES**

BY

301412203

**A DISSERTATION SUBMITTED TO THE TAMILNADU
DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI,
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE
OF MASTER OF SCIENCE
IN NURSING**

APRIL 2016

**A DESCRIPTIVE STUDY TO ASSESS THE PREDICTIVE FACTORS
OF TYPE II DIABETES MELLITUS AMONG PATIENTS WITH
KNOWN DIABETES IN SELECTED HOSPITAL**

RESEARCH GUIDE :

Prof.Mrs.J.M.Jerlin PriyaM.Sc(N),Ph.D

Principal cum professor,

Department of medical surgical nursing,

Annammal College of Nursing, Kuzhithurai,

K.K District, Tamil Nadu.

CLINICAL GUIDE :

Mrs. Starina flower. M.Sc (N),

Asst. Professor,

Department of Medical Surgical Nursing,

Annammal College of Nursing, Kuzhithurai,

K.K District, Tamil Nadu.

MEDICAL GUIDE:.....

Dr. Andrew Prabhin Sathish. MD

Physician,

S.P Multi specialty hospital,

Parassala, Kerala.

**A DISSERTATION SUBMITTED TO THE TAMILNADU
DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI,
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE
OF MASTER OF SCIENCE
IN NURSING
APRIL 2016**



Certified that this is the bonafide work of

301412203

At the Annammal College of Nursing,

Kuzhithurai.

*Submitted in partial fulfilment of the requirements for
the degree of Master of Science in Nursing from the Tamilnadu*

Dr. M.G.R. Medical University, Chennai.

Examiners

1. _____

2. _____

Prof. Mrs. J.M. Jerlin Priya., M.Sc (N), Ph.D

Principal

APRIL-2016

DECLARATION

I hereby declare that the present dissertation titled “**A descriptive study to assess the predictive factors of Type II Diabetes Mellitus among patients with known Diabetes in selected hospital**”, is the outcome of the original research work undertaken and carried out by me under the guidance of **Prof. Mrs. J.M. Jerlin Priya, M.Sc (N),Ph.D Principal cum Professor** in the department of Medical Surgical Nursing and **Mrs. Starina flower M.Sc(N), Assistant professor** in the department of Medical Surgical Nursing, Annammal college of Nursing, Kuzhuthurai. I also declare that the material of this has not found in any way, the basis for the award of any degree or diploma in this university or any other university.

301412203

M.Sc Nursing II Year

ACKNOWLEDGEMENT

I wish to acknowledge my heartfelt gratitude to the **Lord Almighty** for all the wisdom, knowledge, guidance, strength, protection, shield and support throughout the study. He has offered me throughout this Endeavour and given me courage to overcome the difficulties and thus complete this study successfully.

It is my honour to thank our beloved chairman **Dr. Sheeba Jayalal MBBS., DGO.**, for providing entire facility and encouragement for conducting this study.

I express my sincere gratitude to **Dr. Jayalal MS., FICS., DLS (Germany), MBA., FIAGES.**, Hon. Secretary of Annammal College of Nursing for giving me the precious opportunity to be a part of this esteemed institution.

I consider myself to be privileged to express my honest and sincere gratitude to **Prof. Mrs. J.M JerlinPriya, M.Sc., (N), Ph.D** Principal cum Professor, Annammal College of Nursing, for her invaluable guidance, continuous support, promising criticisms, suggestion and concern during the entire course of this dissertation.

At this moment I convey my profound gratitude to **Mrs. Sujatha , M.Sc.,(N).**, Vice Principal cum Class Coordinator, for her support which helped me in completion of this dissertation.

I extend my deepest gratitude to **Mrs. Starina Flower, M.Sc. (N)**, Asst. professor in Medical Surgical Nursing for her constant source of inspiration, which was a key for the successful completion of this study.

I express my thanks to the **entire faculty of Annammal College of Nursing, Kuzhithurai**, for their co-operation and encouragement.

My sincere thanks to **Mr. Anto John Britto, MSc, MED. MPhil, PG., DBM.,** Professor of Bio statistics for extending his helping hands in the course of data analysis and interpretation.

I am very much grateful to **Mrs. Mary Shajitha,** Librarian for helping me in referring journals and books

I thank all the **office staff** for their help in taking photocopies of study reviews.

I express my deep sense of gratitude and heartfelt thanks to the **experts** who have validated and edited my study and who devoted their valuable hours in solving my doubts and in providing meticulous attention.

I would like to express my thanks to the **study participants** for their co-operation and participation, without whom this study would have been impossible.

I express my heartfelt gratitude to my **family members** for their love, support and encouragement. A word of thanks to **my colleagues** for their help and support throughout the course of this study.

30142203

MSc.(N) IIYEAR

TABLE OF CONTENTS

CHAPTER NO	CONTENTS	PAGE NO
I	INTRODUCTION <ul style="list-style-type: none">• Background of the study• Need for the study• Statement of the problem• Objectives of the study• Hypotheses• Operational definitions• Assumptions• Delimitations• Projected outcome• Conceptual framework	1 3 4 7 7 7 7 8 8 8 9
II	REVIEW OF LITERATURE <ul style="list-style-type: none">• Reviews related to Type II Diabetes Mellitus• Reviews studies related to risk factors of Type II Diabetes Mellitus	11 13

III	RESEARCH METHODOLOGY <ul style="list-style-type: none"> • Research approach 16 • Research design 16 • Variables 17 • Research Settings 17 • Population 17 • Sample 18 • Sample size 18 • Sampling technique 18 • Sampling criteria 19 • Development of the tool 19 • Description of the tool 19 • Content validity 20 • Reliability 21 • Pilot study 21 • Data collection procedure 21 • Plan for data analysis 23 • Ethical considerations 23 • Summary 24 	
IV	DATA ANALYSIS AND INTERPRETATION	25
V	DISCUSSION	43
VI	SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS	46
	REFERENCE	
	ANNEXURES	

LIST OF TABLES

TABLE NO	TITLE	PAGE NO
1.	Data pertaining to frequency and percentage distribution of demographic variable among patients with Type II Diabetes Mellitus.	
2.	Data pertaining to frequency and percentage distribution of clinical variable among patients with Type II Diabetes Mellitus	
3.	Data pertaining to frequency and percentage distribution of dietary factors influencing Type II Diabetes Mellitus	
4.	Data pertaining to frequency and percentage distribution of health factors influencing Type II Diabetes Mellitus	
5.	Data pertaining to frequency and percentage distribution of lifestyle factors influencing Type II Diabetes Mellitus	
.6.	Data pertaining to association between dietary factors and selected socio demographic variables among patients with Type II Diabetes Mellitus.	
7.	Data pertaining to association between health factors and selected socio demographic variables among patients with Type II Diabetes Mellitus	
8.	Data pertaining to association between lifestyle factors and selected socio demographic variables among patients with Type II Diabetes Mellitus	
9.	Data pertaining to association between dietary factors and clinical variables among patients with Type II Diabetes Mellitus	
10.	Data pertaining to association between health factors and clinical variables among patients with Type II Diabetes Mellitus	
11.	Data pertaining to association between lifestyle factors and clinical variables among patients with Type II Diabetes Mellitus	

LIST OF FIGURES

FIGURE NO	TITLE	PAGE NO
1.	Modified Conceptual Framework based on “General system theory by Ludwingn Von Berlanffy (1968)	
2.	Schematic representation of research design.	
3.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to their age	
4.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to the gender	
5.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to their religion.	
6.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to their family	
7.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to their residing place.	
8.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to their monthly income.	
9.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to their education.	
10.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to their occupation.	
11.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to the duration of diabetes.	
12.	Frequency and percentage distribution of patients with Type II Diabetes Mellitus according to the medical measures	

LIST OF ANNEXURES

ANNEXURE NO	TITLE
I	Letter seeking permission to conduct the study.
II	Letter granting permission to conduct the study.
III	Ethical Committee Letter.
IV	Letter seeking experts opinion for the validity of the tool.
V	Evaluation criteria checklist for validating the tool.
VI	List of experts.
VII	Research Participants consent form.[English and Tamil]
VIII	Certificate of English Editing.
IX	Certificate of Tamil Editing.
X	Tool for data collection (English and Tamil). Tool: I Demographic and clinical variables. Tool: II Planned structured questionnaire.
XI	Master code sheet.

ABSTRACT

PREDICTIVE FACTORS OF TYPE II DIABETES MELLITUS AMONG PATIENTS WITH KNOWN DIABETES

INTRODUCTION

Type II Diabetes Mellitus is, by far the most prevalent type of diabetes, accounting for over 90% of people with diabetes. Type II diabetes usually occurs in people over 35 years of age, 80% to 90% of patient is found to be obese at the time of diagnosis. Prevalence of Type II diabetes increases with age, with above half of the people diagnosed being older than 55 years. In the past, Type II diabetes was known as 'adult-onset' diabetes. This term is no longer considered appropriate because the disease is now being seen in an increase in number among children, adolescent and young adults

The long term complications of diabetes make it such a devastating disease. Diabetes is the leading cause of adult blindness, end stage renal disease, and non traumatic lower limb amputations. It is also a major contributing factor for heart disease and stroke. Adult with heart disease have death rates two to four times higher than adult without diabetes. The risk of stroke is also two to four times higher among people with diabetes. In addition about 73% of adult with diabetes have hypertension.

STATEMENT OF THE PROBLEM

“A descriptive study to assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes in Annammal hospital at Kanyakumari district”

OBJECTIVES OF THE STUDY

- To assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes mellitus.
- To find out the association between predictive factors of Type II Diabetes Mellitus and the selected socio demographic and clinical variables.

HYPOTHESIS

H₁: There will be a significant association between predictive factors of Type II Diabetes Mellitus among patients with known diabetes with their selected socio demographic and clinical variables.

RESEARCH METHODOLOGY

The study was conducted among patients with Type II Diabetes Mellitus in Annammal hospital for assessing the predictive factors of Type II Diabetes Mellitus. The sample size for the study was 100 and the sampling technique used by the investigator was non probability convenient sampling method. Data collection period was one month and the tool used for data collection was planned structured questionnaire. The structured questionnaire consists of dietary factors, health factors and lifestyle factors. Content validity and tool validity were obtained from experts in various fields. Pilot study was conducted for a period of one week duration.

DATA ANALYSIS

Analysis was done using both descriptive and inferential statistics. Frequency and percentage distribution of socio demographic and clinical variables and factors influencing Type II Diabetes Mellitus were assessed. Chi square value was calculated to find the association between factors influencing Type II Diabetes Mellitus and socio demographic and clinical variables. The data was edited, coded and entered in excel sheets.

RESULT AND SUMMARY

On analyzing data, majority of 95(95%) had high risk for lifestyle factors, 70(70%) had high risk for health factors and 55(55%) had high risk for dietary factors. There was an significant association between age, religion, educational level, occupation and family income (**P< 0.05, **P< 0.01, ***P< 0.001 (2), ***P 0) and dietary factors. There was an significant association between age, residing place and family monthly income. (*P< 0.05, **P< 0.01, ***P 0) and health factors, and also there was an association between religion and residing area (*P< 0.05, **P< 0.01, ***P< 0.001) and lifestyle factors.

CONCLUSION

The main conclusion of the present study was 95(95%) had high risk for developing type II diabetes mellitus due to lifestyle factors and there was significant association between predictive factors of type II Diabetes Mellitus and socio demographic, and clinical variables. The above findings show that lifestyle factors are the most predominant cause of Type II Diabetes Mellitus. It is evident that developing countries need to make drastic changes in their way of living and habits in order to safeguard their citizens from systemic diseases like Type II Diabetes Mellitus.

CHAPTER I

INTRODUCTION

- *Background of the study*
- *Need for the study*
- *Statement of the problem*
- *Objectives of the study*
- *Hypothesis*
- *Operational definitions*
- *Assumptions*
- *Delimitations*
- *Conceptual framework*

CHAPTER II

REVIEW OF LITERATURE

- I. Reviews related to Type II Diabetes mellitus*
- II. Reviews related to risk factors of Type II Diabetes mellitus*

CHAPTER III

RESEARCH METHODOLOGY

- *Research approach*
- *Research design*
- *Variables*
- *Settings*
- *Population*
- *Sample*
- *Sample size*
- *Sampling technique*
- *Sampling criteria*
- *Development of the tool*
- *Description of the tool*
- *Validity*
- *Reliability*
- *Pilot study*
- *Data collection procedure*
- *Plan for data analysis*
- *Ethical consideration*

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

CHAPTER V

DISCUSSION

CHAPTER VI

SUMMARY

CONCLUSION

IMPLICATIONS

RECOMMENDATIONS

REFERENCES

REFERENCE

BOOKS

- Ansari, (2012). **Medical Surgical Nursing -1**. India: S.vikas and medical publishers.
- Basvanthappa, B.T. (2000). **Nursing Research**. New Delhi: Jaypee Publishers.
- Black, (2005). **Medical surgical nursing**. New Delhi: Elsevier publishers.
- Brunner, (2011). **Medical surgical nursing**. New Delhi: Wolter's Kluwer publishers.
- Curtis .B. (1997). **Encyclopedia of medical care**. New York: Crown Publishers.
- Dorsey, W. (1992). **Family health and medical Guide**. Philadelphia: Saunders Publishers.
- Fred. (2004). **Practical guide to the care of medical patient**. New Delhi. Lewis publishers.
- George, J .B. (2011).**Nursing theories**. New Delhi: Pearson Publishers.
- Lewis, (2011).**Medical Surgical Nursing**. New Delhi: Elsevier publishers.
- Lippincott, (2005). **Manual nursing practice**. Noida: Jaypee medical publishers.
- Monahan, (2003). **Medical – Surgical Nursing Health and illness perspectives**. China; Mosby's publications.
- Phipps, (2009). **Medical Surgical Nursing**. New Delhi: Elsevier Publishers.
- Polit, (2008) . **Nursing Research**. New Delhi: Wolters Publishers.
- Potter, (2009). **Fundamentals of nursing**, New Delhi: Elsevier India private limited.
- Priscilla, (2008). **Medical Surgical Nursing**. New Delhi: Sanat publishers.
- Straight.A.(2000). **Medical surgical nursing**. China: Wolters Kluwer publications.
- Suzzanne.C.(2001). **Medical surgical nursing**. Philadelphia: Lippincott publications.
- Sundar Rao,(2006). **Introduction to Biostatistics and Research methods**. New Delhi: Ashok Publishers.

- Timbly, K.(2006). **Introductory Medical –Surgical Nursing**. United States of America: Lippincott publishers.
- Williams, (2008). **Understanding medical surgical nursing**. New Delhi: Jaypee medical publishers.

JOURNALS

- Aggarwal, K.K.,(2007). **Revisiting diabetes mellitus in the elderly**. The Asian journal of diabetology. vol 9.(4), 9-10.
- Akhilandeswari, K., (2006). **Awareness programme on diabetes**. The nursing journal of India, 13-14.
- Anita Ben, et. al., (2007). **Effectiveness of structured teaching on home care management**. The nursing journal of India. vol 9. 197-199.
- Bela Shah,et.al., (2004) **Assessment of Burden of Non-Communicable Diseases**. Indian Council of Medical Research
- Belinda, P., Childs, C.D.E., (2006). **Complete nurses guide to diabetic care**. Published by American nurses association.
- Elsa Sanatombi devi,. (2012). **Diabetes necrotizing fasciitis with anemia and autonomic neuropathy a case study**. Nightingale nursing times vol 8, (24-25).
- Franklin, et.al., **India is World diabetes capital**.(2009) Nightingale nursing time. vol 5. (8- 13).
- Henry Devis, et. al., International diabetes foundation,(2011). Act on diabetes now. Nightingale nursing times. vol 7. no 8. 3.
- Latha,S., (2011). **Self management practice of diabetes**. Nightingale nursing times. vol 7. no 8. 53.
- Latha,S., (2011). **Foot care among diabetic patients**. Nightingale nursing times. vol 6. no 12. 7-9
- Mohan. v, et. al., (2008) Epidemiology of **type 2 diabetes: Indian scenario**. & **Office of the World Health Organization**, New Delhi. Indian Journal of Medical Research 125 2007 March; pp 217-230.

- Prabhudev, (2009). **Education and prevention of diabetes**. Nightingale nursing times, vol 5. (8)
- Telidevi venkata satyanarayanamma, (2009) **Management of diabetes mellitus by diabetic patients**. Nightingale nursing times vol 6.(8)
- Venkatesan, B., (2007). **Diabetic meal planning** Nightingale nursing times. vol 8(4) 27-29.
- Wenying Yang., **Prevalence of Diabetes among Men and Women** in China. The New England Journal of Medicine. 2010 March 25, (362):1090-1101.

ELECTRONIC ARTICLES

- **National Diabetes Fact Sheet**, (2011) Jan; 26. <http://www.diabetes.org/diabetes-basics/diabetes-statistics>.
- Diabetic patient guides, 2013, <http://www.healthcentral.com/diabetes/patient-guide-44593-6.html>

A U X U S

ANNEXURE-1

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY



Annammal College of Nursing

(Approved by Govt. of Tamilnadu, TN Nurses & Midwives Council,
Indian Nursing Council and Affiliated to The Tamilnadu Dr. MGR Medical University)

Annammal Hospital Campus, KUZHITHURAI - 629 163

K.K. Dist, Tamil Nadu. Ph : 04651 - 260614, Fax : 04651 - 260605

www.annammalnursing college.com Email : annammalcollege2007@yahoo.co.in

Dr. Sheeba Jayalal MBBS, DGO

Chairperson

Date :

From

Prof.Mrs.J.M.Jerlin Priya, M.Sc(N),Ph.D.,
Principal,
Annammal College of Nursing,
Kuzhithurai.

To

Respected Sir,

Sub: Seeking permission to conduct the research study.

Mr. Sam Gabriel, II year M.Sc (N) student of Annammal College of Nursing, Kuzhithurai, is approaching you to conduct a research on "A descriptive study to assess the Predictive Factors of type II diabetes mellitus among patient with known diabetes in Annammal, Hospital, Kuzhithurai at Kanyakumari District". Which he has to complete as a partial fulfillment of university requirement for the award of Master of Science in Nursing Degree.

In this regards I humbly request you to give permission to conduct the study in your hospital.

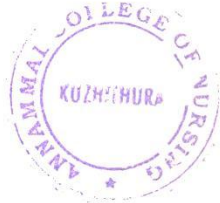
Thanking you

Yours faithfully,

Principal

Principal

Annammal College of Nursing
Kuzhithurai, K.K. Dist., - 629 163



"What we are is gift of god and What we become is gift to god"

ANNEXURE –II



LETTER GRANTING PERMISSION TO CONDUCT THE STUDY

Annammal Hospital, Kuzhithurai, K.K.Dist - 629163
Phone: 04651-260555, 260511 | Cell: +91 9788860031 - 24, Fax: 04651-260605
E-mail: annammalhospital@yahoo.in

26-11-2015


Sam Gabriel a student of M.Sc (Nursing) program from Annammal College of Nursing, Kuzhithurai., conducted a study on

“A descriptive study to assess the Predictive Factors of type II Diabetes Mellitus among patient with known diabetes in Annammal Hospital, Kuzhithurai at Kanyakumari District”

As part of his study he educated the staff regarding infection control measures also he conducted his research in our hospital in an excellent manner with good dedication and in a pleasant way.

We wish all the very best to **Sam Gabriel** for a very successful and fruitful career.




Chief Medical Officer
Dr. SHEERA JAYALAL, MBBS., DGO
REG NO 80622
CHIEF MEDICAL OFFICER
ANNAMMAL HOSPITAL
KUZHITHURAI

What we are is Gift of God and
What we become is Gift to God

ANNEXURE III

ETHICAL CLEARANCE CERTIFICATE

Valid from : 2015

Valid to : 2016

Name of the Investigator: Mr. Sam Gabriel

The Ethical committee meeting held on 07-03-2015 had reviewed the project titled "A descriptive study to assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes in Annammal hospital, kuzhithurai." The proposal was submitted before the ethical committee for the acceptance and found to be acceptable on ethical grounds. The ethical committee held responsibility and accountability for the investigator for any other administrative approvals that may pertain to this research. This has to be carried out according to conditions outlined in the original protocol submitted for ethical review.

This certificate of approval is valid for the time period provided. there is no change in the methodology protocol or consent process and documents.

Any significant change should be reported to guide for its considerations in advance for its implementation.

Signature of Ethical Committee members:

1. **Dr. Sheeba Jayalal M.B.B.S.,D.G.O.,**
Chief Medical Officer

2. **Dr. Jayalal M.S.,F.I.C.S.,(Germany),M.B.A.,F.I.A.G.E.S**
Chief Surgeon

3. **Dr. Shanthi Appavu M.Sc(N).,PhD**
Nursing Research Advisor

4. **Prof. Mrs. Jerlinpriya M.Sc (N).,PhD**
Research Guide

ANNEXURES IV

LETTER SEEKING OPINION FOR VALIDATING THE TOOL

Dr. Sheeba Jayalal MBS, DGO
Chairperson

Date :

To

Respected Madam/Sir,

Sub: M.Sc Nursing Programme – Dissertation - Validation of study tool
request-reg.

Mr. Sam Gabriel, a bonafide II Year M.Sc (N) student of Annammal College of Nursing, Kuzhithurai is approaching you to obtain validation of his study tool pertaining to his dissertation in partial fulfillment of the requirements for the degree of Master of Science in Nursing. The selected topic is

“A descriptive study to assess the predictive factors of type II diabetes mellitus among patients with known diabetes in Selected Hospitals at Kanyakumari District”

In this regards I humbly request you to kindly extent possible technical guidance and support for successful completion of dissertation.

I enclosed here with a checklist for your evaluation

Thanking you

Yours faithfully,



[Signature]
Principal
Annammal College of Nursing
Kuzhithurai, K.K. Dist.- 629 103

Our Motto : "Heal us to Heal others"

"What we are is gift of god and What we become is gift to god"

ANNEXURE V

VALIDATION FOR RESEARCH TOOL

Instructions

The expert is requested to go through the following criteria for evaluation. Three columns are given for responses and a column for remarks. Kindly place tick mark in the appropriate column and give remarks.

S. No	Criteria	1	2	3	Remarks
1	Content <ul style="list-style-type: none">➤ Adequacy➤ Relevance➤ Organized				
2	Language <ul style="list-style-type: none">➤ Simplicity➤ Clarity➤ Relevant				
3	Scoring <ul style="list-style-type: none">➤ Easy to score➤ Clarity➤ Relevant				
4	Practicability <ul style="list-style-type: none">➤ Procedure➤ Utility➤ Feasibility				

Interpretation of column

Column I : Meets the criteria.

Column II : Partially meets the criteria.

Column III: Does not meets the criteria.

Designation

Signature of the Expert

ANNEXURE VI
LIST OF EXPERTS

- 1. Dr. Andrew PrabhinSathish. MD**
Physician
S.P Multi specialty hospital,
Parassala
- 2. Mrs.Sheeba. C MSc(N) Reader ,**
Department of Medical Surgical nursing,
Christian College of
Nursing,
Neyyoor.
Kanyakumari District
- 3. Mrs. Merlin Suja. MSc(N) Reader,**
Department of medical surgical nursing
C.S.I. College of nursing,
Marthandam
Kanyakumari District
- 4. Mrs.Moona. J. Cicil. MSc(N), Associate Professor,**
Department of medical surgical nursing,
Christian College of Nursing,
Neyyoor,
Kanyakumari District
- 5. Mrs. Y. VinithaBai. MSc(N) Associate Professor,**
Department of medical surgical nursing,
C. S.I. College of Nursing,
Marthandam,
Kanyakumari District
- 6. Mrs.Vini. William. MSc (N) Associate Professor,**
Department of medical surgical nursing,
Thassaih College of
Nursing,
Marthandam,
Kanyakumari District
- 7. Mr.AntoJohnBritto.M.Sc., M.Ed., M.Phill.,P.G., BBM.,**
Bio Statistician,
ScottChristian collegeNagercoil,
Kanyakumari District

ANNEXURE VII

RESEARCH PARTICIPANT CONSENT FORM

Dear participant,

I am Sam Gabriel, BSc Nursing student of Annammal College of Nursing, Kuzhithurai. As a part of my research 'A descriptive study to assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes' will be helpful to identify the factors influencing Type II Diabetes Mellitus. I hereby seek your consent and co-operation to participate in the study. Please be frank and honest in your responses. The information collected will be kept confidential and anonymity will be maintained.

Signature of the researcher

I hereby consent to participate and undergo the study.

Place:

Date:

Signature of the participant

Muha;r;rpapy; g';F bgWgtUf;fhd xg;g[jy; gotk;

md;ghh;e;j g';F bgWnthnu/

ehd; md;dk;khs; brtpypah; fy;Y]hpapy; brtpypah; gapw;r;rpapy; KJfiygl;lk;
bgWtjw;f;F gapw;r;rpapd; xU gFjpahf ePuHpt[neha; Vw;gLtjw;fhd fhuz';fs;
gw;wpa Muha;r;rp nkwb;fhs;f;pnwd;. ,e;j Muha;r;rpapd; Kot[fs; gaDs;sjhf mika[k;.

,jdhy; ,e;j Muha;r;rpapy; eP';fs; g';Fbgw c';fSila xg;g[jy; kw;Wk;
xj;JiHg;iga[k; ju ntz;Lfpnwd;. jat[bra;J c'fSila gjpy;fs; btspg;gilahft[k;/ cz;ikahft[k;
,Uf;f ntz;Lk;. c';fSila bgah; kw;Wk; jfty;fs; ntW v';Fk; btspaplg;glkhl;lhJ.

Muha;r;rpahshpd; ifbahg;gk;

..... vd;w ehd; ,e;j Muha;r;rpapy; g'F bgw KG kdJld;
rk;kjpf;f;pnwd;.

g';F bgWnthhpd; ifbahg;gk;.

ANNEXURE VIII

CERTIFICATE OF ENGLISH EDITING

TO WHOMEVER IT MAY CONCERN

This is to certify that the dissertation, “A descriptive study to assess the predictive factors of Type II Diabetes Mellitus among patients with known Diabetes in Annammal hospital, kuzhithurai,” by Mr. Sam Gabriel, 2nd year MSc(N) student of Annammal College of Nursing was edited for English language appropriateness by




Signature

SHEEBA JACOB
H.S.S. TEACHER (ENGLISH)
GOVT. HIGHER SECONDARY SCHOOL
PAZHAMTHOTTAM, ERNAKULAM

ANNEXURE IX

CERTIFICATE OF TAMIL EDITING

TO WHOMEVER IT MAY CONCERN

This is to certify that the dissertation, “A descriptive study to assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes in Annammal hospital, kuzhithurai,” by Mr. Sam Gabriel, 2nd year MSc(N) student of Annammal College of Nursing was edited for Tamil language appropriateness by



ANNEXURE X

TOOL – I

SAMPLE NO:

SECTION-A

DEMOGRAPHIC VARIABLE PROFORMA

INSTRUCTION: Kindly place a tick mark against the option which you feel as appropriate.

1) Age

a) 30-40years

b) 41-50years

c) 51-60 years

2) Gender

a) Male

b) Female

3) Religion

a) Muslim

b) Christian

c) Hindu

d) Other

4) Type of family

a) Nuclear

b) Joint

5) Residing place

- a) Urban
- b) Rural

6) Education.

- a) Illiterate
- b) Primary
- c) Secondary
- d) High school
- e) Higher secondary
- f) College

7) Occupation

- a) Daily wage
- b) Regular monthly income
- c) Unemployed

8) Family income per month in rupees.

- a) Below 2000
- b) 2000-5000
- c) 5001-8000
- d) Above 8000

SECTION-B

CLINICAL VARIABLES PROFORMA

1) For how long have you been diabetic?

- a) Less than five years
- b) Between five and ten years
- c) More than 10 years

2) What are the medical measures that you are taking?

- a) Oral medication
- b) Insulin injection
- c) No measures

3) What are the non medical measures that you are taking?

- a) Yoga
- b) Ayurveda
- c) Exercise
- d) Diet control

4) What was your blood sugar level when you last checked?

- a) Below 120 mg/dl
- b) Between 120 and 200 mg/dl
- c) Between 200 and 300 mg/dl
- d) Above 300 mg/dl

TOOL - II

PLANNED STRUCTURED QUESTIONNAIRE

INSTRUCTION: Kindly place a tick mark against the option which you feel as appropriate.

Section-A

DIETARY FACTORS

1) What is your dietary pattern?

- a) Non vegetarian
- b) Mixed
- c) Vegetarian

2) How many time do you consume food?

- a) More than 4 times/day
- b) 4 times /day
- c) 3 times /day

3) How often do you eat fast food?

- a) 4-6 times/week
- b) 1-3 times/ week
- c) Not often

4) What is your preferred source of food?

- a) Meat, vegetables, nuts
- b) Meat, vegetables
- c) Vegetables, grains, fibers

5) What is your common cooking method?

- a) Frying, roasting
- b) Roasting, boiling
- c) Boiling, steaming

6) How often do you take coffee/tea per day before diagnosing diabetes mellitus?

- a) 4 or more times
- b) 2-3times
- c) Not preferred

7) How many times a day you prefer to take rice?

- a) 3 times per day
- b) 2 times/day
- c) Once a day

8) What are the most favorite food items that you eat?

- a) Chocolates, ice cream, and junk foods.
- b) Non vegetarian.
- c) Raw or cooked vegetables and fruits

9) How often do you drink sweetened and carbonated bottle drinks like pepsi, cola etc.?

- a) 3-5 times per week
- b) 1-2 times per week
- c) Not preferred

10) How often do you eat fiber rich diet including green?

a) Whenever available

b) Alternative days

c) Daily

Section -B

HEALTH FACTORS

1) How do you rate your general health before diagnosing diabetes mellitus?

a) Poor

b) Good

c) Excellent

2) Who is having the history of diabetes mellitus in your family?

a) First degree relation

b) Second degree relation

c) No one

3) How far do you walk daily?

a) Less than 1 km

b) 1-2 kms

c) More than 2 kms

4) Are you hypertensive? If yes when you are diagnosed?

a) Before diagnosing diabetes mellitus

b) After diagnosing diabetes mellitus

c) No

5) What was your pre-diabetic BMI status?

a) Over weight

b) Under weight

c) Normal

6) In which age patient was diagnosed as diabetic?

a) After 40 years

b) 31- 40 years

c) 20 – 30 years

7) What is your sleep pattern before diagnosing diabetes mellitus?

a) Less than 6 hours

b) More than 9 hours

c) 6-8 hours

8) Do you have any respiratory conditions? If yes when was it diagnosed?

a) Before diagnosing diabetes mellitus

b) After diagnosing diabetes mellitus

c) No

9) Do you have any cardiac conditions? If yes when was it diagnosed?

a) Beflore diagnosing diabetes mellitus

b) After diagnosing diabetes mellitus

c) No

10) Do you have any metabolic conditions? If yes when was it diagnosed?

a) Before diagnosing diabetes mellitus

b) After diagnosing diabetes mellitus

c) No

Section -C

LIFESTYLE FACTORS

1) How often do you consume alcohol before diagnosing diabetes mellitus?

a) Daily

b) Occasionally

c) Nil

2) How long do you exercise daily?

a) Nil

b) Half an hour

c) 1 hour

3) What type of exercise you are doing daily?

a) No exercise

b) Mild exercise

c) Heavy

4) How do you categorize your stress?

a) Severe

b) Moderate

c) Mild

5) Which type of work you do?

a) Sedentary work

b) House holdwork

c) Heavy work

6) Which type of smoke are you exposed to?

- a) First hand cigarette smoke
- b) Passive smoke
- c) Air pollution

7) What is your residing area?

- a) City
- b) Town
- c) Village

8) How long you are exposed to sunlight per day?

- a) Below one hour
- b) 1-3m hours
- c) Above 3 hours

9) Are you regular in your daily food intake?

- a) Mostly irregular
- b) Intermittently irregular
- c) Scarcely irregular

10) What is your usual mode of transportation?

- a) Own motor vehicle
- b) Public transport
- c) Walking/cycling

nehahspapd; bghJtptuk;

vjp nubfhLf;fg;gl;lfl;l; jpy; rhp[√]vdFwpapLf

1. taJtuk;g[

m) 30 taJKjy; 40taJtiu

M) 41 taJKjy; 50 taJtiu

,) 51 taJKjy; 60 taJtiu

2. ghypdk;

m) Mz;

M)bgz;

3. kjk;

m) K!;yPk;

M)fpwp!;jth;

,) ,e;J

<) kw;wit

4. FLk;gtif

m)jdpr;FLk;gk;

M)TI;Lf;FLk;gk;

5. ,Ug;gplk;

m) efuk;

M)fpuhkk;

6. FLk;gj;jpd; khjtUkhdk; +ghapy;

m) +gha; 2000/- f;FFiwthf

M) +gha; 2000 Kjy; +gha;5000tiu

,) +gha; 5000 Kjy; +gha; 8000 tiu

<) +gha; Kjy; 8000/-f;Fnky;

7. fy;tpjFjp

m) gog;gwpt[,y;yhjth;

M)bjhlf;fepiyf;fy;tp

,) ,ilepiyf;fy;tp;

<) cah; epiyf;fy;tp;

c) nky; epiyf;fy;tp;

C) fy;Y}hpf;fy;tp;

8. bjhHpy;

m) jpdf;Typntiybra;gth;

M)epiyahdkhjtUkhdk; <l;Lgth;

,) ntiyaw;wth;

\kUj;Jtrk;ke;jkhdfhuzpfs;

1. c';fSf;Fvt;tst[fhykhfrh;f;fiutpahjp ,Uf;fpwJ>

m) 5 tUI';fSf;FFiwthf

M) 5tUIj;jpypUe;J 10 tUIj;jpw;F ,ilg;gl;lfhyj;jpy;

,) 10 tUI';fSf;Fnky;

2. eP';fs; ve;jtifahdkUj;JtKiwiaifahSfpwPh;fs;>

m) khj;jpiufs;

M) ,d;Rypd;

,) vJt[k; ,y;iy

3. eP';fs; kUj;Jtkpy;yhjve;jtifahdgpwKiwfisifahSfpwPh;fs;>

m) nahfhjpahdk;

M)Ma[h;ntjh

,) clw;gapw;rp

<) czt[fl;Lg;ghL

4. c';fSf;F ,Wjpahfghpnrhjpf;fg;gl;lrh;f;fiumst[vd;d>

m) 120 mg/dlf;FFiwthf

M) 120ypUe;J 200 mg/dl;

,) 200 ypUe;J 300 mg/dl

<) 300 mg/dlf;Fnky;

czt[rk;ke;jkhdfhuzpfs;

1. eP';fs; vt;tifahdczt[KiwiaifahSfpwPh;fs;>

m) Mirtk;

M)vy;yhtifahdczt[fs;

,) irtk;

2. jpdKk; vj;jidKiwcztl[cl;bfhs;tPh;fs;>

m) xUehs; 4 jlif;Fnky;;

M)xUehs; 4 jlif;

,) xUehs; 3jlif;

3. eP';fs; vg;bghGbjy;yhk; JhpjczitvLj;Jbfhs;tPh;fs;>

m) thuj;jpw;F 4 ypUe;J 6 jlittiu

M)thuj;jpw;F 1ypUe;J 3 jlittiu

,) cl;bfhs;tjpy;iy

4. eP';fs; mjpfkhfvLj;Jbfhs;Sk; czt[tiffs;>

m) ,iwr;rp/ fha;fwpfs;/ bfhl;ilfs;

M) ,iwr;rp/ fha;fwpfs;

,) fha;fwpfs;/ jhdpa';fs;/ ehh;rj;Jfs;

5. bghJthfve;jtifahdrikay; KiwiaifahSfpwPh;fs;>

m) bghhpj;jy;/ tWj;jy;

M)tWj;jy;/ bfhjpf;fitj;jy;

,) bfhjpf;fitj;jy;/ Mtpapy; ntfitj;jy;

6. rh;f;fiutpahjpiatz;lwpa[k; Kd; xUehSf;Fvj;jidKiwfhg;gpmy;yJnjePh;
mUe;JtPh;fs;>

m) 4 jlif;Fnky;

M) 2 jlitKjy; 3 jlif; tiu

,) mUe;Jtjpy;iy

7. xUehspy; vj;jidKiwnrhWrhg;gpLtPh;fs;>

m) xUehs; 3 Kiw

M)xUehs; 2 Kiw

,) xUehs; xUKiw

8. eP';fs; kpft[k; tpUk;gpcz;zf;Toaczt[tiffs; vd;d>

m) rhf;nyl;/ !l;fphPk;/ kw;Wk; behWf;FjPdps;

M)mirtk;

,) gr;irmy;yJrikj;jfha;fwps; kw;Wk; gH';fs;

9. fhh;gndl; fye;jFsph;ghd';fis (bgg;rp/ nfhyh/.....) vg;bghGbjy;yhk;
mUe;JtPh;fs;>

m) thuj;jpw;F 3lit Kjy; 5 jlif; tiu

M) thuj;jpw;F 1 jlitKjy; 2 jlif; tiu

,) mUe;Jtjpy;iy

10.

ehh;rj;Jepiwe;jvdt[tiffisvg;bghGbjy;yhk; cz;gPh;fs;>

m) fpilf;Fk; nghJ

M) ,uz;Lehl;fSf;FxUKiw

,) jpdKk;

Mnuhf;fpafhuzpfs;

1. rh;f;fiutpahjp ,Ug;gijfz;lwpa[k; Kd;g[c';fsJcly;epiyvg;go ,Ue;jJ>

m) nkhrkhf

M)ed;whf

,) kpft[k; ed;whf

2. c';fsJFLk;gj;jpy; ahUf;fhtJrh;f;fiutpahjpcs;sjh>

m) Kjy;epiycwtpdh;fs;

M) ,uz;lhk; epiycwtpdh;fs;

,) ,y;iy

3. jpdKk; vt;tst[J}uk; eilgapw;rpbra;fpwPh;fs;>

m) 1 fp.kP. f;FFiwthf

M) 1 ypUe;J2fp.kP

,) 2 fp.kP.f;Fnky;

4. c';fsf;F ,uj;jmGj;jneha; cs;sjh>cz;Lvdpy;
vg;bghGJmwpe;Jbfhz;Oh;fs;>

m) rh;f;fiuneha; ,Ug;gijmwptjw;FKd;g[

M)rh;f;fiuneha; ,Ug;gijmwpe;jgpd;g[

,) ,y;iy

5. rh;f;fiunehapidfz;lwptjw;FKd;g[cly; gUkd; FwPaPI;Lmst[vd;d>

m) mjpfcly; vil

M)Fiwthdcly; vil

,) rhpahdcly; vil

6. **ve;jtajpy; eP';fs; rh;f;fiuneha; ,Ug;gijmwpe;Jbfhz;Oh;fs;>**
- m) 40 tajpw;FgpwF
- M) 31tajpypUe;J 40 tajpy;
- ,) 20tajpypUe;J 30 tajpy;
7. **rh;f;fiunehapidfz;lwpa[k; Kd;g[c';fsJ J}f;fj;jpd; mst[**
- m) 6 kzpneuj;jpw;FFiwthf
- M) 9 kzpneuj;jpw;Fnky;
- ,) 6kzp neuj;jpypUe;J 8 kzpneuk; tiu
8. **c';fSf;FEiuaPuy; rk;ke;jkhdneha; VnjDk; cz;lh>cz;Lvdpy; vg;bghGJmwpe;Jbfhz;Oh;fs;>**
- m) rh;f;iunehiafz;lwpa[k; Kd;g[
- M)rh;f;iunehiafz;lwpe;jgpd;g[
- ,) ,y;iy
9. **c';fSf;F ,Ujark;kejkhedneha; VnjDk; cz;lh>cz;Lvdpy; vg;bghGJmwpe;Jbfhz;Oh;fs;>**
- m) rh;f;fiunehiafz;lwpa[k; Kd;g[
- M)rh;f;iunehiafz;lwpe;jgpd;g[
- ,) ,y;iy
- 10 **c';fSf;Ftsh;rpjkhw;wneha;fs; VnjDk; cz;lh>cz;Lvdpy; vg;bghGJmwpe;Jbfhz;Oh;fs;>**
- m) rh;f;iunehiafz;lwpa[k; Kd;g[
- M)rh;f;iunehiafz;lwpe;jgpd;g[
- ,) ,y;iy

thH;t[KiwfhuZpfs;

**1. rh;f;fiutpahjp ,Ug;gijfz;lWpa[k; Kd;g[vj;jidKiwkJghdk;
mUe;JtPh;fs;>**

m) jpdKk ;

M)vg;bghGjhtJ

,) ,y;iy

2. jpdKk; vt;tst[neuk; clw;gapw;rpbra;tPh;fs;>

m) clw;gapw;rpgz;qtjpy;iy

M)miukzpneuk;

,) xUkzpneuk;

3. jpdKk; ve;jtifahdclw;gapw;rpiabra;fpwPh;fs;>

m) clw;gapw;rpbra;tjpy;iy

M)kpjkhdcLw;gapw;rp

,) fLikaHdcLw;gapw;rp

4. c';fsJkdMGj;jk; vg;gogl;IJ>

m) fLikaHdJ

M)kpjkhdcLw

,) Xustpw;F

5. ve;jtifahdntiyiabra;fpwPh;fs;>

m) rhPuciHg;gpy;yhjntiy

M)tPl;Lntiy

,) fLikaHdntiy

6. vt;tifahd g[iff;FeP';fs; MshfpwPh;fs;>

m) rpfbul; g[if gpog;gjpdhy;

M)kw;wth;fs; g[ifg;gjpdhy;

,) khRg;gl;lfhw;wpdhy;

7. c';fSila ,Ug;gplk; vg;gog;gl;lJ>

m) khefuk;

M)efuk;

,) fpuhkk;

8. vt;tst[nruk; Nhpaxspf;Fcs;shfpwPh;fs;>

m) 1 kzpneuj;jpw;FFiwthf

M) 1-3 kzpneuk;

,) 3 kzpneuj;jw;Fnky;

9. jpdKk; neuj;jpw;Fczt[cl;bfhs;fpwPh;fsh>

m) bgUk;ghYk; xG';fw;wneuj;jpy;

M)rpyrkak; xG';fw;wneuj;jpy;

,) vg;bghGjhtJxG';fw;wneuj;jpy;

10. **eP';fs;**
ve;jtifahdthfdj;jpy; gazk; bra;fpwPh;fs;>

m) brhe;jkhd ,Urff;futhfdk;

M)muRngUe;J

,) eilgazk; my;yJkpjptz;o

ANNEXURE XI
MASTER CODE SHEET

Sl.No	Age	gender	religion	Type of family	Residing area	education	occupation
1	a	a	b	a	b	f	b
2	b	a	c	a	a	c	a
3	a	b	a	b	a	c	b
4	c	a	b	a	a	e	c
5	b	a	c	a	b	b	a
6	a	a	a	a	a	d	a
7	a	a	b	a	b	f	b
8	c	b	a	b	a	d	a
9	c	a	b	a	a	e	b
10	b	a	c	a	a	c	b
11	a	a	a	a	b	e	a
12	c	a	b	a	a	d	b
13	a	b	a	b	a	e	a
14	b	a	c	a	a	f	c
15	a	a	b	a	b	c	b
16	c	a	a	a	a	e	a
17	b	a	c	a	b	d	b
18	a	b	b	b	a	f	b
19	b	a	a	a	a	b	a
20	a	a	b	a	a	e	a
21	b	a	c	a	b	f	a
22	a	a	a	a	a	c	b
23	c	b	b	b	a	e	a
24	c	a	c	a	a	d	a
25	a	a	b	a	b	f	b
26	b	a	a	a	a	c	a
27	a	a	b	a	b	d	c
28	c	b	a	b	a	e	b
29	b	a	b	a	a	b	a
30	c	a	a	a	a	f	b
31	a	a	b	a	b	f	b
32	c	a	c	a	a	c	c
33	a	b	a	b	a	e	b
34	c	a	b	a	a	b	b
35	a	a	a	a	b	d	b
36	a	a	c	a	a	c	a
37	b	a	b	a	b	f	b
38	a	b	a	b	a	e	a
39	c	a	c	a	a	c	a
40	a	a	b	a	a	e	a
41	a	a	a	a	b	d	b
42	b	a	b	a	a	c	b
43	c	b	c	b	a	f	c
44	a	a	a	a	a	c	b
45	c	a	b	a	b	e	b

46	a	a	a	a	a	b	b
47	b	a	b	a	b	e	a
48	a	b	c	b	a	f	b
49	c	a	a	a	a	c	b
50	a	a	b	a	a	e	a
51	c	a	c	a	b	d	b
52	a	a	a	a	a	e	c
53	a	b	b	b	a	c	b
54	b	a	a	a	a	f	b
55	a	a	b	a	b	d	a
56	c	a	c	a	a	c	b
57	a	a	a	a	b	e	a
58	a	b	b	b	a	b	a
59	c	a	a	a	a	e	b
60	a	a	c	a	a	d	a
61	c	a	b	a	b	f	b
62	a	a	c	a	a	d	c
63	b	b	a	b	a	e	a
64	a	a	c	a	a	d	b
65	c	a	b	a	b	f	a
66	a	a	a	a	a	c	b
67	c	a	c	a	b	e	a
68	a	b	b	b	a	d	b
69	a	a	a	a	a	f	b
70	b	a	c	a	a	e	a
71	a	a	b	a	b	f	c
72	c	a	a	a	a	c	b
73	c	b	c	b	a	e	b
74	a	a	a	a	a	e	a
75	b	a	b	a	b	b	b
76	a	a	a	a	a	f	a
77	c	a	c	a	b	d	b
78	a	b	b	a	a	e	b
79	c	a	a	a	a	c	a
80	b	a	a	a	a	e	b
81	c	a	c	b	b	d	a
82	a	a	b	a	a	e	c
83	a	b	a	b	a	f	b
84	c	a	b	a	a	c	b
85	b	a	a	a	b	e	a
86	a	a	c	a	a	d	b
87	c	a	b	a	b	e	b
88	b	b	a	b	a	f	a
89	c	a	b	a	a	d	a
90	a	a	a	a	a	f	a
91	c	a	c	a	b	e	b
92	a	a	b	a	a	c	a
93	c	b	b	a	a	d	b
94	b	a	b	a	a	e	a
95	c	a	b	b	b	b	b
96	a	b	c	a	a	e	a
97	c	a	b	a	b	d	c

98	a	a	b	b	a	f	b
99	c	a	a	a	a	c	a
100	a	a	b	a	a	e	b

CHAPTER- I

INTRODUCTION

“Finding the cause is the first step of treatment”

-Edward Jenner

Type II Diabetes Mellitus is, by far the most prevalent type of diabetes, accounting for over 90% of people with diabetes. Type II diabetes usually occurs in people over 35 years of age, 80% to 90% of patient is found to be obese at the time of diagnosis.

Prevalence of Type II diabetes increases with age, with above half of the people diagnosed being older than 55 years. In the past, Type II diabetes was known as ‘adult-onset’ diabetes. This term is no longer considered appropriate because the disease is now being seen in an increase in number among children, adolescent and young adults.

There are many factors which cause this systemic dysfunction. The development of Type II diabetes is caused by a combination of lifestyle and genetic factors. While some of these factors are under personal control, such as diet and obesity, other factors are not under personal control including, increasing age, female gender, and genetics. A lack of sleep has been linked to Type II diabetes. This is believed to act through its effect on metabolism. The nutritional status of a mother during fetal development may also play a role, with one proposed mechanism being that of altered DNA methylation.

It is nearing epidemic proportions, due to an increased number of elderly people, a greater prevalence of obesity and a sedentary lifestyle. In Type II diabetes, patients can still produce insulin, but do so inadequately. The pancreas in these patients not only produces an insufficient amount of insulin, but also releases insulin late in response to increased glucose levels. Some Type II diabetics have body cells that are resistant to the action of insulin. Finally, the liver in these patients continue to produce glucose despite elevated glucose levels

The long term complications of diabetes are what make it such a devastating disease. Diabetes is the leading cause of adult blindness, end- stage renal disease, and

non-traumatic lower limb amputations. It is also a major contributing factor for heart disease and stroke. Adult with heart disease have death rates two to four times higher than adult without diabetes. The risk of stroke is also two to four times higher among people with diabetes. In addition about 73% of adult with diabetes have hypertension.

Pre-diabetes indicates a condition that occurs when a person's blood glucose levels are higher than normal but not high enough for the diagnosis of Type II Diabetes Mellitus. Many people destined to develop Type II Diabetes Mellitus spend many years in a state of pre-diabetes.

Some cases of diabetes are caused by the body's tissue receptors not responding to insulin which is not common. Genetic mutation can lead to defects in beta cell function. Abnormal insulin action may also have been genetically determined in some cases. Any disease that causes extensive damage to the pancreas may lead to diabetes (for example, chronic pancreatitis and cystic fibrosis). Diseases associated with excessive secretion of insulin-antagonistic hormones can cause diabetes (which is typically resolved once the hormone excess is removed). Many drugs impair insulin secretion and some toxins damage pancreatic beta cells. Diabetes mellitus is a chronic disease, for which there is no known cure except in very specific situations. Management concentrates on keeping blood sugar level as close to normal, without causing low blood sugar. This can usually be accomplished with a healthy diet, exercise, weight loss, and use of appropriate medications (insulin in the case of type 1 diabetes; oral medications, as well as possibly insulin, in type II diabetes).

Learning about the disease and actively participating in the treatment is important, since complications are far less common and less severe in people who have well-managed blood sugar levels. The goal of treatment should not be lower than that, and may be set higher. Attention is also paid to other health problems that may accelerate the negative effects of diabetes. These include smoking, elevated cholesterol levels, obesity, high blood pressure, and lack of regular exercise. Specialized footwear is widely used to reduce the risk of ulceration, or re-ulceration, in at-risk diabetic feet. Evidence for the efficacy of this remains equivocal. People with diabetes can benefit from education about the disease and treatment, good nutrition to achieve a normal body weight, and exercise,

with the goal of keeping both short-term and long-term blood glucose levels within acceptable bounds. Lifestyle modifications are recommended to control blood glucose.

BACKGROUND OF THE STUDY

GLOBAL SCENARIO

Type II diabetes is on the rise worldwide. **The International Diabetes Federation (IDF)** reports that as of 2013 there were more than 387 million people living with diabetes. **The World Health Organization (WHO)** estimates that 90 percent of American people suffer from Type II Diabetes. Patients with diabetes are 2-4 times more likely to have heart disease, which is present in 75 percent of diabetes-related death (more than 75,000 deaths due to heart disease annually). Diabetic patients are also 2 to 4 times more likely to suffer from stroke. Diabetes also accelerates the hardening of the arteries (atherosclerosis) of the larger blood vessels, leading to coronary heart disease (angina or heart attack), strokes, and pain in the lower extremities because of lack of blood supply.

INDIAN SCENARIO

According to **WHO** statistics, in India there are approximately 65 million peoples having Type II Diabetes Mellitus. 1.7 million new cases of diabetes were diagnosed in India especially among adults in the year 2013, and the prevalence of Type II diabetes is on the rise. The epidemic of Diabetes Mellitus, in particular Type II DM, is assuming significant proportions in developing countries, such as India. **The International Diabetes Federation (IDF)** has projected that the number of people with Diabetes in India would rise from 65.1 million in 2013 to 109 million in 2035. India has more Diabetes than any other country in the world, according to the **International Diabetes Foundation**. The disease affects more than 62 million Indians, which is more than 7.1% of India's Adult Population and is set to increase to over 100 million by 2030. An estimate shows that nearly 1 million Indians die due to Diabetes every year. As we are aware about incidence of Type II Diabetes Mellitus, there is still a need to identify the exact risk factors of this disease, especially in the Indian society. A number of life style factors are known to be important to the development of Type II Diabetes, including obesity and overweight, lack of physical activity, poor diet, stress and urbanization.

Excess body fat is associated with 30% of causes in those of Chinese and Japanese descent.

STATE SCENARIO

The Indian Council of Medical Research-India Diabetes (ICMR-INDIAB) study, which was carried out in three states (Tamil Nadu, Maharashtra, and Jharkhand) and one union territory (Chandigarh), reported a varied prevalence of diabetes: 10.4% in Tamil Nadu, 8.4% in Maharashtra, 5.3% in Jharkhand, and 13.6% in Chandigarh.

One out of 10 people in Tamil Nadu is diabetic, and every two persons in a group of 25 are in the prediabetic stage. These statistics from phase I of the **Indian Council of Medical Research's INDIAB** (India-diabetes) demonstrates that "India will soon be the diabetes hub again if we don't intervene immediately," said Dr V Mohan, head of Madras Diabetes Research Foundation which does the study along with the Indian Council of Medical Research. While the prevalence and spread of diabetes appear to be alarming in the rural and urban areas, low awareness and lack of preventive steps remain major concerns. Finding of predictive factors of Type II diabetic mellitus help to identify the factors which are most commonly occur among people in selected area, hence the investigator chosen this present study.

NEED FOR THE STUDY

Type II diabetes is on the rise worldwide. Men are at slightly higher risk of developing diabetes than women, but age, excess weight (particularly around the waist), family history, physical inactivity, and poor diet are also significant risk factors for the illness. Although the exact prevalence is unknown, 4.6-9.2 percent of pregnancies may be affected by gestational diabetes, up to 10 percent of which result in a diagnosis of Type II diabetes in the mother immediately following the pregnancy.

Women who develop Gestational Diabetes during pregnancy have 35 to 60 percent chance of developing Type II Diabetes within 10 to 20 years following the pregnancy. In general, a child has 1 in 7 chance of developing Diabetes if one parent was diagnosed before age 50. A child has 1 in 13 chances, if the parent was diagnosed after age 50. Some studies suggest that the child's risk of developing Diabetes is greater if the mother has Diabetes. If both the parents have Diabetes, the child's risk is approximately

50 percent. Research suggests that 1 out of 3 adults have Pre-diabetes. Of this group, 9 out of 10 people don't know that they have Pre-diabetes.

Dietary factors also influence the risk of developing Type II Diabetes. Consumption of sugar, sweetened drinks in excess is associated with an increased risk. The type of fat in the diet with saturated fats increases the risk; eating lot of rice appears to play a role in increasing the risk. A lack of exercise is believed to cause 7% of causes. Hence prioritizing the predictive factors of diabetes mellitus can be useful in educating the people and thus have a greater impact in decreasing the incidence rate of Type II Diabetes.

Diabetes is the main cause of blindness in adult. Eye complication of Diabetes (diabetic retinopathy) occurs in patients who have had diabetes for at least 5 years. Disease in these blood vessels also causes the formation of small aneurysms (micro aneurysms), and new but brittle blood vessels. Spontaneous bleeding from the new and brittle blood vessels can lead to retinal scarring and retinal detachment thus impairs vision. Approximately 50% of patients with Diabetes will develop some degree of Diabetic retinopathy after 10 years of Diabetes, and 80% of Diabetics have retinopathy after 15 years of the disease.

Kidney damage from Diabetes is called Diabetic nephropathy. Kidney disease usually occurs approximately 10 years after the onset of Diabetes. Each year, about 28,000 people initiated treatment for end stage renal disease (kidney failure) because of Diabetes. The progression of nephropathy in patients can be significantly slowed by controlling high blood pressure, and by aggressively treating high blood sugar levels.

Nerve damage in Diabetes (diabetic neuropathy) is also caused by small blood vessel disease. Symptoms of Diabetic nerve damage include numbness, burning, and aching of the feet and lower extremities. Seemingly minor skin injuries should be attended promptly to avoid serious infections. Diabetic nerve damage can affect the nerves, which are important for penile erection, causing impotence. Diabetic neuropathy can also affect nerves to the intestines, causing nausea, weight loss, and diarrhoea. About 60-70% of people with Diabetes have mild to severe form of Diabetic nerve damage. The risk of leg amputation is 15-40 times greater for a person with Diabetes. Each year, more than 56,000 amputations are performed among people with Diabetes.

Sarah.W,(2009)conducted a descriptive study on Diabetes prevalence by age and sex. Urban and rural populations were considered separately for developing countries. It shows that the prevalence of Diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. The total number of people with Diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. The prevalence of Diabetes is higher in men than women, but there are more women with Diabetes than men. The urban population in developing countries is projected to double between 2000 and 2030. The most important demographic change to Diabetes prevalence across the world appears to be the increase in the proportion of people 65 years of age. These findings indicate that the “Diabetes epidemic” will continue even if levels of obesity remain constant. Given the increasing prevalence of obesity, it is likely that these figures provide an underestimate of future Diabetes prevalence.

Danielle A.J.M. Schoenaker,Gita D. Mishra, Leonie K. Callaway and Sabita S. Soedamah-Muthu., (2015) conducted a systematic review of observational studies regarding, the role of energy, nutrients, foods, and dietary patterns in the development of Gestational Diabetes Mellitus. The systematic review included 34 articles comprising 21 individual studies (10 prospective cohorts, 6 cross-sectional and 5 case-controls). A limited number of prospective cohort studies adjusting for confounders indicated associations with a higher risk of GDM for replacing 1–5% of energy from carbohydrates with fat and for high consumption of cholesterol (≥ 300 mg/day), heme iron (≥ 1.1 mg/day), red and processed meat (increment of 1 serving/day), and eggs (≥ 7 per week). A dietary pattern rich in fruit, vegetables, whole grains, and fish and low in red and processed meat, refined grains, and high-fat dairy was found to be beneficial. The current evidence is based on a limited number of studies that are heterogeneous in design, exposure, and outcome measures. The findings support current dietary guidelines to limit consumption of foods containing saturated fat and cholesterol, such as processed meat and eggs, as part of an overall balanced diet

Nisha NigilHaroon, Ammepa Anton, Jisha John and Madhukar Mittal., (2014) conducted a systematic review of prospective studies and randomized controlled trials that involved vitamin D supplementation and specifically intended to study glycemic outcomes related to Type II Diabetes. The various short-term studies (follow

up \leq 3 months) suggested that vitamin D supplementation had a positive impact on glycemic control and metabolic parameters such as insulin resistance and Beta cell dysfunction. However, the evidence was weak due to the low methodological quality of the studies. There was no significant effect on HbA1c, beta cell function and insulin resistance in the long-term studies (follow up $>$ 3 months). From the above mentioned studies, the researchers studied deeply about Diabetes Mellitus and tried to find out more details about it. But concrete and scientifically proved data on predictive factors is not yet readily available.

Hence, the researcher has chosen this study as research topic and thus could contribute to the knowledge pool.

STATEMENT OF THE PROBLEM

A descriptive study to assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes in Annammal hospital at Kanyakumari district

OBJECTIVES OF THE STUDY

The objectives of the study are

- To assess the predictive factors of Type II Diabetes Mellitus among patients with known Diabetes Mellitus.
- To find out the association between predictive factors of Type II Diabetes Mellitus and the selected socio demographic and clinical variables.

HYPOTHESIS

H₁: There will be a significant association between predictive factors of Type II Diabetes Mellitus among patients with known diabetes with their selected socio demographic and clinical variables

OPERATIONAL DEFINITIONS

Assess

It refers to the extent to which the planned structured questionnaire is used to find out the predictive factors of Type II Diabetes Mellitus among patient with known diabetes mellitus. This is measured by using factor analysis scale.

Predictive factors

It refers to the factors that increase a person's chance of developing Type II Diabetes Mellitus including dietary factors, health factors, and lifestyle factors.

Type II Diabetes Mellitus

Type II Diabetes Mellitus is the most common form of diabetes; here the human body does not use insulin properly thereby increasing blood glucose level.

Patient with known Diabetes Mellitus

Patients who are already diagnosed as diabetes and are within age group of 30-60 years

ASSUMPTIONS

The study assumes that

- Dietary factors may increase the chance of developing Type II diabetes, as increased consumption of carbohydrate/fat contained diet will amplify the demand for insulin which causes increase in pancreatic work load and thus result in subsequent malfunction of it.
- Health factors may cause diabetes, as certain medications and diseases can result in pancreatic damage or insulin inactivity.
- Life style factors may increase the chance of developing Type II Diabetes, as consumption of alcohol, smoking and lack of exercise will increase the glucose intake and hinder the physiological functions of human body
- Identifying the predictive factors of diabetes mellitus may be useful in educating the people.
- Identifying the predictive factors of diabetes mellitus may have an impact in decreasing the incidence rate.

DELIMITATIONS

The study was delimited to

- sample size of 100.
- age group of 30-60 years.
- patients in selected settings.
- Patient who are known diabetes.
- data collection period of one month.

PROJECTED OUTCOME

The findings of the study will help to identify the exact predictive factors of Type II Diabetes Mellitus

CONCEPTUAL FRAMEWORK

Conceptual framework is interrelated concepts or abstractions that are assembled together in some rational scheme by virtue of their relevance to common and sometimes referred to as conceptual scheme.

Concept is defined as a complex mental formulation of an object properly derived from individual perception and experience. Conceptual framework is interrelated concepts or abstractions that are assembled together in some rational scheme.

The conceptual framework selected for the present study was based on “General system theory by Ludwingn Von Berlanffy (1968).General system Theory explains that, a system is a set of interrelated elements. The interrelated elements in the abstract system are the human beings and their environment. As a living system and energy field, the individual is capable of taking in energy and information from the environment. Because of this exchange, the individual is an open system, an underlying assumption and building block. All living systems are an open system, which means that they exchange energy, matter and information across these boundaries with the environment. Survival in a 10 system must achieve balance internally and externally. According to General system theory,” science of wholeness and its purpose is to unit scientific thinking across the discipline and which provide framework for analysing the whole of any system”. The system has a specific purpose or goal and uses a process to achieve that goal. A system activity can be resolved into an aggregation of feedback circuits such as

- Input
- Through put
- Output

INPUT

It refers to any information, energy or material that enters into the system through its boundaries. In this study, Input refers to patient’s age, religion, education, occupation.

THROUGHPUT

It refers to the process whereby the system transforms, create and organizes input. In this study, Throughput refers to the administering questionnaire, collecting the data and analyzing the data.

OUTPUT

It refers to energy, information or matter that is transferred to the environment. In this study, Output refers to effectiveness of planned structured questionnaire to find out the predictive factors of Type II Diabetes Mellitus.

SUMMARY

This chapter has dealt with the back ground of the study, need for the study, statement of the problem, objectives of the study, assumptions, operational definitions, hypotheses, inclusion and exclusion criteria, delimitations and conceptual frame work of the study.

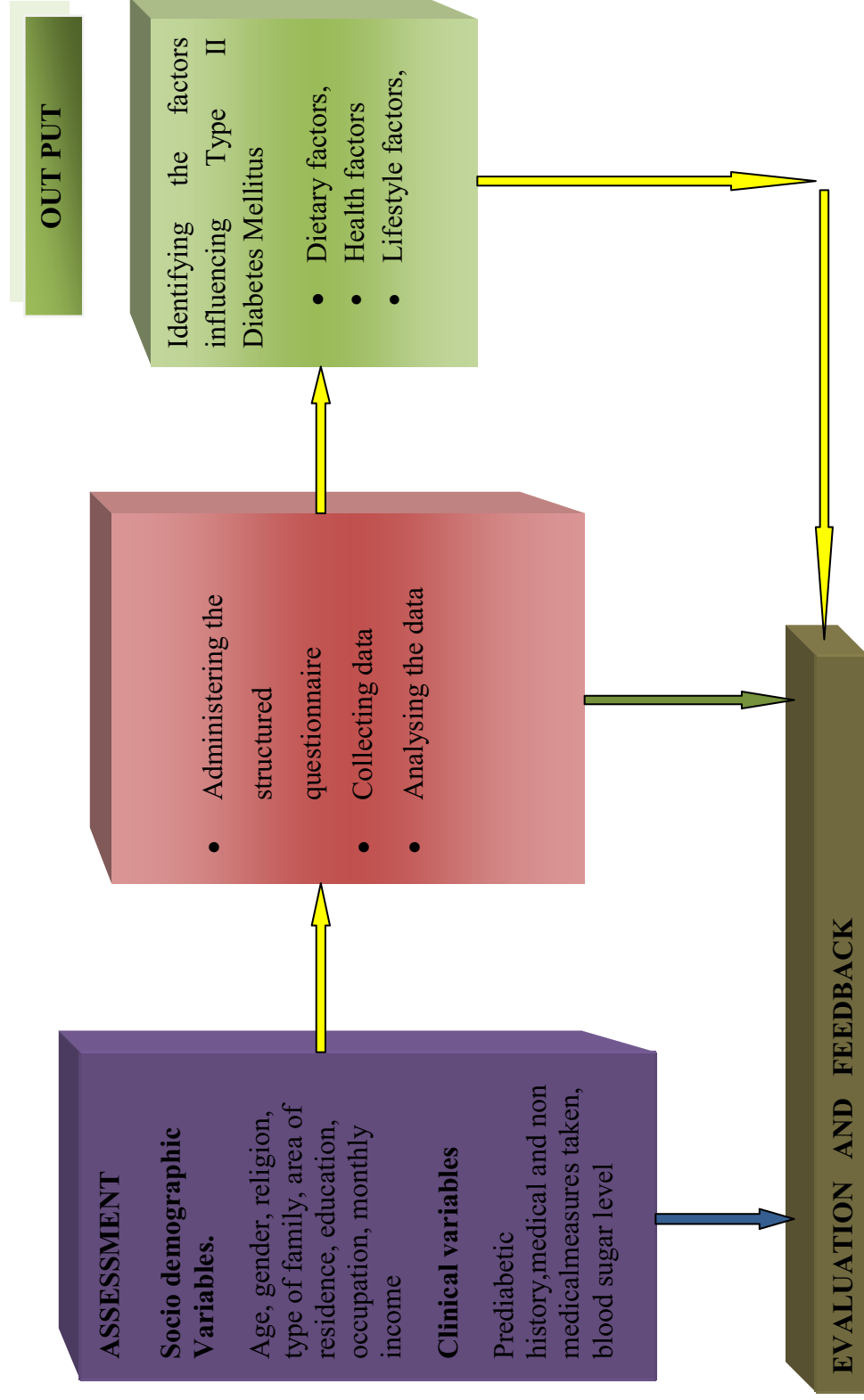


Fig 1: Modified Conceptual framework based on General System theory by Ludwing Von Bertalanffy (1968)

CHAPTER-II

REVIEW OF LITERATURE

Review of literature is a key step in research process. It refers to an extensive, exhaustive and systematic examination of publications relevant to the research project. Nursing research may be considered as a continuing process in which knowledge gained from earlier studies is an integral part of research in general.

(Basavanthappa B.T, 1998)

Literature review refers to the activities involved in searching for information on a topic and developing a comprehensive picture of the state of knowledge on that topic.

(Polit and Hungler, 1993)

Therefore the investigator studied and reviewed the related literature to broaden the understandings about the topic to gain insight into the selected problem under study. The literature has been reviewed under the following headings

- I. Reviews related to Type II diabetes mellitus.**
- II. Reviews related to risk factors of Type II diabetes mellitus**

I. Reviews related to Type II Diabetes Mellitus

Sarah Casa Grande ., **Linda Geisee.**, (2015) conducted a cross-sectional survey to estimate the recent prevalence and update US trends in total diabetes from National Health and Nutrition Examination Survey (NHANES) data. Surveys conducted between 1988-2012 data. The prevalence of diabetes was defined using a previous diagnosis of diabetes or, if diabetes was not previously diagnosed, by a hemoglobin A_{1c} level of 6.5% or greater or a fasting plasma glucose (FPG) level of 126 mg/dL or greater (hemoglobin A_{1c} or FPG definition) or additionally including 2-hour plasma glucose (2-hour PG) level of 200 mg/dL or greater (hemoglobin A_{1c}, FPG, or 2-hour PG definition). In 2011-2012, the estimated prevalence of diabetes was 12% to 14% among US adults, depending on the criteria used, with a higher prevalence among participants who were non-Hispanic black, non-Hispanic Asian, and Hispanic. Between 1988-1994

and 2011-2012, the prevalence of diabetes increased in the overall population and in all subgroups evaluated.

Annie Thomas., (2013) conducted a pilot study to investigate Type II Diabetes risk among Asian Indians of Kerala ethnicity living in West Texas County of USA. The study used a descriptive correlational design with thirty-seven adult non diabetic Asian Indian subjects between 20 and 70 years of age. The measurement included non-biochemical indices of obesity, family history of Type II Diabetes, length of immigration in US, history of hypertension, physical activity pattern, and fruit and vegetable intake. The majority of the subjects showed an increased non-biochemical indices corresponding with overweight and obesity, placing them at risk for Type II Diabetes and associated cardiovascular complications. Family history of Type II Diabetes was associated with an increase in body fat percentage. Fruit and vegetable intake pattern was not associated with a risk for Type II Diabetes.

Reshma S Patil., (2013) conducted a cross sectional study to find the prevalence of known cases of diabetes and its association with risk factors (>20 years) in urban slum of Pune city. Total subjects under study were 1779. Risk factors like age, waist circumference, and family history of diabetes and physical activities were assessed to find their association with diabetes. The result of prevalence of Type II Diabetes Mellitus was found in 4.6% with equal prevalence in both the sex. Higher prevalence of diabetes in males was found in the age group of >60 years while in females prevalence had occurred a decade earlier i.e. in 51-60 years. Abdominal obesity in females, family history of diabetes were found positively associated with diabetes while there was no significant association found between diabetes and physical activity.

Jun Liu, Dong Zhao(2013) done a multicenter cross-sectional study to find out the prevalence of diabetes mellitus (DM) and new detection of DM among 46 hospitals in China. Study patients were consecutively recruited from June to December 2009 from hypertension outpatient clinics. At least 100 consecutive patients were recruited in each hospital. FPG was measured for all patients and 2-hPG was measured in those without a history of DM. A total of 4942 hypertensive outpatients aged ≥ 20 years were included. Prevalence of DM was 24.3% (which included both previously and newly diagnosed cases). Among the 1202 patients with DM, 417 (34.7%) were newly detected. In patients

aged <45 years, 52.6% of cases of DM were newly detected. Of the 417 cases of newly detected diabetes, 54.9% were identified using FPG tests and the remaining 45.1% by 2-hPG tests; 27.1% of patients with newly detected DM had FPG <6.1 mmol/L and 16.5% had FPG <5.6 mmol/L. Among the elderly patients (≥ 65 years), 32.4% had normal FPG (<6.1 mmol/L) and 24.5% had optimal FPG (<5.6 mmol/L). Our findings showed a high prevalence of DM and newly detected DM among Chinese hypertensive outpatients.

C.Muninarayana, G.Balachandra (2010) conducted a cross-sectional study to find out the prevalence and awareness regarding diabetes mellitus in rural Tamaka, Kola. 311 adult subjects were interviewed, out of which (54%) were females and (46%) were male. Structured questionnaire was used to assess the knowledge of diabetes and capillary blood screening tests done to detect diabetes. Most of the surveyed population (60%) and diabetic patients (54.8%) are in the age group of 30-45 years. 50.8% of the respondents were aware of the disease diabetes mellitus (and remaining 49.2% of them were unaware of the diabetes); 70% of the illiterate and 43.5% of the literate were not aware of diabetes mellitus. Half of the interviewed population had some awareness about diabetes and its symptoms. But more than half (75%) of them were not aware of the long term effects of diabetes and diabetic care.

Sarah.W., (2009) conducted a descriptive study on Diabetes prevalence by age and sex. Urban and rural populations were considered separately for developing countries. It shows that the prevalence of Diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. The total number of people with Diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. The prevalence of Diabetes is higher in men than women, but there are more women with Diabetes than men.

II. Reviews related to risk factors of Type II diabetes mellitus

Silvia stringhini., (2012) conducted a prospective cohort study to assess the contribution of modifiable risk factors to social inequalities in the incidence of type 2 diabetes mellitus among civil service departments in London. The study subjects were 7237 adults without diabetes. The health factors, BMI, biological risk markers are measured four times from 1999 to 2009. Over a mean follow up of 14.2 years, 818 cases of diabetes were identified. Participants in the lowest occupational category had 1.86 fold

greater risk of developing diabetes relative to those in the highest occupational category. Modifiable risk factors such as health behaviours and obesity, when measured repeatedly over time, explain almost half of the social inequalities in incidence of type 2 diabetes.

Rama Lakshmi.G., (2011) conducted a case control study of risk factors for type II diabetes mellitus in central Indian population among 92 diabetic patients and 123 controls living in urban areas of Nagpur city, Maharashtra, India. BMI, waist circumference, waist hip ratio, fasting glucose, blood pressure (systolic and diastolic) and skin fold thickness at four points were assessed. For logical interpretation, the data have been subjected to statistical analysis such as risk ratio, odds ratio and chi square. Multivariate regression analysis was carried out to adjust for age and sex. The result shows that the plasma glucose, HDL cholesterol and Waist to hip ratio are significant in between control and diabetes subjects even after adjusting to age and sex. Comparison of diabetic and control showed that the central obesity (WHR) and HDL were most important risk factors for Type II Diabetes in the studied population

Balakrishnan Valliyot., (2011) conducted a case control study related to risk factors of Type II diabetes mellitus among adults in the rural population of north Kerala. Study results showed those above 50 years of age to have five times more chance to get diabetes when compared with those in the 20-30 age group. Gender and religion did not show any statistically significant association with diabetes. Physical activity was observed as a protective factor for the development of DM. Hypertension, especially systolic hypertension, emerged as a strong risk factor for T2DM in this study. Subjects with systolic hypertension had 4.6-fold chance to develop T2DM, making it mandatory to screen all patients with hypertension above 25 years of age for T2DM irrespective of the presence of other risk factors.

Mayura Pathel., (2010) conducted an observational study with newly diagnosed type 2 diabetic subjects attending Dept. of Diabetology of All India Institute of Diabetes and Research and Yash Diabetes Specialties Centre (Swasthya) at Ahmedabad. 622 subjects completed an interviewer-administered comprehensive questionnaire, which included variables such as socio demographic presenting symptoms, risk profile (hypertension, obesity, dyslipidemia and glycemic status), family history of diabetes, physical activity and behavioral profile. Blood pressure, body mass index (BMI),

glycosylated hemoglobin (HbA1C) and fasting lipid profile were measured. The study revealed that obesity, family history of diabetes, dyslipidemia, uncontrolled glycemic status, sedentary lifestyles and hypertension were more prevalent in T2DM subjects. Hence, the overall risk profile was very poor and needs improvement.

Vasconcelos., (2010) conducted a study to identify the risk factors for type 2 diabetes mellitus among private school adolescents (12 to 17 yrs) in Brazil. 794 students from 12 schools were evaluated in month of May, June, August and September of 2007. Sociodemographics, BMI, blood pressure, capillary glycemia, sedentary lifestyle were assessed. Approximately 24% had high BMI, 51% had family history of DM2. In those with larger income, 73.5% had family history of DM2. Most of the risk factors identified are modifiable. Therefore, susceptible to preventive interventions in the school settings

Sonali Sarkar and Ananthanarayanan.,(2010) conducted a population-based cohort study related to the incidence and risk factors of type II diabetes mellitus among adults in rural Pondicherry, India.. Increasing age, obesity, alcohol use and a family history of T2DM independently predicted the development of diabetes. T2DM incidence was 2% per year in, with the rate increasing twice as fast in men. As half of T2DM incidence was attributed to overweight/obesity and alcohol use, health promotion interventions focusing on maintaining an optimal weight and decreasing alcohol consumption may be effective in reducing the rise in T2DM cases.

SUMMARY

This chapter has dealt with the review of literature under various headings. This literature review has provided an understanding about the current study and broadened the investigators outlook necessary for the research study.

CHAPTER-III

RESEARCH METHODOLOGY

Research methodology involves the systematic procedures by which the researcher starts from the initial identification of the problem to its final conclusion. It involves steps, procedure and strategies for gathering and analyzing data in a research investigation.

Denise F. Polit (2011)

This chapter deals with the research methodology adopted for the proposed study and the different steps undertaken after gathering and organizing data for the investigation. It includes research approach, research design, variables, settings, population, sample, sample size and criteria for sample selections. Sampling techniques, development of the tool, reliability, pilot study, data collection procedure, plan for data analysis and ethical clearance.

The present study aimed to identify the risk factors of Type II Diabetes Mellitus among people between the age group of 30 and 60 years in selected areas at, Kanyakumari district.

RESEARCH APPROACH

A research approach tells the researcher what to collect and how to analyze it. It also suggest possible conclusion to be drawn from the data, in view of the nature of the problem under study and to accomplish the objectives of the study.

Densie. F. Polit (2011)

In this study, Quantitative research approach was adopted to assess the predictive e factors of Type II Diabetes Mellitus.

RESEARCH DESIGN

Research design is the researcher's overall plan for answering the researcher question.

Polit (2004)

For the present study, Descriptive research design was chosen to assess the predictive e factors of Type II Diabetes Mellitus.

VARIABLES

Variables are defined as “An attribute that varies, that is, takes on different values.”

Denise F.Polit (2011)

Variables are the qualities, properties, or characteristics of persons, things or situations that change or vary and are manipulated or measured in research.

Dependent variable

Dependent variable is defined as “the variable hypothesized to depend on or be caused by another variable of interest”.

In this study, the dependent variable is Type II Diabetes Mellitus

Independent variable

Independent variable is defined as “The variable that is believed to cause or influence the dependent variable”.

Denise F.Polit (2011)

Independent variables for the present study are the risk factors of Type II Diabetes Mellitus

SETTING

Setting refers to the physical location and condition in which data collection takes place.

Denise F.Polit (2011)

The setting was chosen on the basis of the availability of samples and the cooperation extended by the management. The study was conducted in Annammal hospital Kuzhithurai. It is a 150 bedded multi-specialty hospital with 60 out-patient per day.

POPULATION

A Population is defined as “the entire set of individuals or objects having some common characteristics”.

Denise F.Polit (2011)

In this study, the population comprises of patients who are diabetic between the age group of 30 and 60 years.

Target population

Target population is the group of population that the researcher aim to study and to whom the study findings will be generalized.

Denise F.Polit (2011)

In this study, the target population comprises of available and willing people those having Type II Diabetes Mellitus between the age group of 30 and 60 years.

Accessible population

The accessible population is the list of population that the researcher finds in study.

Denise F.Polit (2011)

The accessible population in this study was patients with known Type II Diabetes Mellitus in Annammal hospital during data collection period.

SAMPLE

Sample is defined as “A subset of a population comprising those selected to participate in the study”.

In this study, sample comprises of 100 patients who satisfies inclusion criteria in selected hospitals.

SAMLE SIZE

Sample size is defined as, “The number of people who participate in the study”.

Denise F.Polit (2011)

The sample size for the study comprises of 100 patients with Type II Diabetes Mellitus.

SAMPLING TECHNIQUE

Sampling technique is defined as “The process of selecting a portion of the population to represent the entire population”.

Denise F.Polit (2011)

The participants of the study were selected by non-probability convenient sampling technique.

SAMPLING CRITERIA

Sampling criteria involves selecting cases that meet some predetermined criterion of importance. The criteria for sample selection are mainly depicted under two headings, which include the inclusion criteria and exclusion criteria.

Inclusion criteria

The study include patients who were

- available at the time of data collection
- having Type II Diabetes Mellitus
- between the age group of 30 and 60 years

Exclusion criteria

The study excluded the patients who were

- not willing to participate
- complicated with Diabetes Mellitus

SELECTION AND DEVELOPMENT OF STUDY TOOL

Tool development is a complex and time consuming process. It consist of defining the construct to be measured, formulating the items, assessing the items for content validity, developing instructions for respondents, pre-testing, estimating the reliability and conducting the pilot-study.

Denise F.Polit (2011)

The tool was prepared on the basis of objectives of the study. The following methods were used for the development of the tool by the investigator.

- Review of literature from books, journals, other publication and websites.
- Discussion with subject experts like guides, Diabetician.
- Review of the standardized tool.

DESCRIPTION OF THE TOOL

TOOL I

- Tool to assess the demographic and clinical variables of the sample

TOOL II

- Planned structured questionnaire comprising three sections to identify the predictive factors of diabetes mellitus.

SECTION A - DIETARY FACTORS

It consists of 10 questions related to the dietary pattern, food consumption, type of food, cooking method, frequency of diet and favorite food items.

SECTION B - HEALTH FACTORS

This section has 10 questions related to physiological factors and health information such as, family history, BMI status, sleep pattern, general health and previous diseases.

SECTION C - LIFESTYLE FACTORS

This part consists of 10 questions related to the living condition, and habits of the patient such as, consumption of alcohol, daily exercise, and stress, type of work, smoking exposure, residing area, sunlight exposure and mode of transportation.

SCORING PROCEDURES

The Planned structured questionnaire to identify the predictive factors of diabetes mellitus consists of, dietary factors, health factors and lifestyle factors and is scored from 1 to 30. Each factor carries 30 marks and named as low risk, moderate risk and low risk. The maximum and minimum score were 30 and 0 respectively for each factor. It was interpreted as

Score Interpretation	
1 -10	Low risk
11-20	Moderate risk
21-30	High risk

VALIDITY OF THE TOOL

VALIDITY

Validity is a degree to which an instrument measures what is intended to measure.

Denise F. Polit (2011)

To ensure the content validity the prepared data collection tool along with the problem statement, objectives, operational definitions, hypotheses, sampling technique and the criteria checklist designed for validation were submitted to ten experts in the field of Medical Surgical Nursing, one Diabetician and one statistician. The experts were

requested to judge the items for relevance, appropriateness and degree of agreement for the study. All the experts gave their consensus and the tool was finalized.

RELIABILITY

Reliability is the degree of consistency of dependability with which an instrument measures the attribute it is designed to measure.

Denise F. Polit (2011)

The Karl Pearson co-efficient formula was used to assess the reliability. In this study, the reliability of the tool was 0.9. Thus the tool was found as reliable.

PILOT STUDY

Pilot study is defined as, “a small- scale version or trial run, done in preparation of a major study.”

Denise F. Polit (2011)

Pilot study was conducted in Annammal hospital, Kuzhithurai. Initial permission was sought from the institution and formal permission was sought from the medical officers for conducting the study. The pilot study was conducted in the month of November for a period of one week. Consent was obtained from the participants. 10 persons with known Type II Diabetes Mellitus were selected. Results of the pilot study, gave the evidence that the tools were reliable. Finding of pilot study also revealed that it was feasible and practicable to conduct the study at selected setting and criteria measures was found to be effective.

DATA COLLECTION PROCEDURE

Data collection is the gathering of information needed to address the problem. Formal permission was obtained from the respective authorities of Annammal hospital at Kanyakumari district. At first a rapport was established with the patients and the purpose of the study was explained to them. Person with known Type II Diabetes Mellitus was selected as the participants for the study. Verbal and written consent was taken from the patients and provided assurance, that confidentiality of the collected data would be maintained. The samples of 100 patients were selected by using non-probability convenient sampling technique. Demographic and clinical variables were obtained. The structured questionnaire was given to the participants to assess the predictive factors of Type II Diabetes Mellitus. The researcher administered the structured questionnaire

individually to collect the data. Towards the end, the researcher terminated the data collection procedure by thanking the participants for their co-operation.

S. No	Date	No of samples
1	1-12-15	3
2	2-12-15	5
3	3-12-15	2
4	4-12-15	6
5	5-12-15	3
6	6-12-15	3
7	7-12-15	7
8	8-12-15	2
9	9-12-15	3
10	10-12-15	8
11	11-12-15	4
12	12-12-15	4
13	13-12-15	5
14	14-12-15	7
15	15-12-15	3
16	16-12-15	5
17	17-12-15	3
18	18-12-15	2
19	19-12-15	2
20	20-12-15	3
21	21-12-15	2
22	22-12-15	2
23	23-12-15	2
24	24-12-15	1
25	25-12-15	2
26	26-12-15	3

27	27-12-15	2
28	28-12-15	2
29	29-12-15	2
30	30-12-15	2

PLAN FOR DATA ANALYSIS

The data analysis is the systemic organization and synthesis of research data and testing of research hypothesis by using the obtained data.

Polit&Beck (2007)

Data collected was analyzed using both descriptive and inferential statistics such as mean, standard deviation, chi square.

Descriptive statistics

Frequency and percentage distribution was used to assess the socio demographic variables of Type II Diabetes Mellitus patients between 30 and 60 years of age.

- Frequency and percentage distribution was used to assess the predictive factors of Type II Diabetes Mellitus patients between 30 and 60 years of age.
- Mean and standard deviation was used to assess the predictive factors of Type II Diabetes Mellitus among patient between 30 and 60 years of age.

Inferential statistics

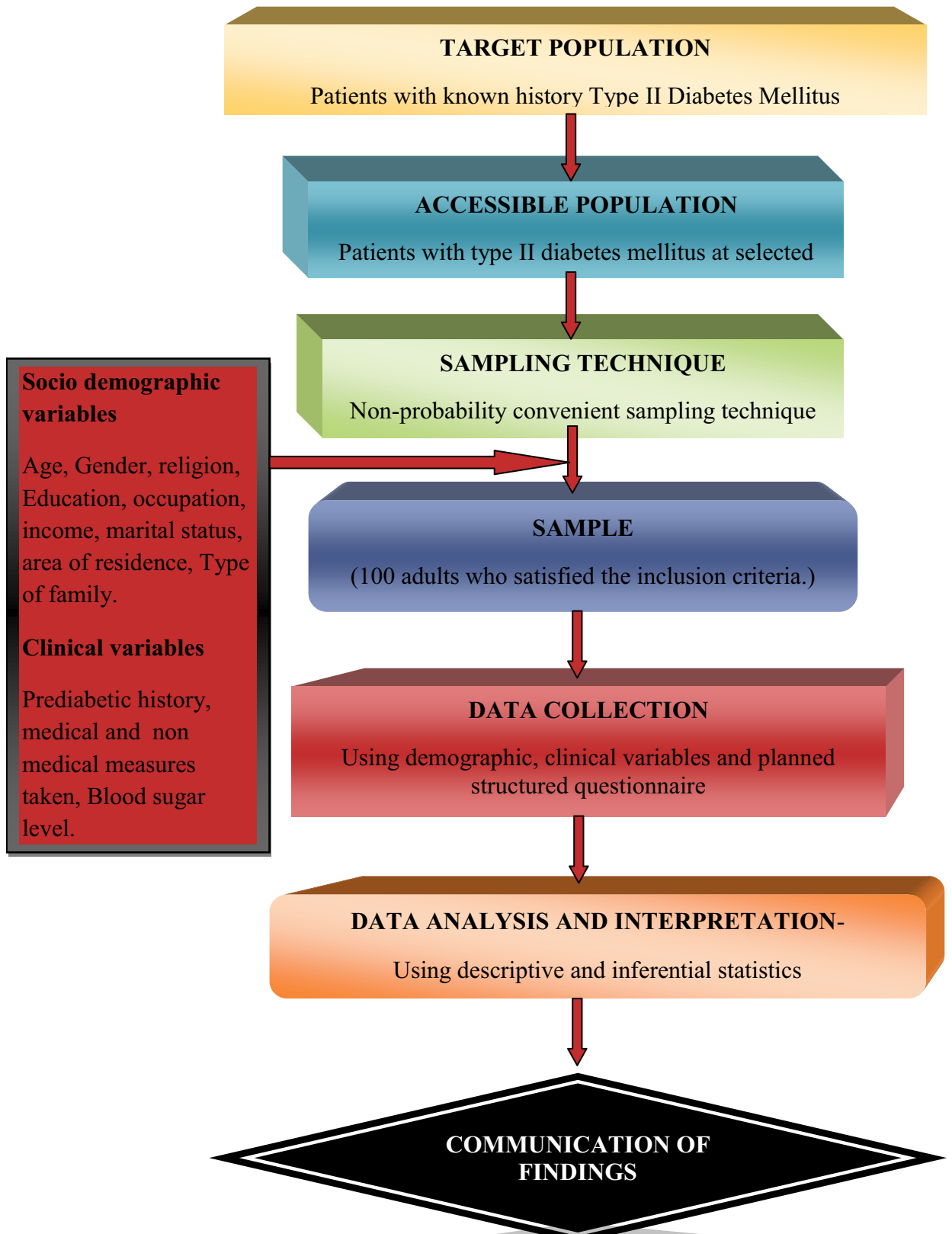
- Chi square test was used to find out the association between the predictive factors of Type II Diabetes Mellitus patients between 30 and 60 years of age with the selected socio demographic variables.

ETHICAL CONSIDERATION

- The pilot study and main study were conducted after the approval of the research committee of Annammal college of Nursing, Kuzhithurai.
- Permission was obtained from the ethical committee of Annammal hospital before conducting the study.
- Written consent was obtained from each people before starting the data collection.
- Assurance was given to each participant regarding the confidentiality of the data collected.

SUMMARY

This chapter has dealt with the selection of research approach, research design, variables, setting of the study, population, selection criteria, development of tool, validity, reliability, pilot study, data collection, plan for data analysis and ethical considerations.



CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

Data analysis is defined as the method of organizing data in such a way that the research questions can be answered. Interpretation is the process of the results and of examining the simplification of the findings with in a broader context.

(Polit and Beck, 2004)

Statistics is a field of study concerned with techniques or methods of collection of data, classification, summarizing, interpretation, drawing inferences, testing of hypotheses, making recommendation, etc.

(Mahajan, 2004)

This chapter deals with the analysis and interpretation. Analysis and interpretation of data of this study was done using descriptive and inferential statistics.

OBJECTIVES OF THE STUDY

- To assess the predictive factors of Type II Diabetes Mellitus among patients with known Diabetes Mellitus.
- To find out the association between predictive factors of Type II Diabetes Mellitus and the selected socio demographic and clinical variables.

ORGANIZATION OF THE FINDINGS

The data collected were edited, tabulated, analyzed, interpreted and findings obtained were presented in the form of tables and diagrams represented under the following sections.

SECTION- A

- Data pertaining to frequency and percentage distribution of demographic variable among patients with Type II Diabetes Mellitus.
- Data pertaining to frequency and percentage distribution of clinical variable among patients with Type II Diabetes Mellitus.

SECTION- B

- Data pertaining to frequency and percentage distribution of dietary factors influencing Type II Diabetes Mellitus.

- Data pertaining to frequency and percentage distribution of health factors influencing Type II Diabetes Mellitus.
- Data pertaining to frequency and percentage distribution of lifestyle factors influencing Type II Diabetes Mellitus
- Data pertaining to comparison of levels of dietary factors, health factors and lifestyle factors influencing Type II Diabetes Mellitus.

SECTION- C

- Data pertaining to association between dietary factors and selected socio demographic variables among patients with Type II Diabetes Mellitus.
- Data pertaining to association between health factors and selected socio demographic variables among patients with Type II Diabetes Mellitus
- Data pertaining to association between lifestyle factors and selected socio demographic variables among patients with Type II Diabetes Mellitus

SECTION- D

- Data pertaining to association between dietary factors and clinical variables among patients with Type II Diabetes Mellitus.
- Data pertaining to association between health factors and clinical variables among patients with Type II Diabetes Mellitus
- Data pertaining to association between lifestyle factors and clinical variables among patients with Type II Diabetes Mellitus

SECTION- A

Table I: Data pertaining to frequency and percentage distribution of demographic variable among patients with Type II Diabetes Mellitus.

n= 100

S.No	Socio demographic variables	f	%
1.	Age		
	a) 30-40years	45	45%
	b) 41-50years	20	20%
	c) 51-60 years	35	35%
2.	Gender		
	a) Male	80	80%
	b) Female	20	20%
3.	Religion		
	a) Muslim	35	35%
	b) Christian	40	40%
	c) Hindu	25	25%
	d) Other	0	0%
4.	Type of family		
	a) Nuclear	80	80%
	b) Joint	20	20%
5.	Residing place		
	a) Urban	70	70%
	b) Rural	30	30%
6.	Education		
	a) Illiterate	00	00%
	b) Primary	08	08%
	c) Secondary	20	20%
	d) High school	20	20%
	e) Higher secondary	32	32%
	f) College	20	20%
7.	Occupation		
	a) Daily wage	40	40%
	b) Regular monthly income	50	50%
	c) Unemployed	10	10%
8.	Family income per month in rupees		
	a) Below 2000	08	08%
	b) 2000-5000	20	20%
	c) 5001-8000	42	42%
	d) Above 8000	30	30%

Table 1 represents the frequency and percentage distribution of socio demographic variables of patients with Type II Diabetes Mellitus such as, Age, Sex, and Religion, Type of family, Area of residence, Monthly income, Educational and Occupational status.

With regard to age, majority of 45(45%) were found between the age group of 30-40years, 35(35%) were in the age group of 51-60years and 20(20%) were in the age group of 41-50 years.

With regard to gender, majority of 80 (80%) were males and least of 20 (20%) were females. With regard to the religion, majority of 40(40%) were Christians, 35(35%) were Muslims and least of 25(25%) were Hindus.

With regard to type of family, majority of 80(80%) were from nuclear family and 20(20%) were from joint family. With regard to area of residence, majority of 70(70%) belongs to urban background and remaining 30(30%) were from rural area.

With regard to educational level, majority of 32(32%) obtained higher secondary school education, 20(20%) obtained collegiate education,20(20%)obtained secondary school education,20(20%) completed high school education and least of 8(8%) completed primary school education.

With regard to occupational status, majority of 50(50%) were getting regular monthly income, 40(40%) depends on daily wages, 10(10%) were unemployed. With regard to monthly income, majority of 42(42%) were getting monthly income of Rs.5001-8000/-, 30(30%) were getting more than 8000/- rupees per month,20 (20%) were getting monthly salary of Rs2000-5000/-month and least of 8 (8%) were getting less than Rs 2000/-month.

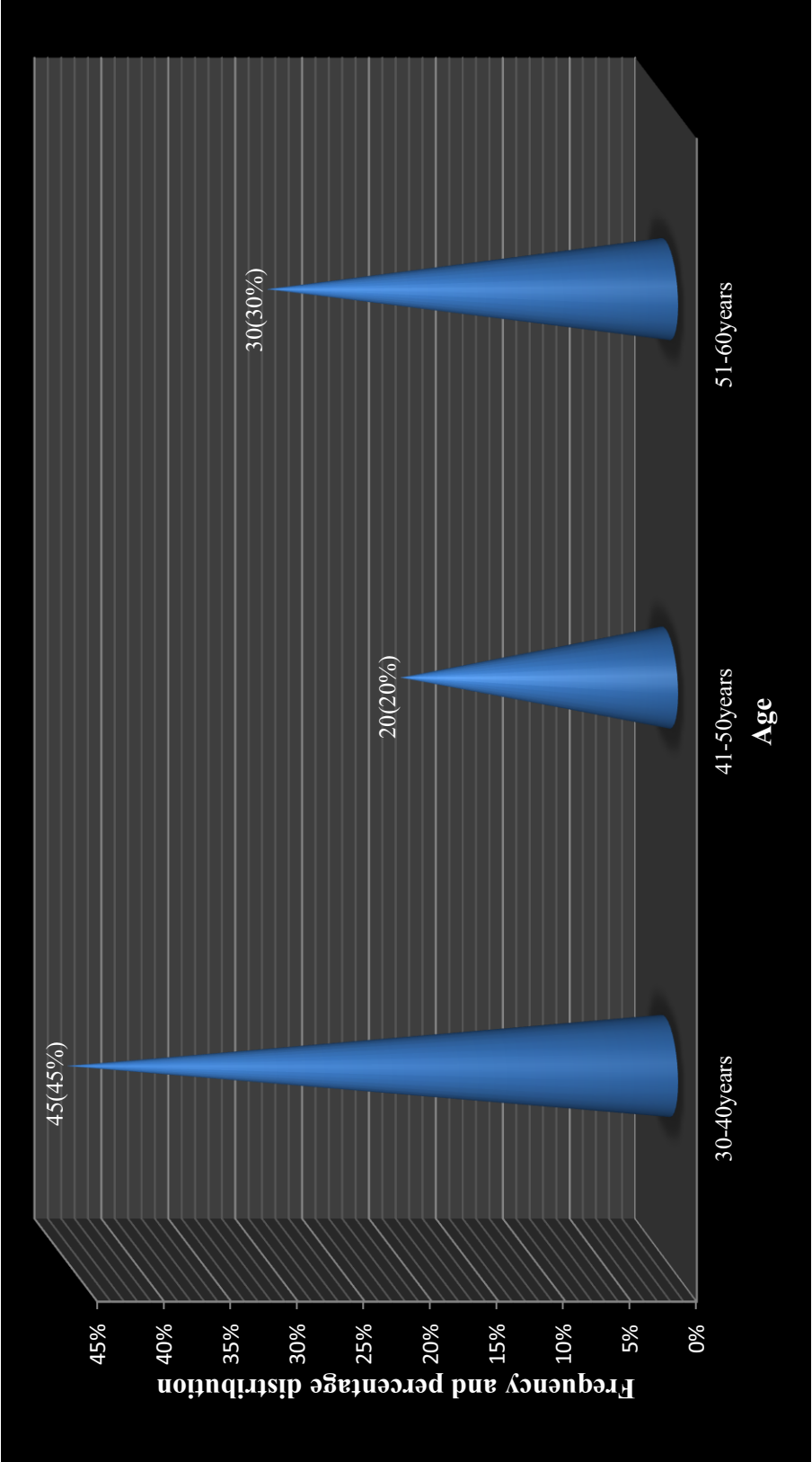


Fig 3: Frequency and percentage distribution of patients with type II diabetes mellitus with regard to age

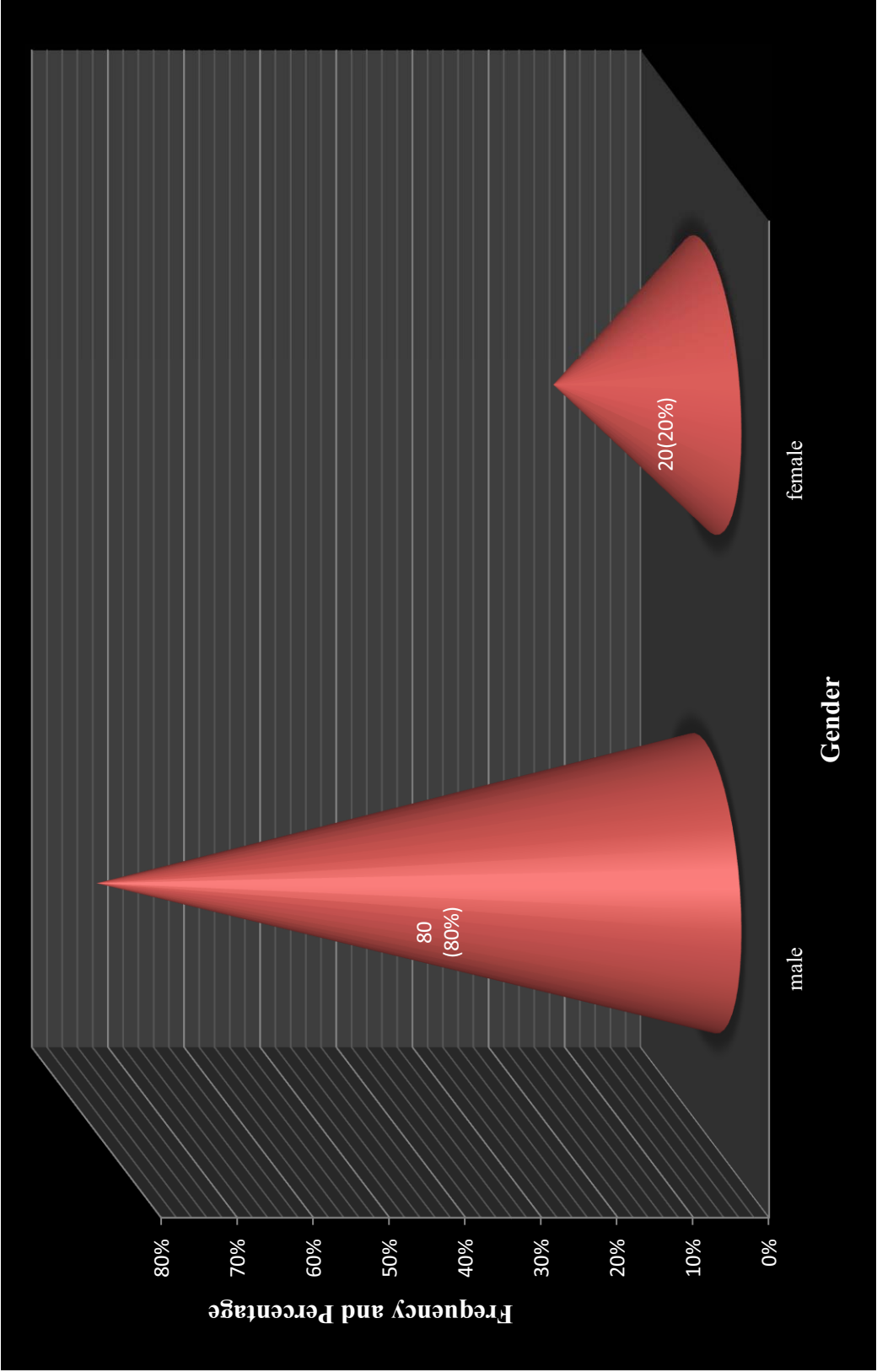


Fig 4: Frequency and percentage distribution of patients with type II diabetes mellitus with regard to gender

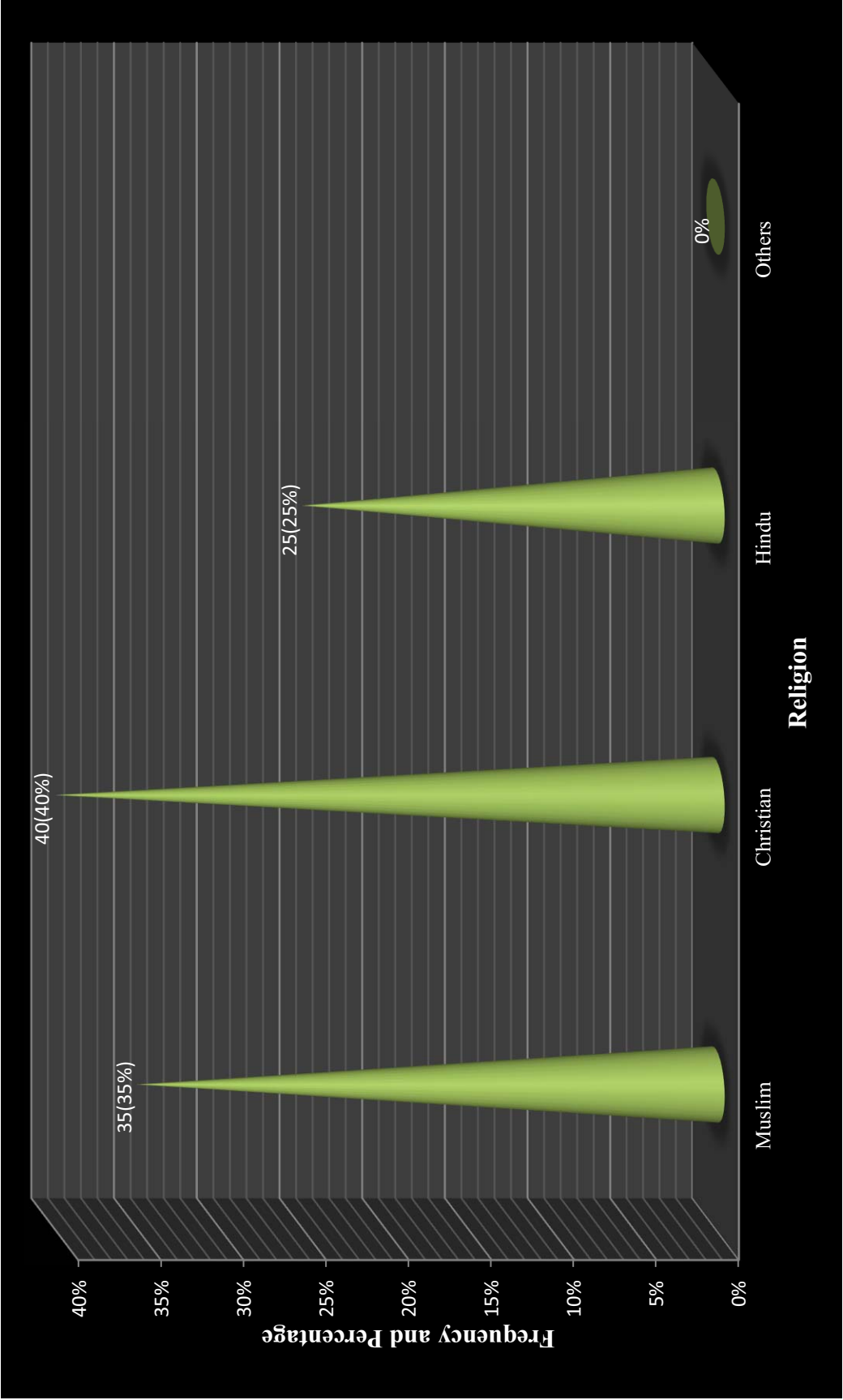


Fig 5: Frequency and percentage distribution of patients with type II diabetes mellitus with regards to religion

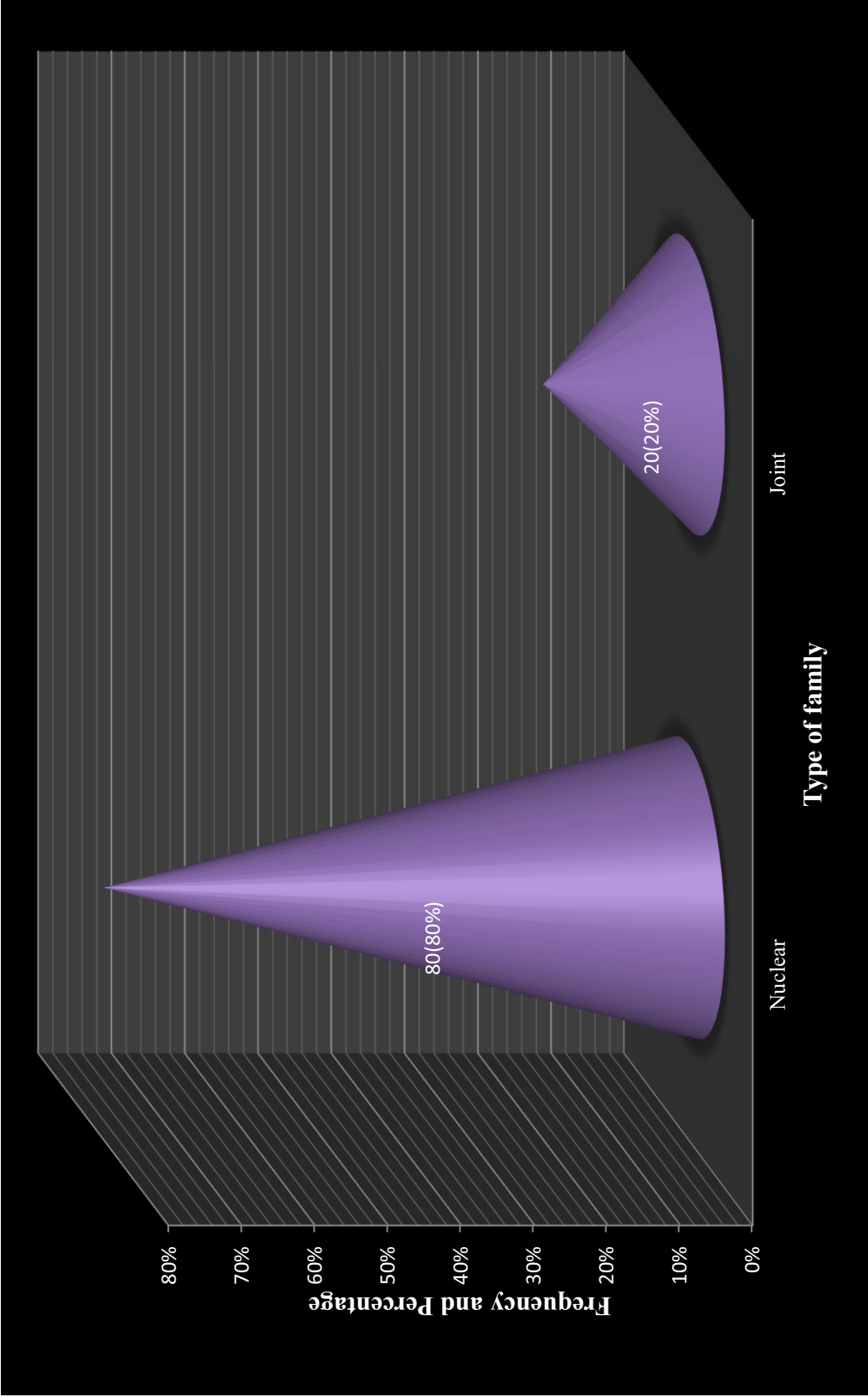


Fig 6: Frequency and percentage distribution of patients with type II diabetes mellitus with regards to type of family

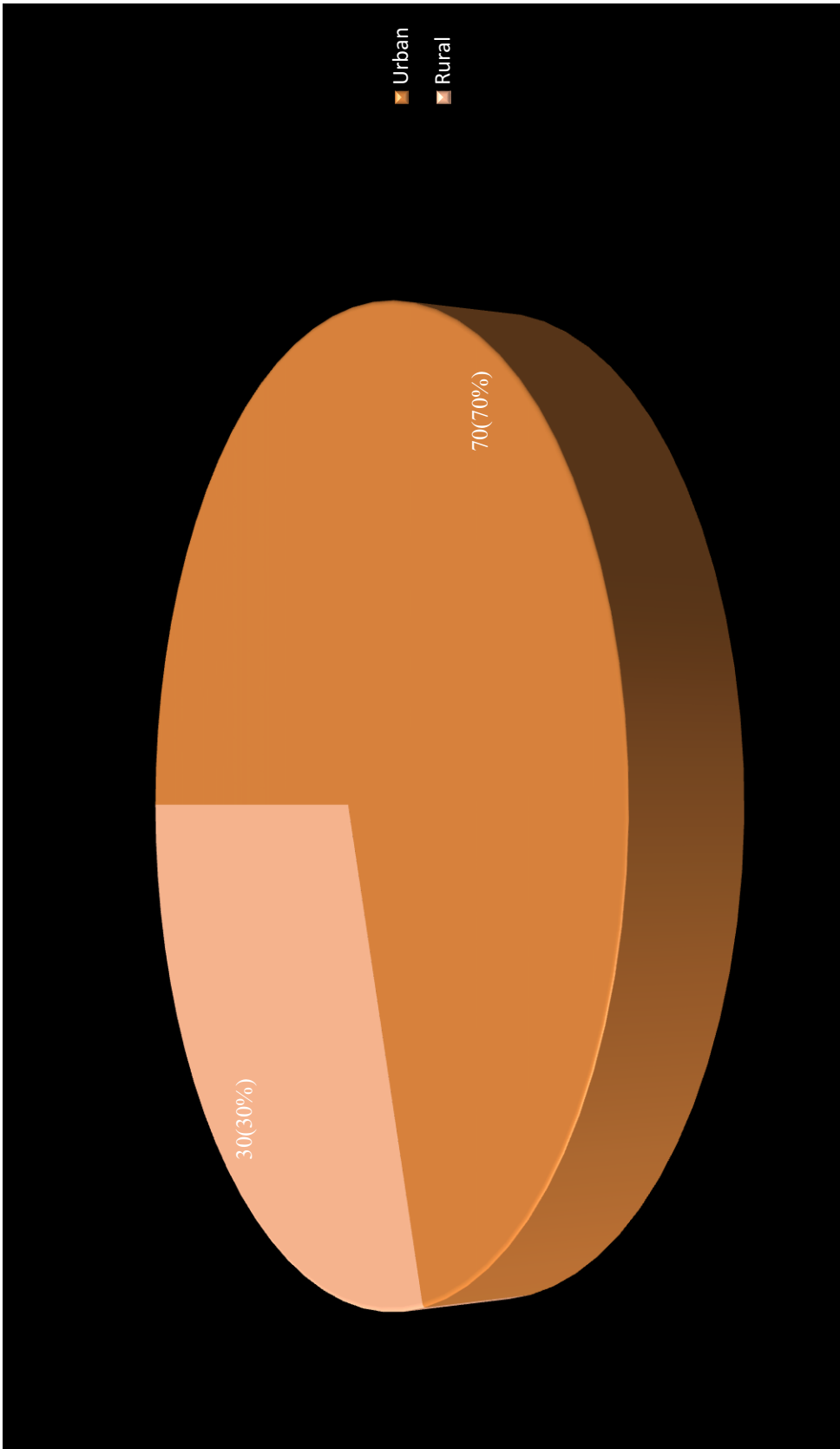


Fig 7: Frequency and percentage distribution of patients with type II diabetes mellitus with regard to residing area

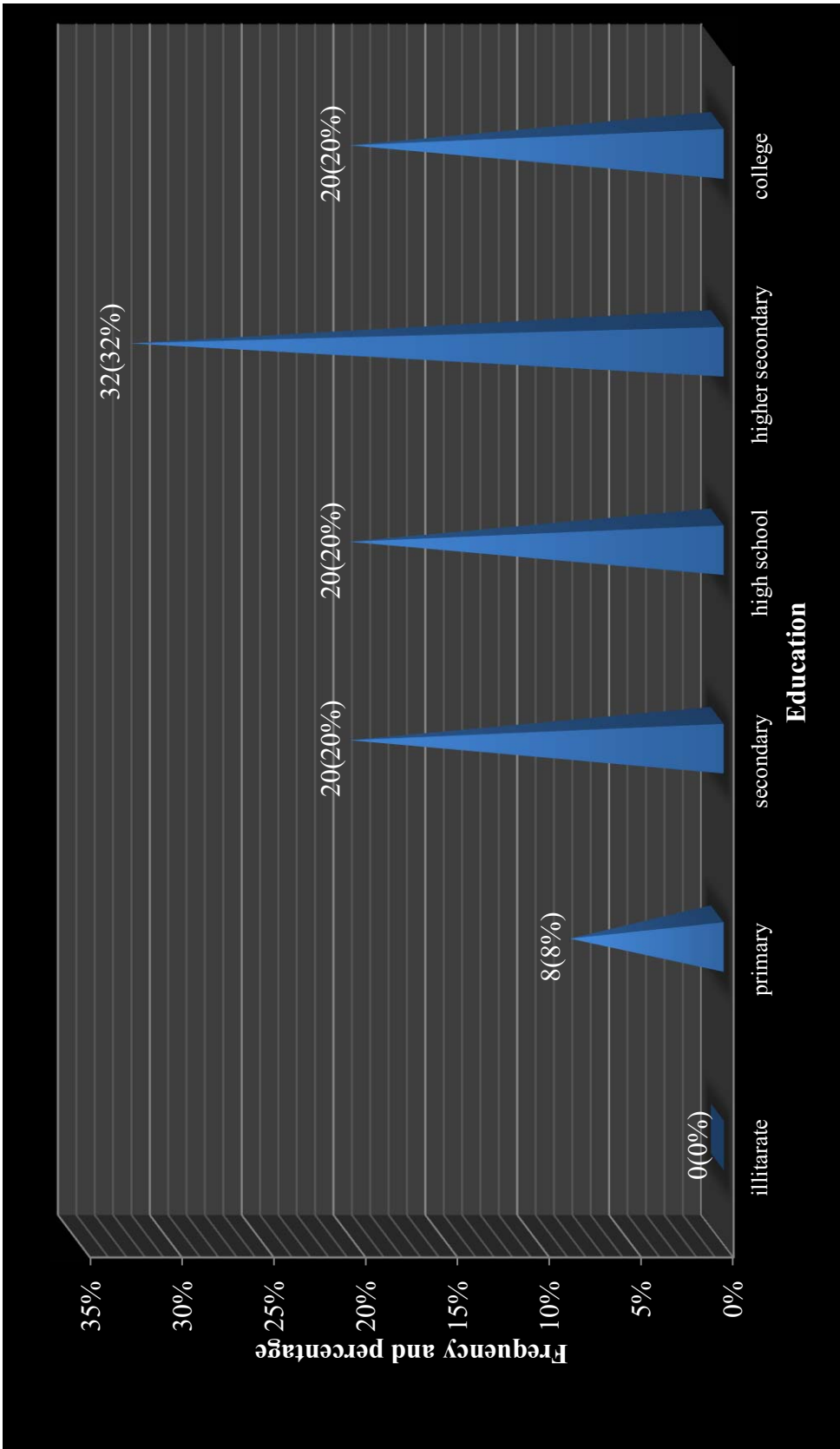


Fig 8: Frequency and percentage distribution of patients with type II diabetes mellitus with regards to education

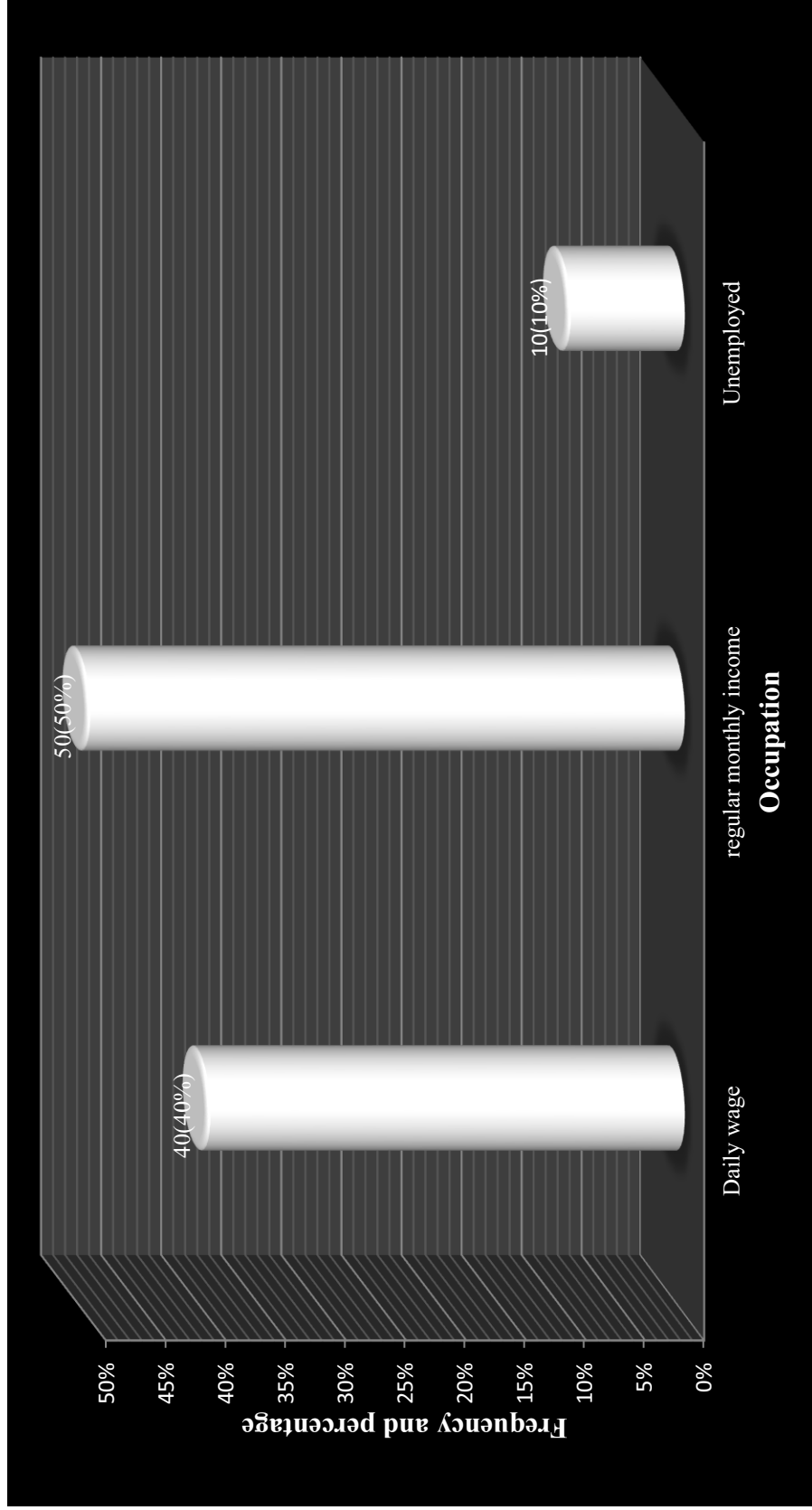


Fig 9: Frequency and percentage distribution of patients with type II diabetes mellitus with regards to occupation

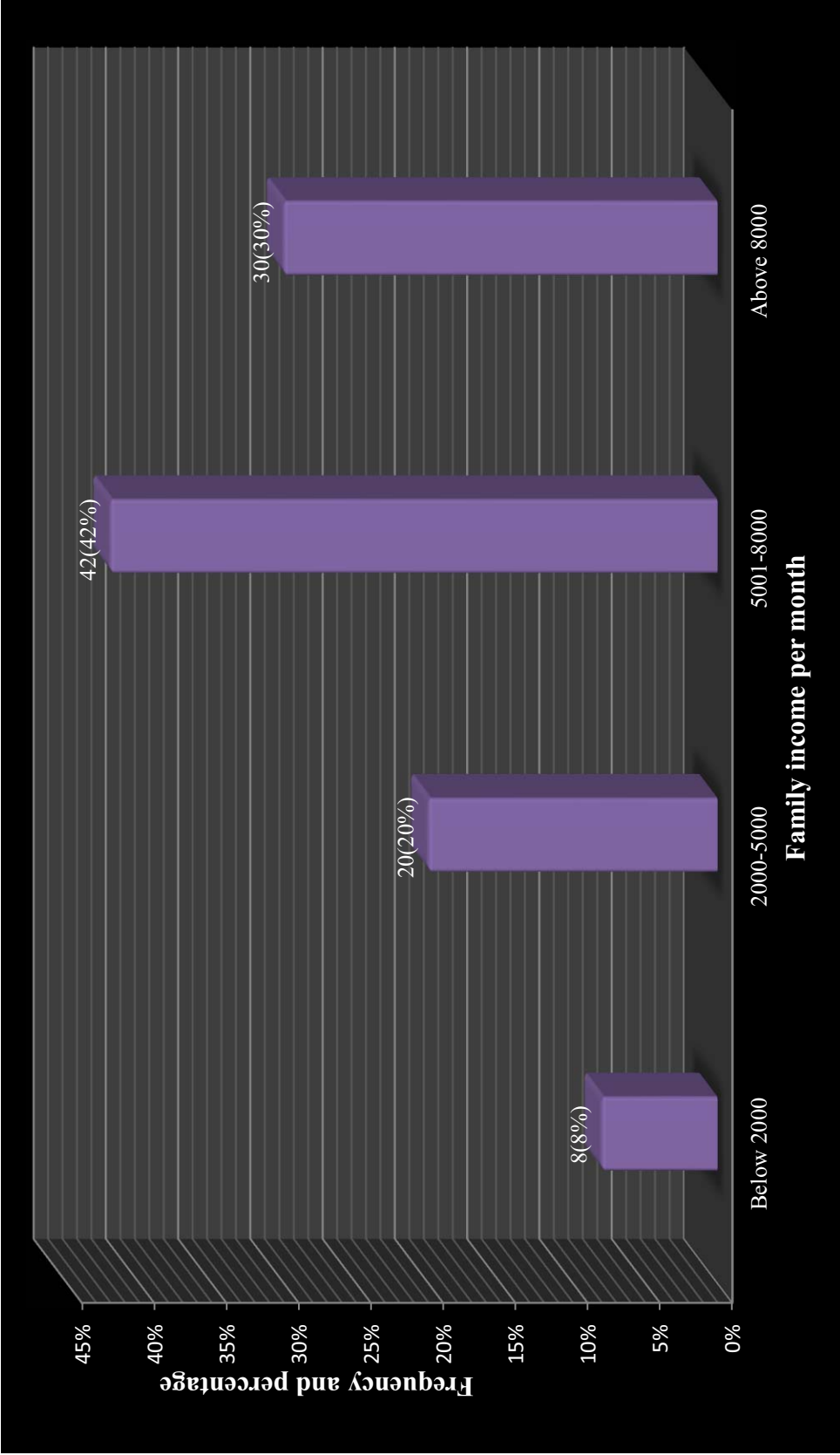


Fig 10: Frequency and percentage distribution of patients with type II diabetes mellitus with regards to family income

Table 2: Data pertaining to frequency and percentage distribution of clinical variable among patients with Type II Diabetes Mellitus

n= 100

S. No	Clinical variables	f	%
1.	Diabetic history		
	a) Less than five years	50	50%
	b) Between five and ten years	30	30%
	c) More than 10 years	20	20%
2.	Present medical history		
	a) Oral medication	60	60%
	b) Insulin injection	20	20%
	c) No measures	20	20%
3.	Present non-medical measures		
	a) Yoga	14	14%
	b) Ayurveda	11	11%
	c) Exercise	25	25%
	d) Diet control	50	50%
4.	Latest Blood sugar level		
	a) Below 120 mg/dl	15	15%
	b) Between 120 and 200 mg/dl	47	47%
	c) Between 200 and 300 mg/dl	30	30%
	d) Above 300 mg/dl	8	8%

Table 2 represents the frequency and percentage distribution of clinical variables of patients with Type II Diabetes Mellitus including diabetic history, under medical and non-medical measures and latest blood sugar level.

With regard to diabetic history, majority of 50(50%) were diabetic for less than 5 years, 30(30%) were diagnosed within the period of 5 and 10 years, 20(20%) had diabetes for more than 10 years.

With regard to present medical history, majority of 60 (60%) were taking oral medication, least of 20 (20%) were taking injection insulin and 20(20%) were not under any medical measures.

With regard to taking non-medical measures, majority of 50(50%) are under diet control, 25(25%) are performing regular exercise, 14(14%) are performing yoga and least of 11(11%) are under Ayurveda treatment.

With regard to latest blood glucose level, majority of 47(47%) has blood sugar between 120 and 200 mg/dl, 30(30%) has between 200 and 300 mg/dl, 15(15%) has below 120 mg/dl and least of 8(8%) has above 300 mg/dl.

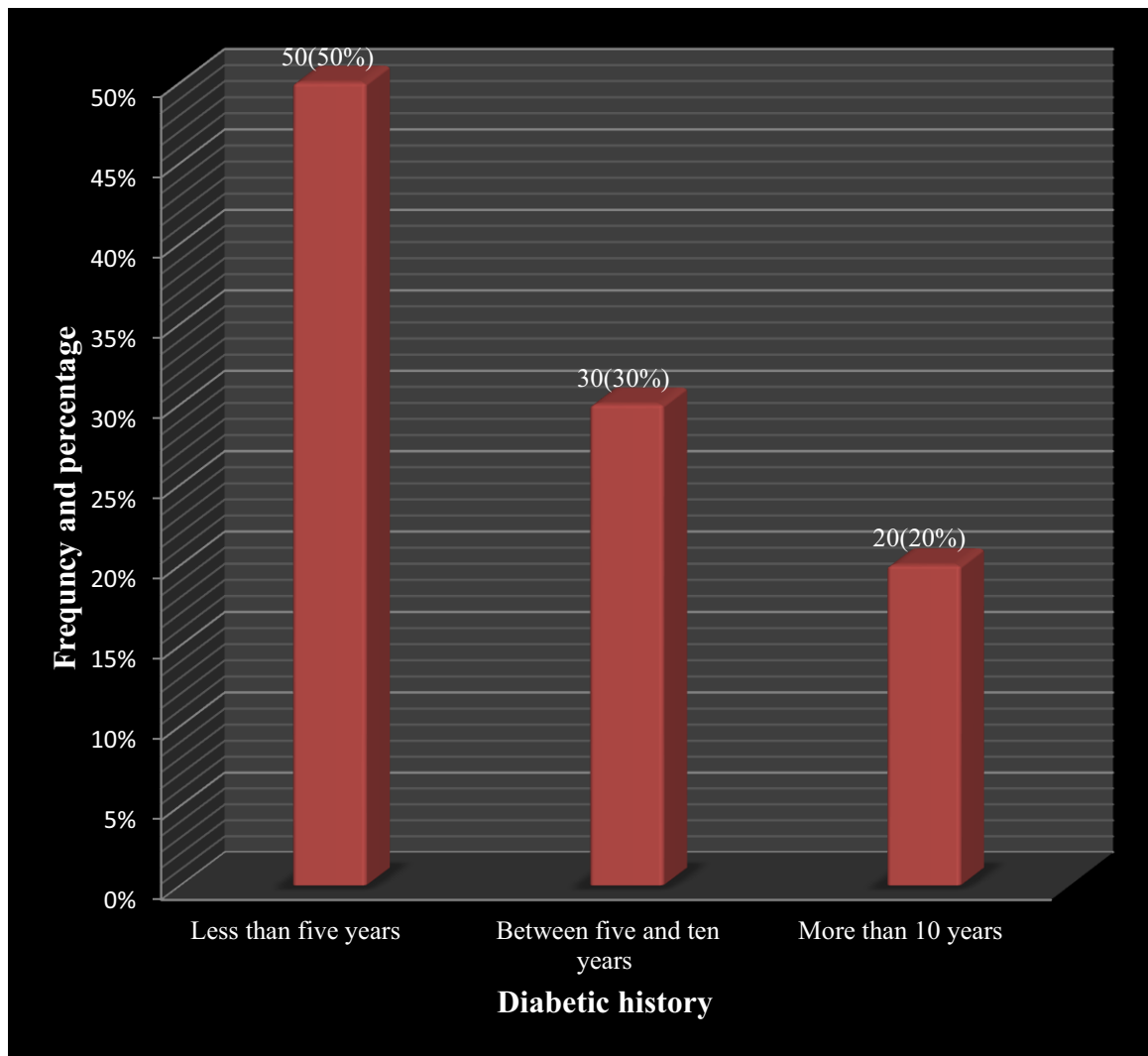


Fig 11: Frequency and percentage distribution of patients with type II diabetes mellitus with regard to diabetic history

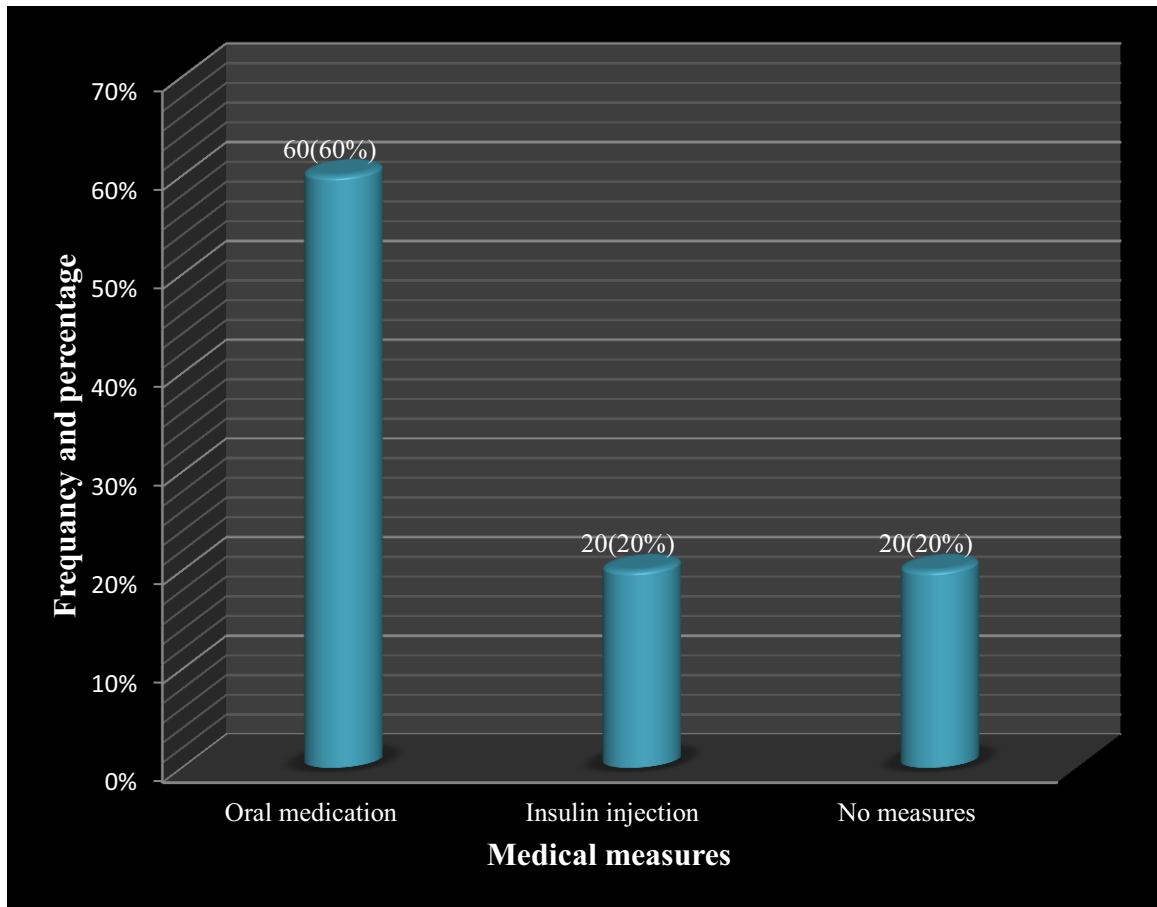


Fig 12: Frequency and percentage distribution of patients with type II diabetes mellitus with regard to medical measures

Section- B

Table 3: Data pertaining to frequency and percentage distribution of dietary factors influencing Type II Diabetes Mellitus

n=100

S.No	Dietary factors	Frequency	Percentage
1	Low risk	0	0%
2	Moderate risk	45	45%
3	High risk	55	55%

Table 3 depicts the frequency and percentage distribution of dietary factors that influences Type II Diabetes Mellitus. It was found that overall, none of the patients fall under low risk group. Majority of 55(55%) Diabetes Mellitus patients fall under high risk dietary factors and 45(45%) patients had moderate risk of dietary factors.

Table 4: Data pertaining to frequency and percentage distribution of health factors influencing Type II Diabetes Mellitus.

n=100

S.No	Health factors	Frequency	Percentage
1	Low risk	0	0%
2	Moderate risk	30	30%
3	High risk	70	70%

Table 4 depicts the frequency and percentage distribution of health factors that influences Type II Diabetes Mellitus. It was found that overall, none of the patient fall under low risk group. Majority of 70(70%) of Type II diabetes mellitus patients had high risk health factors and 30(30%) patient had moderate risk health factors.

Table 5: Data pertaining to frequency and percentage distribution of lifestyle factors influencing Type II Diabetes Mellitus

n=100

S.NO	Lifestyle factors	Frequency	Percentage
1	Low risk	0	0%
2	Moderate risk	5	5%
3	High risk	95	95%

Table 5 depicts the frequency and percentage distribution of lifestyle factors that influences Type II Diabetes Mellitus. It was found that overall none of the patients fall under low risk group. Majority of 95(95%) Type II Diabetes Mellitus patients had high risk lifestyle factors and 5(5%) patient had moderate lifestyle factors

SECTION- C

TESTING OF HYPOTHESIS

H1: There will be a significant association between predictive factors of Type II Diabetes Mellitus among patients with known diabetes with their selected socio demographic and clinical variables

Table 6: Data pertaining to association between dietary factors and selected socio demographic variables among patients with Type II Diabetes Mellitus

n = 100

S: no	Selected socio demographic variables	Dietary factors				
		low risk f	Moderate risk f	High risk f	χ^2	P value
1.	Age a) 30-40years b) 41-50years c) 51-60 years	0 0 0	28 6 11	17 14 24	9.816	df=2 .0074 ***
2.	Gender a) Male b) Female	0 0	36 11	44 9	.642	df=1 0.423
3.	Religion a) Muslim b) Christian c) Hindu d) Other	0 0 0 0	11 12 22 0	24 28 3 0	24.918	df=2 0.00000 38 ***
4.	Type of family a) Nuclear b) Joint	0 0	38 12	42 8	1	df=1 0.3174
5.	Residing place a) Urban b) Rural	0 0	35 10	35 20	2.357	df=1 0.123

6.	Education.					
	a) Illiterate	0	0	0	45.657	df=4 0 ***
	b) Primary	0	0	8		
	c) Secondary	0	2	18		
	d) High school	0	4	16		
	e) Higher secondary	0	28	4		
	f) College	0	11	9		
7.	Occupation					
	a) Daily wage	0	24	16	6.182	df=2 0.045 *
	b) Regular monthly income	0	18	32		
	c) Unemployed	0	3	7		
8.	Family income per month in rupees.					
	a) Below 2000	0	5	3	9.913	df=3 .01932 **
	b) 2000-5000	0	3	17		
	c) 5001-8000	0	23	19		
	d) Above 8000	0	14	16		

*P< 0.05, **P< 0.01, ***P< 0.001 (2), ***P 0

Table 6 depicts the association between dietary factors and socio demographic variables. There was association for age, religion, educational level, occupation and family income, whereas no association was found between gender, type of family and residing place and socio demographic variables. Hence the research hypothesis **H1** was partially accepted.

Table 7: Data pertaining to association between health factors and selected socio demographic variables among patients with Type II Diabetes Mellitus

n = 100

S: no	Selected socio demographic variables	Health factors				
		low risk f	Moderate risk f	High risk f	χ^2	P value
1.	Age					
	a) 30-40years	0	22	23	7.12	df=2 0.028 **
	b) 41-50years	0	4	16		
	c) 51-60 years	0	9	26		
2.	Gender					
	a) Male	0	26	54	0.046	df=1 0.8302
	b) Female	0	6	14		
3.	Religion					
	a) Muslim	0	11	24	0.756	df=2 0.6852
	b) Christian	0	12	28		
	c) Hindu	0	10	15		
	d) Other	0	0	0		
4.	Type of family					
	a) Nuclear	0	30	50	0.391	df=1 0.5318
	b) Joint	0	6	14		
5.	Residing place					
	a) Urban	0	5	65	58.05	df=1 0 ***
	b) Rural	0	25	5		
6.	Education.					
	a) Illiterate	0	0	0	0.63	df=4 0.9597
	b) Primary	0	2	6		
	c) Secondary	0	4	16		
	d) High school	0	5	15		
	e) Higher secondary	0	9	23		
	f) College	0	6	14		
7.	Occupation					
	a) Daily wage	0	12	28	0.368	df=2 0.8319
	b) Regular monthly income	0	16	34		
	c) Unemployed	0	4	6		

8.	Family income per month in rupees.					
	a) Below 2000	0	8	0	66.11 3	df=3 0 ***
	b) 2000-5000	0	16	4		
	c) 5001-8000	0	2	40		
	d) Above 8000	0	4	36		

*P< 0.05, **P< 0.01, ***P 0

Table7 depicts that the association between health factors and socio demographic variables. There was association for age, residing place and family monthly income whereas, there was no association between gender, religion, type of family, education level and occupational status with socio demographic variables. Hence the research hypothesis **H1** was partially accepted.

Table 8: Data pertaining to association between lifestyle factors and selected socio demographic variables among patients with Type II Diabetes Mellitus

n= 100

S: no	Selected socio demographic variables	Lifestyle factors				χ^2	P value
		High risk f	Moderate risk f	High risk f			
1.	Age						
	a) 30-40years	0	2	43	0.067	df=2 0.9670	
	b) 41-50years	0	1	19			
	c) 51-60 years	0	2	33			
2.	Gender						
	a) Male	0	3	77	1.316	df=1 0.2513	
	b) Female	0	2	18			
3.	Religion						
	a) Muslim	0	0	35	15.789	df=2 0.0003 ***	
	b) Christian	0	0	40			
	c) Hindu	0	5	20			
	d) Other	0	0	0			
4.	Type of family						
	a) Nuclear	0	5	75	1.316	df=1 0.2513	
	b) Joint	0	0	20			

5.	Residing place					
	a) Urban	0	0	70	12.281	df=1 0.0004 ***
b) Rural	0	5	25			
6.	Education.				0.526	df=4 0.9709
	a) Illiterate	0	0	0		
	b) Primary	0	0	8		
	c) Secondary	0	1	19		
	d) High school	0	1	19		
	e) Higher secondary	0	2	30		
f) College	0	1	19			
7.	Occupation				5.263	df=2 0.0719
	a) Daily wage	0	0	40		
	b) Regular monthly income	0	5	45		
	c) Unemployed	0	0	10		
8.	Family income per month in rupees.				0.602	df=3 0.8959
	a) Below 2000	0	0	8		
	b) 2000-5000	0	1	19		
	c) 5001-8000	0	2	40		
	d) Above 8000	0	2	28		

*P < 0.05, **P < 0.01, ***P < 0.001

Table 8 depicts the association between lifestyle factors and socio demographic variables. There was association for religion and residing area and no association between age, gender, type of family, educational level, occupational status and monthly income with socio demographic variables, whereas. Hence the research hypothesis **H1** was partially accepted.

Section- D

Table 9: Data pertaining to association between dietary factors and clinical variables among patients with Type II Diabetes Mellitus.

n = 100

S: no	Clinical variables	dietary factors				
		Low risk f	Moderate risk f	High risk f	χ^2	P value
1.	Diabetic history					
	a) Less than five years	0	22	28	5.98	df=2 0.050 *
	b) Between five and ten years	0	6	12		
	c) More than 10 years	0	5	15		
2.	Under Medical measures.					
	a) Oral medication	0	34	26	9.158	df=2 0.010 **
	b) Insulin injection	0	4	16		
	c) No measures	0	7	13		
3.	Under non medical measures.				6.832	
	a) Yoga	0	10	4	6.832	df=3 0.077
	b) Ayurveda	0	3	8		
	c) Exercise	0	13	12		
	d) Diet control	0	19	31		
4	Latest blood sugar level					
	a) Below 120 mg/dl	0	7	8	18.45 9	df=3 .00035 ***
	b) Between 120 and 200 mg/dl	0	29	18		
	c) Between 200 and 300 mg/dl	0	4	26		
	d) Above 300 mg/dl	0	5	3		

***P< 0.05, **P< 0.01, ***P< 0.001**

Table 9 depicts the association between dietary factors and clinical variables. There was association between patients under nonMedical measures with clinical variables, whereas no association was there for Diabetic history, Under Medical measures and Latest blood sugar level. Hence the research hypothesis **H1** was partially accepted.

Table 10: Data pertaining to association between health factors and clinical variables among patients with Type II Diabetes Mellitus

n = 100

S: no	Clinical variables	Health factors				
		High risk f	Moderate risk f	High risk f	χ^2	P value
1.	Diabetic history					
	a) Less than five years	0	24	26	17.714	df=2 .0001 ***
	b) Between five and ten years	0	6	24		
	c) More than 10 years	0	0	20		
2.	Under Medical measures.					
	a) Oral medication	0	20	40	.794	df=2 0.672
	b) Insulin injection	0	5	15		
	c) No measures	0	5	15		
3.	Under non medical measures.					
	a) Yoga	0	2	12	3.761	df=3 0.288
	b) Ayurveda	0	5	6		
	c) Exercise	0	10	15		
	d) Diet control	0	15	35		
4	Latest blood sugar level					
	a) Below 120 mg/dl	0	4	11	11.064	df=3 .0114 **
	b) Between 120 and 200 mg/dl	0	9	38		
	c) Between 200 and 300 mg/dl	0	11	19		
	d) Above 300 mg/dl	0	6	2		

***P < 0.05, **P < 0.01, ***P < 0.001**

Table 10 depicts the association between health factors and clinical variables. An association was there for Diabetic history, and Latest blood sugar level whereas there was no association between patients under medical and non Medical measures with clinical variables. Hence the research hypothesis **H1** was partially accepted.

Table 11: Data pertaining to association between lifestyle factors and clinical variables among patients with Type II Diabetes Mellitus

n = 100

Sl: no	Clinical variables	Lifestyle factors				
		High risk f	Moderate risk f	High risk f	χ^2	P value
1. Diabetic history	a) Less than five years	0	2	48	1.333	df=2 .5135
	b) Between five and ten years	0	1	29		
	c) More than 10 years	0	2	18		
2. Under Medical measures.	a) Oral medication	0	0	60	8.421	df=2 .0148 **
	b) Insulin injection	0	3	17		
	c) No measures	0	2	18		
3. Under non medical measures.	a) Yoga	0	1	13	4.241	df=2 .2365
	b) Ayurveda	0	0	11		
	c) Exercise	0	3	22		
	d) Diet control	0	1	49		
4 Latest blood sugar level	a) Below 120 mg/dl	0	3	12	17.89 5	df=3 .00046 ***
	b) Between 120 and 200 mg/dl	0	0	47		
	c) Between 200 and 300 mg/dl	0	0	30		
	d) Above 300 mg/dl	0	2	6		

***P< 0.05, **P< 0.01, ***P< 0.001**

Table 11 depicts the association between lifestyle factors and clinical variables. An association was there for patients under medical measures and Latest blood sugar level, whereas there was no association between Diabetic history and patients under non Medical measures with clinical variables. Hence the research hypothesis H1 was partially accepted.

SUMMARY

This chapter dealt with analysis and interpretation of data obtained by the researcher. The analysis of the results showed that lifestyle factors have increasing chance to get type II diabetes mellitus and there will be a significant association between factors influencing type II diabetes mellitus and selected socio demographic variables.

CHAPTER V

DISCUSSION

This chapter deals with the discussion of the data analyzed based on the objectives and Hypothesis of the study. The problem stated was “A descriptive study to assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes.” The discussion was based on the objectives of the study and hypothesis mentioned in the study.

OBJECTIVES OF THE STUDY

- To assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes mellitus.
- To find out the association between predictive factors of Type II Diabetes Mellitus and the selected socio demographic and clinical variables.

Socio demographic variables of Type II Diabetes Mellitus patients

Socio demographic variables of patients with Type II Diabetes Mellitus such as, Age, Sex, and Religion, Type of family, Area of residence, Monthly income, Educational and Occupational status.

With regard to age, majority of 45(45%) were found between the age group of 30-40years, 35(35%) were in the age group of 51-60years and 20(20% were in the age group of 41-50 years.

With regard to gender, majority of 80 (80%) were males and least of 20 (20%) were females. With regard to the religion, majority of 40(40%) were Christians, 35(35%) were Muslims and least of 25(25%) were Hindus.

With regard to type of family, majority of 80(80%) were from nuclear family and 20(20%) were from joint family. With regard to area of residence, majority of 70(70%) belongs to urban background and remaining 30(30%) were from rural area.

With regard to educational level, majority of 32(32%) obtained higher secondary school education, 20(20%) obtained collegiate education,20(20%)obtained secondary school education,20(20%) completed high school education and least of 8(8%) completed primary school education.

With regard to occupational status, majority of 50(50%) were getting regular monthly income, 40(40%) depends on daily wages, 10(10%) were unemployed. With

regard to monthly income, majority of 42(42%) were getting monthly income of Rs.5001-8000/-, 30(30%) were getting more than 8000/- rupees per month,20 (20%) were getting monthly salary of Rs2000-5000/-month and least of 8 (8%) were getting less than Rs 2000/-month.

Clinical variables of Type II Diabetes Mellitus patients

Clinical variables of patients with Type II Diabetes Mellitus including diabetic history, under medical and non medical measures and latest blood sugar level.

With regard to diabetic history, majority of 50(50%) were diabetic for less than 5 years, 30(30%) were diagnosed within the period of 5 and 10 years,20(20%)has diabetes for more than 10 years.

With regard to present medical history, majority of 60 (60%) were taking oral medication, least of 20 (20%) were taking injection insulin and20(20%) were not under any medical measures.

With regard to taking non-medical measures, majority of 50(50%) are under diet control, 25(25%) are performing regular exercise,14(14%)are performing yoga and least of 11(11%) are under Ayurveda treatment.

With regard to latest blood glucose level, majority of 47(47%) has blood sugar between 120 and 200 mg/dl, 30(30%) has between 200 and 300 mg/dl, 15(15%) has below 120 mg/dl and least of 8(8%) has above 300 mg/dl.

Objective 1

To assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes mellitus.

The predictive factors of type II Diabetes Mellitus are dietary factors, health factors and lifestyle factors. In dietary factors, none fall on low risk group, Majority of 55(55%) Diabetes Mellitus patients fall under high risk dietary factors and 45(45%) patients had moderate risk of dietary factors. In health factors, overall none of the patient falls under low risk group. Majority of 70(70%) of Type II diabetes mellitus patients has high risk health factors and 30(30%) patient has moderate risk health factors. In lifestyle factors, overall none fall on low risk group. Majority of 95(95%) Type II

Diabetes Mellitus patients has high risk lifestyle factors and 5(5%) patient had moderate lifestyle factors

Objective 2

To find out the association between predictive factors of Type II Diabetes Mellitus and the selected socio demographic and clinical variable

The result reveals that, in dietary factors there was a significant association between age, religion, educational level, occupation and family income (*P< 0.05, **P< 0.01, ***P< 0.001 (2), ***P 0) with socio demographic variable. In health factors there was a significant association between age, residing place and family monthly income (*P< 0.05, **P< 0.01, ***P 0). In lifestyle factors there was a significant association between religion and residing area (*P< 0.05, **P< 0.01, ***P< 0.001) with socio demographic variables.

SUMMARY

This chapter deals with the objectives of the study, major findings of the demographic variables of patient with Type II Diabetes Mellitus, description of predictive factors and association between factors and selected socio demographic variables and clinical variables.

CHAPTER VI

SUMMARY, CONCLUSION, NURSING IMPLICATIONS AND RECOMMENDATIONS

This chapter deals with the summary of the study, and conclusion drawn from the implications of the study for different areas like nursing practice, nursing education, nursing administration, it also includes recommendations for future result in the field.

SUMMARY

The summary includes the, objectives of the study, description of procedure used, major findings and conclusion and recommendations for further research study.

“A descriptive study to assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes”

Objectives of the study

- To assess the predictive factors of Type II Diabetes Mellitus among patients with known diabetes mellitus.
- To find out the association between predictive factors of Type II Diabetes Mellitus and the selected socio demographic and clinical variable

Hypothesis

H1: There will be a significant association between predictive factors of Type II Diabetes Mellitus among patients with known diabetes with their selected socio demographic and clinical variables

The **conceptual framework** selected for this study is based on **“General system theory by Ludwingn Von Berlanffy (1968)**. General systems Theory explains that, a system is a set interrelated element.

The investigator organized the **Review of literature** under the following headings

- I. Reviews related to incidence and prevalence of Type II Diabetes Mellitus
- II. Reviews related to risk factors of Type II Diabetes Mellitus.

The study was conducted among OP/IP patients with Type II Diabetes Mellitus in selected hospitals, such as Annammal hospital-Kuzhithurai, for assessing the predictive factors of Type II Diabetes Mellitus. The sample size for the study was 100 and the

sampling technique used by the investigator was non probability convenient sampling method. Data collection period was one month and the tools used for data collection were planned structured questionnaire. The planned structured questionnaire consists of dietary factors, health factors and lifestyle factors scored 1 to 30, the maximum and minimum score were 30 and 1 respectively. Content validity and tool validity was obtained from 6 experts in nursing field, one physician and from one statistician. Pilot study was conducted for a period of one week duration. Content was found to be reliable and feasible. Reliability of the tool was calculated by test retest method. Pilot study was conducted in Annammal hospital Kuzhithurai during the month of October for a period of one week. Data collection was conducted during the month of December with duration one month data collection was for one month. Sample was collected from Annammal hospital .Non probability convenient sampling technique used to draw 100 samples from the study population. Planned structured questionnaire was used to assess the predictive factors of type II Diabetes Mellitus among patient with type II Diabetes Mellitus.

Collected data was analysed and interpreted as per the objectives of the study by using the descriptive statistics (frequency and percentage) and also by using inferential statistics (chi-square) methods after careful editing, coding and tabulated

Findings

Major findings of the study are presented under the followings;

1) Findings related to demographic variables of type II Diabetes Mellitus patients

With regard to age, majority of 45(45%) were found between the age group of 30-40years, 35(35%) were in the age group of 51-60years and 20(20% were in the age group of 41-50 years.

With regard to gender, majority of 80 (80%) were males and least of 20 (20%) were females. With regard to the religion, majority of 40(40%) were Christians, 35(35%) were Muslims and least of 25(25%) were Hindus.

With regard to type of family, majority of 80(80%) were from nuclear family and 20(20%) were from joint family. With regard to area of residence, majority of 70(70%) belongs to urban background and remaining 30(30%) were from rural area.

With regard to educational level, majority of 32(32%) obtained higher secondary school education, 20(20%) obtained collegiate education,20(20%)obtained secondary

school education,20(20%) completed high school education and least of 8(8%) completed primary school education.

With regard to occupational status, majority of 50(50%) were getting regular monthly income, 40(40%) depends on daily wages, 10(10%) were unemployed. With regard to monthly income, majority of 42(42%) were getting monthly income of Rs.5001-8000/-, 30(30%) were getting more than 8000/- rupees per month,20 (20%) were getting monthly salary of Rs2000-5000/-month and least of 8 (8%) were getting less than Rs 2000/-month.

2) Findings related to frequency and percentage distribution of dietary factors influencing type II Diabetes Mellitus among patients with type II Diabetes Mellitus.

It reveals that, none fall on low risk group, Majority of 55(55%) Diabetes Mellitus patients fall under high risk dietary factors and 45(45%) patients had moderate risk of dietary factors.

3) Findings related to frequency and percentage distribution of health factors influencing type II Diabetes Mellitus among patients with type II Diabetes Mellitus.

It reveals that, overall none of the patient fall under low risk group. Majority of 70(70%) of Type II diabetes mellitus patients has high risk health factors and 30(30%) patient has moderate risk health factors.

4) Findings related to frequency and percentage distribution of lifestyle factors influencing type II Diabetes Mellitus among patients with type II Diabetes Mellitus.

It reveals that, overall none fall on low risk group. Majority of 95(95%) Type II Diabetes Mellitus patients has high risk lifestyle factors and 5(5%) patient had moderate lifestyle factors.

5) Findings related to association between dietary factors and selected socio demographic variables among patients with type II Diabetes Mellitus.

It reveals that, there was no association between gender, type of family and residing place with socio demographic variables, whereas association was there for age,

religion, educational level, occupation and family income. (**P< 0.05, **P< 0.01, ***P< 0.001 (2), ***P 0) Hence the research hypothesis **H1** was partially accepted.

6) Findings related to association between health factors and selected socio demographic variables among patients with type II Diabetes Mellitus.

It reveals that, there was no association between gender, religion, type of family, education level and occupational status with socio demographic variables, whereas association was there for age, residing place and family monthly income.(*P< 0.05, **P< 0.01, ***P 0) Hence the research hypothesis **H1** was partially accepted.

7) Findings related to association between lifestyle factors and selected socio demographic variables among patients with type II Diabetes Mellitus.

It reveals that there was no association between age, gender, type of family, educational level, occupational status and monthly income with socio demographic variables, whereas association was there for religion and residing area (*P< 0.05, **P< 0.01, ***P< 0.001). Hence the research hypothesis **H1** was partially accepted.

CONCLUSION

The following conclusion was drawn from the findings of the study.

The main conclusion of the present study was 95(95%) had high risk for developing type II diabetes mellitus due to lifestyle factors. In health factors 70(70%) had high risk for developing type II diabetes mellitus. In dietary factors 55(55%) had high risk for developing type II diabetes mellitus, and there was significant association between predictive factors of type II Diabetes Mellitus and socio demographic and clinical variables. The above findings show that lifestyle factors are the most predominant cause of Type II Diabetes Mellitus. It is evident that developing countries need to make drastic changes in their way of living and habits in order to safeguard their citizens from systemic diseases like Type II Diabetes Mellitus.

IMPLICATIONS OF THE STUDY

Based on the findings the researcher recommended the implications on Nursing practice, Nursing administration, Nursing education and Nursing research.

NURSING PRACTICE

- Nurses can provide education during their posting in the clinical area to provide information about Type II Diabetes Mellitus.
- Nurses play an important role in primary health care by early detection and prevention of Type II Diabetes Mellitus.
- Nursing is a practicing profession, so the investigator generally integrates the findings of the present study in to practice.

NURSING EDUCATION

- As the change begins with education, INC and universities should increase the theory and also practical hours in OP patient department.
- The student nurses from the School & College of Nursing should be encouraged to attend specialized seminars regarding the early detection and prevention of Type II Diabetes Mellitus.
- Nurse educator should come forward to involve their students in clinical work which will bring awareness to the people regarding Type II Diabetes Mellitus
- In the clinical area the nurse educator can conduct health promotion programme about Type II Diabetes Mellitus.

NURSING ADMINISTRATION

- Nurse administrator should take responsibility in managing their personnel to meet the needs of patients with Type II Diabetes Mellitus.
- Nurse administrators should assume leadership role in training and providing health education programmes to patients.
- Nurse administrators should utilize available resources which are technologically sound in educating the patient through mass education programmes in the clinical setup.
- Nurse administrators can prepare written policies and protocols regarding care of patients with Type II Diabetes Mellitus.

NURSING RESEARCH

- There is a need for extensive and intensive research in this area so that strategies for education nurses and patients on the knowledge of Type II Diabetes Mellitus can be developed.
- This study will serve a valuable reference material for future investigators.
- Developing research would help nurse to deal efficiently and effectively thus reducing morbidity and mortality rates due to Type II Diabetes Mellitus

RECOMMENDATIONS

The sample study can be done on a larger population.

- A study can be conducted on quality of life among patients with Type II Diabetes Mellitus.
- Study can be conducted to assess the various factors which cause Type II Diabetes Mellitus.
- Study can be conducted to find the precipitating factors among patients with Type II Diabetes Mellitus.