

**EFFECTIVENESS OF HEALTH PROMOTION PROGRAM
ON LEVELS OF KNOWLEDGE AND ATTITUDE
REGARDING LIFE STYLE MODIFICATION AMONG
PATIENTS WITH DIABETES MELLITUS AT SRI
NARAYANI HOSPITAL AND RESEARCH CENTER**

(SNHRC), VELLORE.

301413302

**M.Sc (NURSING) DEGREE EXAMINATION
BRANCH-I MEDICAL SURGICAL NURSING
SRI NARAYANI COLLEGE OF NURSING,
VELLORE-55.**



A Dissertation Submitted to
**THE TAMIL NADU DR. M. G. R. MEDICAL UNIVERSITY,
CHENNAI- 600 032.**

In partial fulfillment of the requirement for the degree of
MASTER OF SCIENCE IN NURSING.

APRIL-2016.

CERTIFICATE

This is to certify that this dissertation entitled “**EFFECTIVENESS OF HEALTH PROMOTION PROGRAM ON LEVELS OF KNOWLEDGE AND ATTITUDE REGARDING LIFE STYLE MODIFICATION AMONG PATIENTS WITH DIABETES MELLITUS AT SRI NARAYANI HOSPITAL AND RESEARCH CENTER (SNHRC), VELLORE.**” is a bonafide work done by **Ms. Jhansi Rani.G**, Sri Narayani College of Nursing, Vellore – 55, in the partial fulfilment of the requirement for the award of the degree of Master of Science in Nursing, Branch I - Medical Surgical Nursing, under my guidance and supervision during the academic Period from April 2014 to 2016.

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ABSTRACT

INTRODUCTION:

Diabetes mellitus is a chronic condition but people with diabetes can lead a normal life. Life style modification can be a very effective way to keep diabetes under control.

STATEMENT OF THE PROBLEM:

“Effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center (SNHRC), Vellore”

OBJECTIVES:

1. To assess the pre test levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus.
2. To determine the effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus.
3. To determine the association between post test levels of knowledge and attitude regarding life style modification and selected demographic variables among patients with diabetes mellitus.

METHODOLOGY:

The research design used was pre experimental, one group pre and posttest design. Non probability, purposive sampling was adopted to select 30 samples. Structured questionnaire was used to assess levels of knowledge and attitude regarding life style modification. Descriptive and inferential statistics were used for analysis and interpretation of data.

RESULTS AND INTERPRETATION:

Finding of the study showed that the pre test mean value for levels of knowledge was 15.8 and post test mean value is 32. The mean difference was 16.2. The computed 't' value ('t'=14) was higher than the table value (3.66) at $p < 0.001$ level. The 'chi' square values of selected demographic variables on post test levels of knowledge shows age, gender, religion, education, occupation, residential area, sources of information was significant, at level $p < 0.05$. Marital status, Monthly income in INR, type of family, type of food, family history of DM, previous knowledge on DM was non significant, at $p < 0.05$ level.

The pre test mean value for levels of attitude was 28 and post test is 41. The mean difference is 13. The computed 't' value ('t'=14) was higher than the table value (3.66) at $p < 0.001$ level. The 'chi' square values of all the 13 demographic variables on post test levels of knowledge are non significant at level $p < 0.05$.

CONCLUSION:

The most of the patients with diabetes mellitus have improvement in levels of knowledge and attitude after health promotion program regarding life style modification. The hypothesis H₁, H₂, H₃ is accepted.

KEY WORDS:

Effectiveness, health promotion program, levels of knowledge and attitude, life style modification.

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ABBREVIATIONS

AC	Ante cibum
ADA	American diabetic association
CBG	Capillary blood glucose
CHO	Carbohydrate
DFS	Diabetes fact sheet
DM	Diabetes mellitus
HbA1c	Glycosylated hemoglobin
ICMR	Indian council of medical research
IDDM	Insulin dependent diabetes mellitus
IDF	International diabetes federation
IDRF	Indian diabetes research foundation
IGT	Impaired glucose tolerance
MCR	Micro cellular rubber
NIDDM	Non insulin dependent diabetes mellitus
OGTT	Oral glucose tolerance test
OHA	Oral hypoglycemic agent
PC	Post cibum
SMBG	Self monitoring of blood glucose
SNCON	Sri Narayani College of Nursing
SNHRC	Sri Narayani Hospital and Research Center
SPSS	Statistical package for social science
WHO	World health organization

CHAPTER-I

INTRODUCTION

“Leave your drugs in the chemist’s pot if you can heal the patient with food.”

- Hippocrates 460-360 BC

Diabetes mellitus is a group of metabolic diseases characterized by increased level of glucose in the blood from defects in insulin secretion and insulin action or both. **(International Diabetics Federation) 2014.**

A prevalence of diabetes is rising all over the world due to population growth, aging, urbanization, increase of obesity and physical inactivity. People who are most affected by diabetes in Asian countries is disproportionately high in young to middle-aged adults. This could have long-lasting adverse effects on a nation’s health and economy, especially for developing countries **(Diabetics fact sheet, WHO) oct 2014.**

India, already the diabetic capital of the world, is heading towards a diabetic explosion. They expected 70 million people to be affected by 2015. “A recent study did in chennai and kancheepuram shows an increase in prevalence of 40% in urban areas in six years, and 49% in rural areas in three years. This proves the general hypothesis of diabetics affecting more urbanites than rural people wrong”, says **Indian diabetics research foundation president Dr.A.Ramachandran 2015.**

Diabetes mellitus is an increasingly important global public health problem that threatens to reach pandemic level by 2030. Some randomized trials have consistently shown, increased physical activity and weight loss are efficient approach for the control and prevention of diabetes **(Global implications of Diabetics , june 2014)**

In United States, from 1980 through 2002, the number of Americans with diabetics more than doubled and increased in all age groups. Currently, it is estimated that more than

23 million people in the United States are diabetics. Although almost people newly diagnosed with diabetics increase by about 1 million people newly per year. By 2030, the number of cases are expected to be 30 millions (**International Diabetics Federation Atlas**) **2014**.

Diabetes mellitus is a major emerging clinical and public health problem in world-wide. In 2014, the International Diabetics Federation (IDF) estimated that diabetes resulted in 4.9 million deaths and the World Health Organization (WHO) estimated that diabetics resulted in 1.5 million deaths in 2012, thus makes it the 8th leading cause of death in world wide. Among that more than 80% of diabetic deaths occur in low and middle-income countries (**International Diabetics Federation Atlas**) **2014**.

The greatest increase in rates was expected to occur in Asia and Africa, where most people with diabetics will probably live in 2030. The increase in rates in developing countries follows the trend of urbanization and lifestyle changes, including a "Western-style" diet. This has suggested an environmental (i.e., dietary) effect, but there is little understanding of the mechanism at present (**Sattar N**).

Prevalence of diabetes mellitus in India has been growing by leaps and bounds. In the last 20 years there has been a threefold increase in the prevalence of diabetics and today it is estimated that there are over 20 million diabetic patients in India. India's diabetic population now ranks first in the world.

A recent national population based study conducted by **Ramachandran , et al (2014)** in six urban cities revealed astonishing results. This study suggested that the prevalence of diabetics among Chennai residents to be 13.5%, Banglore-12.4%, Hyderabad – 16.6%, Calcutta – 11.7%, New Delhi – 11.6% and Mumbai – 9.3%. Thus it is clear that in the last two decades, there has been a marked increase in the prevalence of diabetics among

urban Indians. **Ramaiya KL, Kodali VRR, Alberti KGMM** had mentioned that there is a wide urban-rural difference, the prevalence being 2.4% in rural and 11.6% in the urban population. (Indian council of medical research)

The management of diabetes is the most critical part. Lifestyle modifications like diet changes, exercise, insulin therapy, self monitoring of blood glucose, foot care of diabetes and follow up helps to reduce blood glucose level and prevent diabetes mellitus. So the life style modification has lot of health benefits for diabetic patients.

Diabetes is a global health problem that is expected to present one of the 21st century's biggest medical challenges. The role of lifestyle and behavioral factors in the development and management of this chronic illness is now widely acknowledged. **Farooq Mohyud Din Chaudhary (2010)**.

Diabetes mellitus is a chronic condition but people with diabetes can lead a normal life provided they keep their diabetes under control. Life style modifications are an essential component of any diabetes management plan. Life style modification can be a very effective way to keep diabetes under control. Improved blood glucose control can slow the progression of long term complications. Small changes can lead to improvements in diabetes control, including a decrease in need for medication.

NEED FOR THE STUDY

In 2014 the global prevalence of diabetes was estimated to be 9% among adults aged 18 above years. In 2012, an estimated 1.5 million death were directly caused by diabetes. More than 80% of diabetic's death occurs in low and middle income countries. WHO projects that diabetes will be the 7th leading cause of death in 2030. Healthy diet, regular physical activity, maintaining a normal body weight can prevent or delay the onset of diabetes.

Diabetes is fast gaining the status of a potential epidemic in India with more than 62 million diabetic individuals currently diagnosed with the disease. In 2014, India (31.7 million) topped the world with the highest number of people with diabetes mellitus followed by China (20.8 million) with the United States (17.7 million) in second and third place respectively. According to Wild et al the prevalence of diabetes is predicted to double globally from 171 million to 366 million in 2030 with maximum increase in India. It is predicted that by 2030 diabetes mellitus may afflict up to 79.4 million individuals in India, while China (42.3 million) and the United States (30.3 million) will also see significant increase in those affected by the disease.

A lower proportion of the population is affected in states of Northern India (Chandigarh 0.12 million, Jharkhand 0.96 million) as compared to Maharashtra (9.2 million) and Tamil Nadu (4.8 million). The national urban survey conducted across the metropolitan cities of India reported similar trend. 11.7 % in Kolkata (Eastern India), 6.1 % in Kashmir valley (Northern India), 11.6% in New Delhi (Northern India), and 9.3% in West India (Mumbai) compared with 13.5% in Chennai, 16.6% in Hyderabad, 12.4 % in Bangalore. **Seema Abhijeet(2014) Indian council of medical research (ICMR)**

Currently India has the largest number of diabetics while comparing to the other developing countries. Most of the recent increase in diabetics is lifestyle-related. In India also the dramatic rise in the prevalence of diabetes mellitus is closely associated with changes in lifestyle like relative physical inactivity, central obesity and change in food habits, particularly increased consumption of fast foods (**RGUHS Journal of Medical Sciences, April 2012**)

As per the survey results, prevalence of diabetes in Vellore district is 16.7%. Total district population is 3928106, male are 1968430 and female are 1968430. (**Murugeswari Shivashankar 2013**)

A health promotion program helps the diabetic clients in gaining knowledge and developing attitude. The health promotion program can guide, teach and promote an environment for the diabetic clients to practice the preventive measures like diet control, exercises, medication and foot care and regular follow up (**Ravi Chandran 2012**).

Lifestyle related risk factors play an important role in the development of diabetes mellitus. This is evident from increasing incidence of various secondary complications in diabetes. Some of these risk factors like dietary choices, smoking, and alcohol consumption, overweight and secondary lifestyle are modifiable. Studies have shown that factors if effectively controlled, can lead to reduction in the risk of developing complications (**A Jeffrey Johnson. Diabetes Care) 2013**).

In this contemporary world most of the people do not give more care to the life style modification. In the developing and developed countries no one has time to understand their health and to give care to them. In clinical investigator found many patients with diabetic complication. This study helps to provide information to people about life style modifications and awareness of health will make the person to lead their remaining life satisfactorily.

STATEMENT OF THE PROBLEM

Effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center (SNHRC), Vellore.

OBJECTIVES:

- To assess the pre test levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus.

- To determine the effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus.
- To determine the association between post test levels of knowledge and attitude regarding life style modification and selected demographic variables among patients with diabetes mellitus.

OPERATIONAL DEFINITION:

EFFECTIVENESS

It refers to significant difference in levels of knowledge and attitude regarding life style modifications among patients with diabetes mellitus before and after health promotion program.

HEALTH PROMOTION PROGRAM

It refers to teaching material developed by the investigator for imparting knowledge and desired attitude regarding life style modification of diabetic patients.

KNOWLEDGE

It refers to the information gained by patients regarding lifestyle modifications on diabetes mellitus as measured by structured interview schedule prepared by the investigator.

ATTITUDE

It refers to Patients perception and beliefs regarding lifestyle modifications on diabetes mellitus as measured by likert scale developed by investigator.

LIFE STYLE MODIFICATION:

It refers to ways of altering the day to day activities such as diet, exercise, self monitoring on blood glucose, foot care, prevention of complications, follow up.

PATIENTS WITH DIABETES MELLITUS:

It refers to patients who were diagnosed as diabetes mellitus for the first time based on blood investigations like AC, PC, Hb A1c.

HYPOTHESES:

H₁- There is a significant difference in pre and post test levels of knowledge regarding lifestyle modification among patients with diabetes mellitus at SNHRC.

H₂- There is a significant difference in pre and post test levels of attitude regarding lifestyle modification among patients with diabetes mellitus at SNHRC.

H₃- There is a significant association between post test levels of knowledge regarding lifestyle modification and selected demographic variables among patients with diabetes mellitus at SNHRC.

H₄- There is a significant association between post test levels of attitude regarding lifestyle modification and selected demographic variables among patients with diabetes mellitus at SNHRC.

DELIMITATIONS:

The study is delimited to

- Patients who are willing to participate.
- 4 weeks of data collection.

CONCEPTUAL FRAMEWORK

KOLCABA'S THEORY OF COMFORT

Conceptualization is the planning and designing of ideas. The model helps in the research progression. Kolcaba's theory of comfort was developed by Katherine Kolcaba in 1990.

According to Kolcaba model, comfort is an immediate desirable outcome of nursing care. According to this model, patients are considered to be individual, families, institutions or communities in need of health care. In the model, nursing is described as the process of assessing patient's comfort needs, developing and implementing nursing care plans and evaluation of those plans.

CONCEPTS IN THE FRAMEWORK

HEALTH CARE NEEDS:

Kolcaba defined health care needs as any deficits in any context of comfort that arise from Stressful health care situations which the patient's natural system cannot meet. In this study, health care need refers to levels of knowledge and attitude among patients with diabetes mellitus.

NURSING INTERVENTIONS:

According to Kolcaba, it refers to the comfort measures which nurses design and implement that are targeted to health care needs. These interventions have the explicit goal of enhancing the patient's immediate comfort and for facilitating subsequent desirable health seeking behavior. In this study nursing interventions include health promotion program to improve the levels of knowledge and attitude regarding life style modifications.

INTERVENING VARIABLES:

It refers to factors that each patient brings to health care situation that nurses can't change and that have an impact on the success of interventions. In the study the

demographic variables such as age, gender, religion, marital status, educational status, occupation, monthly income, type of family, residential area, type of food, any family history of diabetes mellitus, previous knowledge on diabetes, sources of information.

ENHANCED COMFORT:

According to Kolcaba, it refers to the immediate experience of comfort in the ease sense, relief and transcendence met in physical, psychospiritual, environmental and sociocultural context of experience. In the present study it refers to the improvement in levels of knowledge and attitude among patients with diabetes mellitus following health promotion program.

HEALTH SEEKING BEHAVIOUR:

According to the comfort theory, it includes internal and external behaviour in which the patient engages to facilitate health or peaceful death. Internal behaviours are the effect of exercises on psychological and physiological parameters which include healing, oxygenation etc. and external behaviour includes working in a therapy, ambulation. In this study, health seeking behaviour refers to the personal practice of diet modification, exercise, self monitoring of blood glucose, foot care, prevention of complication, follow up among patients with diabetes mellitus which is an external behaviour.

INSTITUTIONAL INTEGRITY:

Institutional integrity is the value, financial stability and wholeness of health care organizations at local, regional, state and national levels. In this study institutional integrity is exhibited by recommending diet modification, exercise, self monitoring of blood glucose, foot care, prevention of complication, follow up among patients with diabetes mellitus.

BEST PRACTICES AND POLICIES:

Best practices and policies are protocol and procedures developed by an institution for overall use after collection of evidence. In this study, *best policies* include the revision

of policies to practice health promotion program. In this study, *best practices* refer to the incorporation of diet modification, exercise, self monitoring of blood glucose, foot care, prevention of complication, follow up in day to day practice, for patients with diabetes mellitus.

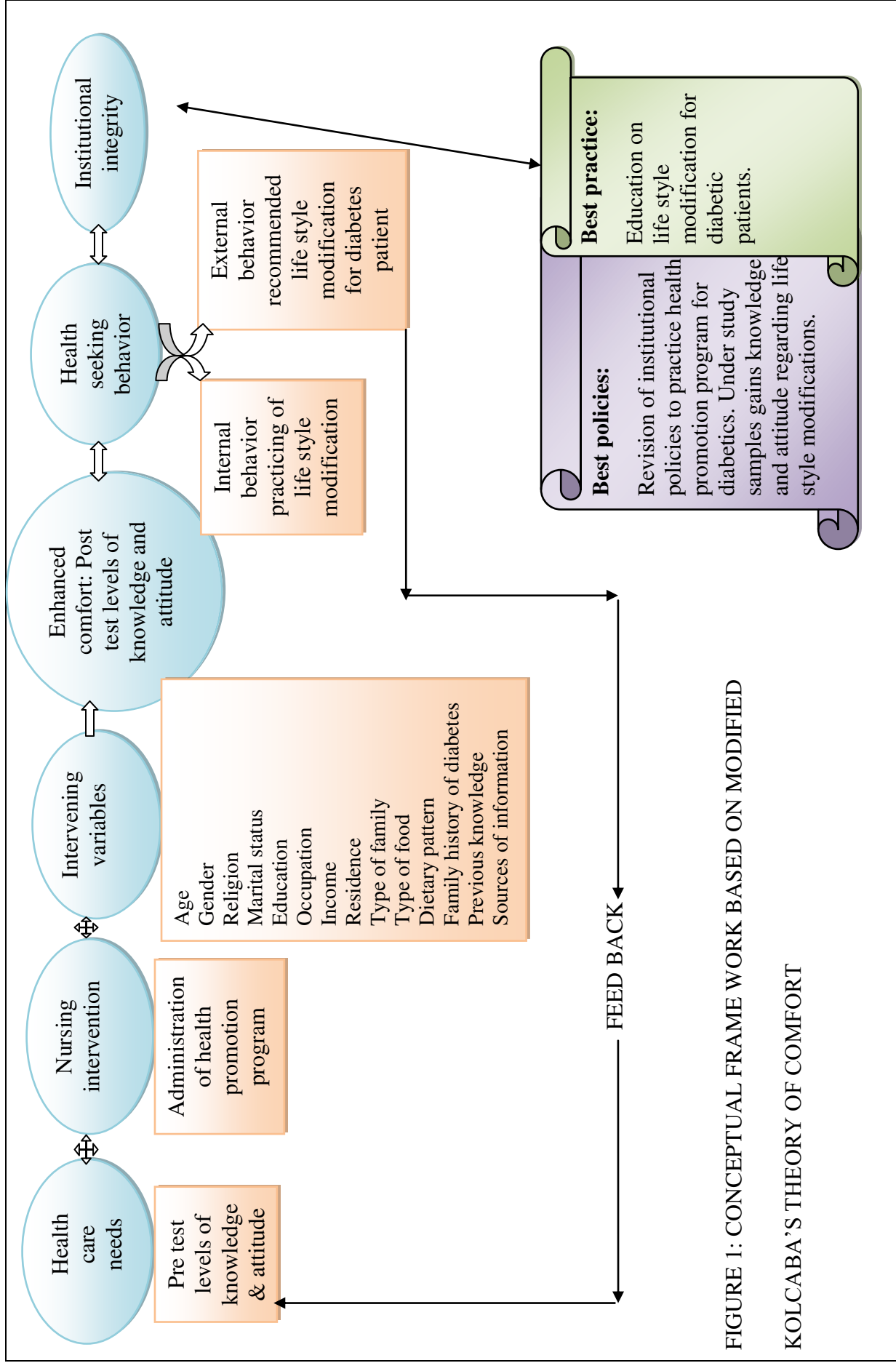


FIGURE 1: CONCEPTUAL FRAME WORK BASED ON MODIFIED

KOLCABA'S THEORY OF COMFORT

CHAPTER-II

REVIEW OF LITERATURE

A literature review is a body of text that aims to review the critical points of knowledge on a particular topic of research. (ANA-2000).

Review of literature for the study has been done on knowledge regarding lifestyle modification among diabetes mellitus. Review of literature in this study is arranged under the following heading

LITERATURE RELEATED TO:

SECTION A: Knowledge and Attitude on Diabetes mellitus.

SECTION B: Educational program and Life style modification among diabetics.

SECTION C: Diet, exercise, Self Monitoring on blood glucose among diabetics.

SECTION D: Foot care practice among diabetics.

SECTION A: LITERATURE RELATED TO KNOWLEDGE AND ATTITUDE ON DIABETES MELLITUS.

ARYAL UR (2015) conducted a study to determine the level of diabetes related health knowledge, attitude and practice (KAP) among diabetic patient and factors associated with KAP. An institutional based cross-sectional study was conducted using a non-probability sampling technique to select the diabetic patients. A total of 244 diabetic patients were interviewed from July to November 2014. Data was collected by face to face interview using structured interviewer rater questionnaires. Median score for knowledge, attitude, and practice were 81, 40 and 14 respectively. Among all patients, 12.3%, 12.7% and 16% had

highly satisfactory knowledge, attitude and practice respectively. Using highly insufficient knowledge as the baseline, the likelihood of having a level of highly sufficient knowledge was 17 times higher among patients who have graduated and above level of education compared to those who were illiterate. Albeit this value was comparatively lower than insufficient level of knowledge. This study reveals a variation between diabetes related health knowledge, attitude and practice in Nepal among those who are affected by diabetes. The results show the potential diabetes health literacy needs to be was a significant ($P < 0.01$) improved for better health promotion.

JARUSEVICIENE L (2014) Public awareness about diabetes, a cross sectional study of Lithuania's residents. A public opinion survey was performed in April 2012. Interviews with a random sample of 1,002 residents of Lithuania aged 16-74 were conducted in the households of the respondents. This sample took into account age, sex, education, employment, family status, and the size of the residential location. The topics covered by the 15-item questionnaire used for these interviews concerned the perceived severity of different health conditions and the respondents' knowledge of diabetes risk factors and normal glycemic indicators as well as their perceptions related to diabetes and insulin. There was a significant ($P < 0.01$). The study concluded that the potential social stigmatization of diabetes and encourage looking for new ways in approaching the community as well as individual diabetic patients in regard to the issue of diabetes.

NEMPERUMALSAMY (2013) conducted a study on Knowledge and practice of a semi urban Omani population regarding diabetes was conducted. A total of 563 adult residents were interviewed using questionnaires for study. The percentages of correct responses to questions on diabetes meaning, classical symptoms and complications were 46.5%, 57.0% and 55.1% respectively. Only 29.5%, 20.8% and 16.9% identified, obesity, physical inactivity and positive family history, respectively, as risk factors for diabetes. A higher

level of education, a higher house hold income, and presence of family history of diabetes found to be positively associated with more knowledge. This study demonstrated that there is lack of awareness of major risk factors for diabetes mellitus. Study suggested that the level of education is the most significant ($p < 0.01$) predictor of knowledge regarding risk factors, complications and prevention of diabetes.

MILENKOVIE(2010) A study on diabetes education programme, have been designed specifically for older adults. This study evaluated the impact of nutrition intervention on blood glucose and lipoprotein levels of adult > 65 years of age without functional limitations. 98 people were randomized to the experimental group and for control group. A pre-test-post-test control group design was used to evaluate the intervention. 92 people (94%) completed the study. Participants exceeded the guidelines for optimal glycemic control at the pretest. The experimental group had greater improvement in fasting plasma glucose ($p = 0.05$) and glycated hemoglobin ($p < 0.01$) than the control group. Study concluded stating that older adults with diabetes need additional education to achieve metabolic control. Study suggested that nutrition education can improve metabolic control. Improved metabolic outcomes reduce the morbidity and mortality associated with diabetes.

MOHAN (2011) conducted a descriptive study conducted on 100, diabetes patients to assess the knowledge and attitude on self care activities by using interview schedule and Likert's scale. The results showed that 48% of the patients had inadequate knowledge, 35% of the patients had moderately adequate knowledge and 17% of the patients had adequate knowledge. Regarding attitude 72% of the patients had undesirable attitude, 16% of the patients had desirable attitude and 12% of the patients had most desirable attitude on self care activities. The researcher concluded that most of the patients were having inadequate knowledge and attitude about diabetes mellitus. So it is suggested that proper health education can improve the patient's knowledge and attitude on self care activities.

RANJINI (2010) A study administered structured questionnaire on knowledge, belief and practices regarding diabetes to 199 subjects with diabetes (92.5% DM), attending the Aga Khan University Hospital, Karachi. Mean age was 53, Mean duration of diabetes was 7 years in men and 6 years in women. Men had a significantly better knowledge score than women ($p= 0.02$), there was no significant difference in the beliefs and practices scores.

SECTION B: LITERATURE RELATED TO EDUCATIONAL PROGRAM AND LIFE STYLE MODIFICATION AMONG DIABETICS.

GAILLARD T 2015 conducted a study on patient-centered community diabetes education program improves glycemic control in African-American patients with poorly controlled Type 2 Diabetes: Importance of Point of Care Metabolic Measurements. African-Americans with type 2 diabetes (T2DM) have higher morbidity and mortality partly attributed to poor glucose control and lack of formal diabetes self-management education and support (DSMES) programs compared to Whites. 124 African-American patients were recruited with T2DM, randomized into Group 1-DSMES ($n = 58$) and Group 2-standard care group ($n = 38$) for 6 months. Body weight, blood pressure, random blood sugars and point-of-care (POC) hemoglobin A1C (A1C) and lipids/lipoproteins were measured at 0, 3, and 6 months. No significant changes were found in the clinical/metabolic parameters in Group 2. This study concludes that DSMES, supplemented with POC testing, was associated with significant improvements in glycemic control without changes in body weight, blood pressure, or lipids/lipoproteins. The inclusion of DSMES with POC testing in managing African-American patients with T2DM attending inner city primary care clinics were recommended.

YU R (2014) A community-based individualized lifestyle intervention among older adults with diabetes was conducted in 5 community clinics in Tianjin, China. Trained physicians used energy monitors and software as tools to provide eight individualized lifestyle

consultation sessions to 273 residents with diabetes (including prediabetes). The recruitment was based on a waitlist control design. The early group (n = 175) received the 3-month intervention and the late group served as controls; afterward, the early group was followed up while the late group received the 3-month intervention. Selected characteristics between the 2 groups were compared by χ^2 tests, continuous variables paired 't' tests, and independent t tests. Result shows Compared with baseline, the intervention significantly increased effective (3-6 metabolic equivalents and >6 minutes) physical activity by 54.6 kilocalories per day (P < .01) and decreased total dietary intake by 328.5 kilocalories per day (P < .01). The net differences between early group (intervention) and late group (control phase) were significant (P < .01) for weight, waist circumference, 2-hour postprandial glucose, and hemoglobin A1C. Hence concluded that community-based lifestyle program produced short-term beneficial changes in activity, diet, and clinical parameters in patients with mild diabetes. Larger and longer trials are needed to fully evaluate the effectiveness and feasibility of this model.

TUSO P (2014) conducted a study on diabetes and lifestyle modification: time to prevent a preventable disease. More than 100 million Americans have diabetes. Diabetes is a condition in which individuals have blood glucose levels higher than normal but not high enough to be classified as diabetes. People with diabetes have an increased risk of Type 2 diabetes. An estimated 34% of adults have diabetes. Diabetes is now recognized as a reversible condition that increases an individual's risk for development of diabetes. Lifestyle risk factors for diabetes include overweight and physical inactivity. Increasing awareness and risk stratification of individuals with diabetes may help physicians understand potential interventions that may help decrease the percentage of patients in their panels in which diabetes develops. If untreated, 37% of the individuals with diabetes may have diabetes in 4 years. Lifestyle intervention may decrease the percentage of diabetic patients in whom

diabetes develops to 20%. Long-term data also suggests that lifestyle intervention may decrease the risk of diabetes progressing to diabetes for as long as 10 years. To prevent 1 case of diabetes during a 3-year period, 6.9 persons would have to participate in the lifestyle intervention program. Investment in a diabetes prevention program now may have a substantial return on investment in the future and help prevent a preventable disease.

LEE JK (2014) conducted a study on Effects of a coaching program on comprehensive lifestyle modification for women with diabetes mellitus. The research design for this study was a non-equivalent control group quasi-experimental study. Participants in this study were 34 for the control group and 34 for the experimental group. The experimental group participated in the Coaching Program on Comprehensive Lifestyle Modification. The program consisted of education, small group coaching and telephone coaching over 4 weeks. There were significant improvements ($p= 0.05$) in self-care behavior, and decreases in depression, fasting blood sugar and HbA1C in the experimental group compared to the control group. However, no significant differences were found between the two groups for knowledge of diabetes mellitus. The Coaching Program on Comprehensive Lifestyle Modification used in this study was found to be effective in improving self-care behavior and reducing depression, fasting blood sugar and HbA1C, and is recommended for use in clinical practice as an effective nursing intervention for women with diabetes.

PALAIAN (2010) conducted a randomized clinical trial for benefit of life style modification in diabetes care. The diabetes prevention study and diabetes management programme in the USA, both demonstrated that life style change can significantly reduce the risk or life style changes can translate into significant risk reduction. Societies cannot afford to ignore the evidence of health benefits associated with physical activity and healthy weight in favor of medicating when morbidities develop. They come to the conclusion that, for a successful public health approach to chronic disease prevention, one cannot rely

completely on pharmaceuticals, but must implement environmental change and a healthy lifestyle.

WILLIAM (2010) conducted a study to prove that the “Life style changes can reduce the risk of diabetes”. Researcher randomized 522 middle aged samples, overweight men and women with impaired glucose tolerance were randomly allocated to one of two groups. The intervention group received intensive diet and exercise training with the goal of reducing body weight by 5% reducing total fat to 30% and saturated fat to 10 % of calorie intake, increasing fiber intake to 15 grams per 1000 Kcal, and exercising at least 30 minute each day. The control group received only printed information on diet and exercise. Researcher assessed weight and blood glucose levels several times during the study. At the end of one year, those in intervention group lost average 4.2 kg weight, compared with an average weight loss of 0.8 kg of those in the control group. The intervention group also showed a significant reduction in waist circumference and fasting plasma glucose concentration. This study suggested that even small changes in the life style can have a significant change on the health of diabetics.

SECTION C: LITERATURE RELATED TO DIET, EXERCISE, SELF MONITORING ON BLOOD GLUCOSE AMONG DIABETICS.

CAMPBELL AP (2015) conducted a study on Dietary protein is important in the practical management of diabetes and type 2 diabetes. Many misconceptions surround the role of dietary protein in the management of diabetes. Currently, recommendations for protein intake are based on individual assessment and the consideration of other health issues and implications, such as the extent of glycemic control, the presence of kidney disease, overweight and obesity, and the age of the patient. For many people with type 2 diabetes, aiming for 20-30% of total energy intake as protein is the goal. Exceptions may be for those individuals with impaired renal function. A protein intake of this amount can be beneficial

by improving glycemic control, aiding in satiety and preservation of lean body mass during weight loss in those with both diabetes and prediabetes, and providing for the increased protein requirements of the older adult. Health care providers should discuss the role of dietary protein with their patients, reinforce sources of protein in the diet, and use simple but effective teaching tools, such as the plate method, to convey important nutrition messages. It shows greater improvement in fasting plasma glucose ($p= 0.05$) and glycosylated hemoglobin ($p<0.01$). In addition, health care providers should recognize that persons with diabetes are attempting to manage many other aspects of their diabetes, including blood glucose monitoring, physical activity, and taking of medication, risk reduction, and problem solving.

VEGA C (2014) conducted a study on Quality of carbohydrates in the diet and their effect on metabolic control of type 2 diabetes. The objective of this study was to determine the relationship between the parameters of metabolic control and quality of carbohydrates (CHO) of the diet in individuals with type 2 diabetes, controlled with diet and/or Metformin. In 108 men and women aged between 18 and 60 years, glycosylated hemoglobin A (HbA1c) between 6% and 10%, without sulfonylureas or insulin therapy; were examined through two separate surveys of 24-hour recall. The CHO intake, GI, GL of diet was analyzed. Values of HbA1c were collected from medical records. Data was tabulated in SPSS version 17 software. The Pearson correlation test was used to analyze the degree of association between variables, considering significant at $p < 0.05$. The mean HbA1c was $7.3 \pm 1.3\%$, CHO consumption was 219.8 ± 27.0 g/day; GI was $74.9 \pm 11.3\%$ and GL was 164.0 ± 22.04 g. A significant positive correlation was found out between the CHO intake ($r = 0.290$, $P < 0.05$), GI ($r = 0.70$, $p < 0.001$), GL ($r = 0.225$, $p < 0.05$) of diet and HbA1c levels in the individuals. In conclusion the study showed that the quality of CHO, mainly GI, are strongly associated with metabolic control of DM 2.

TEIMOURZADEH M (2014) conducted a randomized clinical trial the effect of 8 weeks aerobic exercise on insulin resistance in type 2 diabetes. Diabetes complications are the main reasons behind morbidity and mortality preventable by healthy diet and physical activity. There are few studies about the effect of aerobic exercises on insulin resistance in human. Also various training protocols are associated with different results. Since approaches to decrease insulin resistance may be followed by more effectiveness treatment, this study assessed the effect of aerobic exercise on insulin resistance in type 2 diabetes mellitus. In this randomized clinical trial, 53 type 2 diabetic women were randomly divided into two groups as exercise (n=27) and control (n=26).The exercise protocol included warm-up by stretching and flexibility exercises for 10 m, followed by walking for 30 m with maximum intensity 60% increase in heart rate and then stretching in the seated position for 10 m, 3 times a week for 8 weeks. Resistance to insulin was assessed using Homeostasis Model Assessment of Insulin Resistance (HOMA-IR). Significant differences have been observed in insulin resistance, fasting glucose and plasma insulin between the groups after 8 weeks. There were significant differences in waist and hip circumference, BMI, plasma insulin and insulin resistance within the groups over time. In addition, the changes in waist and hip circumference, FBS, plasma insulin and insulin resistance had significant interaction with the time between the groups. The current exercise protocol has been effective in lowering plasma glucose ($p = 0.05$), insulin levels ($p = 0.000$) and insulin resistance ($p = 0.02$). It seems that aerobic exercises training promote the effectiveness of medical treatment in type 2 diabetes mellitus.

VERAS VS (2014) conducted a study on Self-care among patients enrolled in a self-monitoring blood glucose program. This cross-sectional study checks specific self-care activities of patients with diabetes mellitus enrolled in a self-monitoring blood glucose program from August to December 2012 in two Primary Health Care units in the interior of

São Paulo, Brazil. The sample was composed of 74 female and male individuals, aged 18 years old or older. The Summary of Diabetes Self-Care Activities Questionnaire was used. Eight out of the 15 self-care activities were within desirable levels, namely: healthy diet, not eating sweets, blood glucose testing and as frequently as recommended, drying between toes after washing feet, and taking medications (three items). The results enabled there were significant improvements ($p= 0.05$) identification of gaps in specific self-care activities among patients with diabetes mellitus.

URBANSKI (2013) conducted a study to assess the effect of exercise in diabetes mellitus was researched. Trials were identified through the Central Register of Controlled Trials. Fourteen randomized controlled trials comparing exercise, against no exercise in diabetes were identified involving 377 participants. Trials ranged from eight weeks to twelve months duration compared with the control. The exercise intervention significantly improved glycemic control as indicated by a decrease in glycated hemoglobin levels of 0.6 percent. This resulted in both statistically and clinically significant changes. There was no significant difference between groups in whole body mass, probably due to an increase in fat free mass, with exercise intervention significantly increased insulin response and decreased plasma triglycerides. No significant difference was found between groups in quality of life. The analysis shows that exercise significantly improvements ($p= 0.05$) glycemic control and reduces visceral adipose tissue and plasma triglycerides.

VALLIS (2013) conducted a study investigated to know whether glycemic and lipid control in patients with diabetes can be significantly improved using a low-fat, vegetarian diet in the absence of recommendations regarding exercise or other lifestyle changes. Eleven subjects with diabetes were recruited from the Georgetown University Medical Centre and the local community was randomly assigned a low fat vegetarian diet or a conventional low fat diet (four subjects). Although the sample was intentionally small in accordance with

pilot study design, the 28 per cent mean reduction in fasting serum glucose of the experimental group, from 10.7 to 7.75 mmol/L (195 to 141 mg/dl), was significantly greater than the 12 per cent decrease, from 9.86 to 8.64 mmol/L (179 to 157 mg/dl), for the control group ($P<0.05$). The mean weight loss was 7.2 kg in the experimental group, compared to 3.8 kg for the control group ($P<0.005$). Differences between the diet groups in the reductions of serum cholesterol and 24 h microalbuminuria did not reach statistical significance. However, high density lipoprotein concentration fell more sharply (0.20 mmol/L) in the experimental group than in the control group (0.02 mmol/L) ($P<0.05$). Study concluded stating that the use of a low fat, vegetarian diet in patients with diabetes was associated with significant reductions in fasting serum glucose concentration and body weight in the absence of recommendations for exercise.

SECTION D: LITERATURE RELATED TO FOOT CARE PRACTICE AMONG DIABETICS.

JACOKEREKE C (2015) conducted a study on Diabetic foot ulcer, to highlight the pattern of presentation and to emphasize the need for multidisciplinary approach in prevention by integration of focused foot care plan. A total of 36 patients were recruited with a male female ratio of 1.8:1. Mean age of presentation was 55.5 years and commoner in those that have had diabetes for 10 - 15 years. Low level of education had a direct relationship with occurrence of DFU. Neuropathy was a common predisposing factor to DFU. More than 60% had no knowledge of foot care even though they have been educated on dietary control here was average hospital stay of 48 days, amputation rate of 19.4% and mortality rate of 8.3%. A comprehensive foot care program should be incorporated in the management of diabetes as soon as diagnosis is made in order to reduce the huge burden of DFU.

VAN BAAL (2014) conducted a cross sectional study on knowledge and practice of foot care in Iranian people with diabetes, to determine the knowledge and practice of foot care in people with diabetes was undertaken. A questionnaire was completed by 148 patients with diabetes in Tehran, Iran. Knowledge score was calculated and current practice was determined. The knowledge score was 6.6 out of possible 16 illiterate patients who were the least knowledgeable. Lack of adequate knowledge includes the following 56% not aware of the effect of smoking on circulation to the feet, 60% failed to inspect their feet and 42 % did not know to trim their toenails and high risk practice including walking bare foot. The results of this study highlighted the patient's inadequate knowledge of self care about their foot and lack of optimal foot care services.

LORETO (2013) Researchers had expressed that management of the diabetic foot ulcers are likely to occur in up to 25% of people with diabetes mellitus at some time in their life without adequate management. There is a high risk of infection, gangrene, amputation and death. Over 50% of major amputation in the UK happens to people with diabetes, and within three years of amputation 50% patients die. Diabetic foot ulcer need specific management and some of the principles of moist wound healing do not apply. Diabetic patients with foot ulcers benefit from accurate and prompt assessment, diagnosis, treatment, and long term follow up. In order to conserve the foot ensure that these complex wounds are treated.

DEAKIN (2011) conducted a study to prove that lifestyle interventions can prevent the deterioration of impaired glucose tolerance to manifest diabetes was undertaken. In the extended follow up of the Finish diabetes prevention study assessed the extent to which the originally achieved lifestyle changes and risk reduction remain, after discontinuation of active counseling. Overweight, middle aged men (n=172) and women (n=350) with impaired glucose tolerance were randomly assigned to intensive lifestyle intervention or

control group. During the total follow up the incidence of type 2 diabetes was 4.3 and 7.4 per 100 person years in the intervention and control group, respectively (long rank test $P=0.0001$), indicating 43 per cent reduction in relative risk. The risk reduction was related to the success in achieving the intervention goals of weight loss, reduced intake of total saturated fat and increased intake of dietary fiber as well as increased physical activity. Beneficial lifestyle changes achieved by participants in the intervention group were maintained. Lifestyle intervention in people at high risk for diabetes resulted in sustained lifestyle changes and a reduction in diabetes incidence, which remained even after the individual lifestyle counseling, was stopped. Study suggested that physical activity and exercise are important components in the prevention of diabetes, in addition to lowering blood glucose; exercise improves insulin action, contributes to weight loss, and reduces several risk factors for cardiovascular disease. Physical activity reduces occurrence of diabetes long term complications. This suggests that regular physical activity has a protective role. This association has been shown in the diabetes prevention programme, in which physical activity in the form of walking for 30 minutes/ day on most days of the week was encouraged.

DEAKIN (2011) A study explained that preventing vision loss due to diabetes relies on an intensive metabolic control of diabetes and elimination of coexisting risk factors for development of diabetic retinopathy and, on the other hand on carrying out a programme for early detection and treatment of diabetic retinopathy. Proper treatment of diabetes expressed by good glycemic control, proper arterial pressure parameter and lipid concentration in blood, reduce the risk of heavy complications and extend life span and improve its quality. An ideal model of screening studies diabetic retinopathy is based on an annual examination of vision acuity in all diabetic patients, by an experienced ophthalmologist using precise methods for imaging eye fundus. The incidence of vision loss due to diabetes is

significantly (-1.6 and -2.4%, both $P < 0.01$) lower in the countries which introduced programs preventing retinopathy, than in those which do not have them.

BRUGGEN (2010) conducted a study to evaluate the weight loss and exercise programme designed to improve diabetes management in older African – Americans was undertaken. Overweight African- Americans ($n=64$) ages 55 – 79 years with DM were randomized to either an intervention or usual care at 0, 3 and 6 months of treatment. Significant net differences in the intervention versus usual care were observed for weight (-2.0 kg, $P=0.006$), physical activity and dietary intake of fat, saturated fat, cholesterol and nutrition knowledge at 3 months (all $P < 0.05$), and for weight at 6 months (-2.4 kg; $P=0.006$) and mean HbA1c values at 3 and 6 months respectively. After the adjustment for changes in weight and activity, the intervention participants were approximately twice as likely to have a one unit decrease in HbA1c value as those in usual care. Study resulted that the intervention programme was effective in improving glycaemic and blood pressure control. The decrease in HbA1c values was generally independent of the relatively modest changes in dietary intake, weight and activity and may reflect indirect programme effects on other aspects of self care.

CHAPTER-III

METHODOLOGY

This chapter deals with methodology and selected by the investigator study to assess Effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center (SNHRC), Vellore.

Methodology refers to the techniques used to structure a study to gather and analyze information in a systematic fashion.

– Polit & Hungler

RESEARCH APPROACH:

Research approach used for the study was Quantitative with Evaluative Research Approach.

RESEARCH DESIGN: Pre-Experimental one group pre test-post test design

O1 X O2

O1 – Pre test to assess the levels of knowledge and attitude regarding lifestyle modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center.

X – Health promotion program.

O2 – Post test to assess the levels of knowledge and attitude regarding lifestyle modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center.

SETTING OF THE STUDY:

The study was conducted at Sri Narayani Hospital and Research Center, Vellore.

POPULATION:

The populations selected for the study are the patients who are diagnosed as diabetes mellitus for the first time.

SAMPLES:

The patients who are diagnosed as diabetes mellitus for first time at SNHRC as outpatient.

SAMPLING TECHNIQUE:

Non-Probability, purposive sampling technique was used for the study.

SAMPLE SIZE:-

30 samples are selected for the study based on inclusion and exclusion criteria.

CRITERIA FOR THE STUDY:-**Inclusion criteria:-**

Patients who

- are attending master health checkup, or other OPD's(medical & surgical).
- first time diagnosed as diabetes mellitus.
- able to understand and communicate in Tamil or English.
- willing to participate in the study.
- both male and female.

Exclusion criteria:-

Patients who have

- cognitive impairment.
- hearing and visual impairment.
- gestational diabetes mellitus

- been admitted in ward.
- been newly diagnosed with diabetic complications.

VARIABLES:

INDEPENDENT VARIABLES: Health Promotion Program.

DEPENDENT VARIABLES: Levels of knowledge and attitude regarding lifestyle modification.

DESCRIPTION AND DEVELOPMENT OF THE INSTRUMENT

A search of literature was made for the purpose of developing appropriate tool for assessing knowledge and attitude regarding life style modification on diabetes mellitus.

Structured questionnaire for knowledge and for attitude was developed by the investigator. It was validated by 5 expert researchers and suggestions are accepted and corrected.

In this study the instrument consists of 3 sections.

SECTION - A

Deals with demographic variables, such as age, gender, religion, marital status, educational status, occupation, monthly income, type of family, type of work, residential area, dietary pattern, habit, any family history of diabetes mellitus, previous knowledge on diabetes mellitus, sources of information.

SECTION - B

It consists of structured interview schedule to assess knowledge regarding life style modifications among patients with diabetes mellitus. It has 40 multiple choice questions.

Each question has 4 options out of which one is correct answer. For each correct response a score of “1”(one) and for wrong response “0”(zero) score is given. The total score is 40.

SCORES ARE INTERPRETED OF LEVELS OF KNOWLEDGE AS FOLLOWS:

LEVELS OF KNOWLEDGE	SCORES	PERCENTAGE
Adequate knowledge	27-40	67-100%
Moderate knowledge	14-26	34-66%
Inadequate knowledge	1-13	<33%

SECTION – C

It consists of five point likert scale to assess the attitude regarding life style modifications among patients with diabetes mellitus. Total score was 50.

For the positive attitude questions the score is measured as follows

Strongly agree	:	5
Agree	:	4
Uncertain	:	3
Disagree	:	2
Strongly disagree	:	1

For the negative attitude questions the score is measured as follows

Strongly agree	:	1
Agree	:	2
Uncertain	:	3
Disagree	:	4
Strongly disagree	:	5

SCORES ARE INTERPRETED OF LEVELS OF ATTITUDE AS FOLLOWS:

Levels of attitude	Scores	Percentage
Favourable attitude	35-50	69-100%
Moderately favourable attitude	18-34	35-68%
Unfavourable attitude	1-17	<34%

PILOT STUDY PROCEDURE:

A pilot study is a small replica of the main study and covers the entire process of research.

-P.Saravanel, 2000

Pilot study was conducted to assess the effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among diabetes for 1 week (14.7.2015 to 21.7.2015). Test retest method was used to check the reliability and the value is 0.83 for levels of knowledge and 0.86 for levels of attitude. It shows that study is feasible, practicable and acceptable. It was validated by 5 expert researchers and suggestions are accepted and corrected.

DATA COLLECTION:-

- Ethical clearance was obtained from college research committee members and written permission from head of institution to conduct the research at Sri Narayani Hospital and Research Center.
- The main study was conducted from (22.7.14 to 22.8.14). The patients with diabetes mellitus were informed regarding the research study and written consent was obtained initially.
- Assessment of levels of knowledge and attitude was done using structured questions prepared by investigator for patients with diabetes mellitus. Health promotion

program regarding life style modifications was given by researcher. After 2 weeks, the post test levels of knowledge and attitude was assessed regarding life style modification.

PLAN FOR DATA ANALYSIS:

- Distribution of demographic variables is analyzed by Descriptive statistics (Mean, standard Deviation).
- To find out the effectiveness of health promotion program on levels of knowledge and attitude among patient with diabetes mellitus, the inferential statistics (paired ‘t’ test) is used.
- To find out the association between the post test levels of knowledge, attitude and selected demographic variables, the inferential statistics (‘chi’ square test) is used.

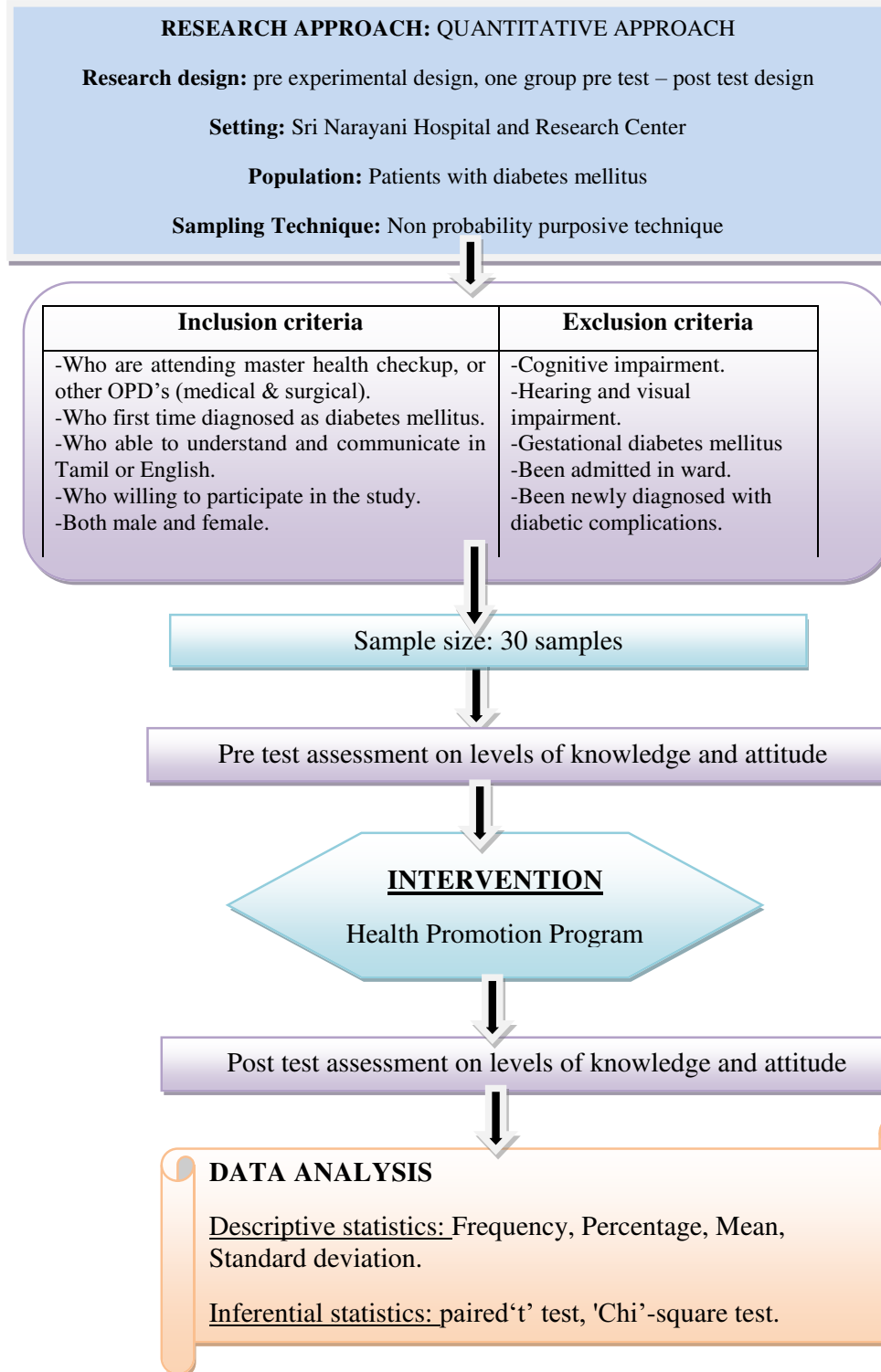


FIGURE 2: SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

Data was obtained on the effectiveness health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center, Vellore

The demographic variables were coded and analyzed. Analysis and interpretation was done with the help of descriptive and inferential statistics to meet the objectives of the study. This chapter includes four sections. The results and analysis are presented in the following order.

ORGANIZATION OF DATA:

SECTION A: Distribution of demographic variables of patients with diabetes mellitus

SECTION B: Effectiveness of health promotion program on levels of knowledge regarding life style modifications among patients with diabetes mellitus.

SECTION C: Effectiveness of health promotion program on levels of attitude regarding life style modifications among patients with diabetes mellitus.

SECTION D: Association between levels of knowledge and demographic variable regarding life style modification among patients with diabetes mellitus.

SECTION E: Association between levels of attitude and demographic variable regarding life style modification among patients with diabetes mellitus.

SECTION A: DISTRIBUTION OF DEMOGRAPHIC VARIABLES OF PATIENTS WITH DIABETES MELLITUS

Table 1: Frequency and Percentage distribution according to age of patients with diabetes mellitus.

n=30

Age (in years)	Frequency	Percentage
	No	%
30 & below	3	10%
31-40 years	9	30%
41-50 years	13	43%
51 & above	5	17%

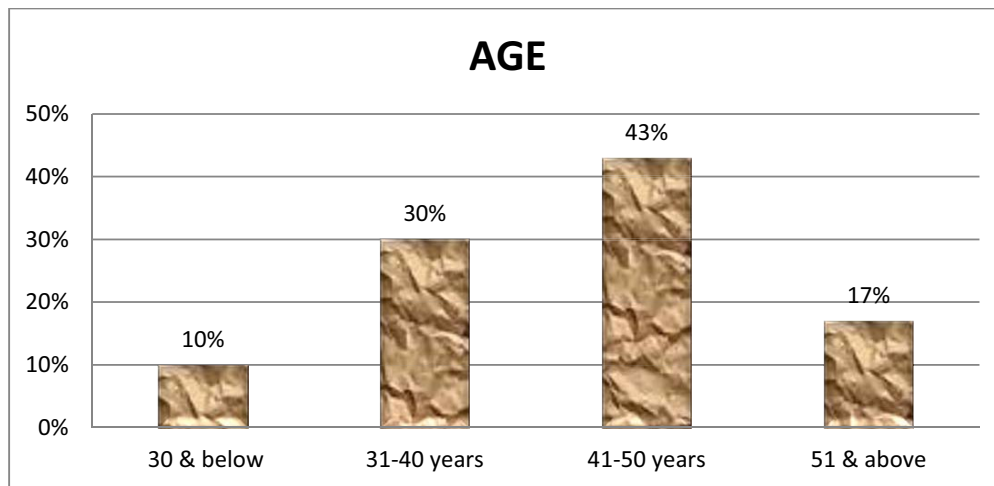


Figure 3: Bar graph shows frequency and percentage distribution according to age of patients with diabetes mellitus.

The Table 1 & Figure 3 depicts that 13(43%) patients with diabetes are in age between 41-50 yrs, 9(30%) are between 31-40 years, 5(17%) are between 51 yrs and above, and 3(10%) are between 30 years and below.

Table 2: Frequency and Percentage distribution according to gender for patients with diabetes mellitus.

n=30

Gender	Frequency	Percentage
	No	%
Male	17	57%
Female	13	43%

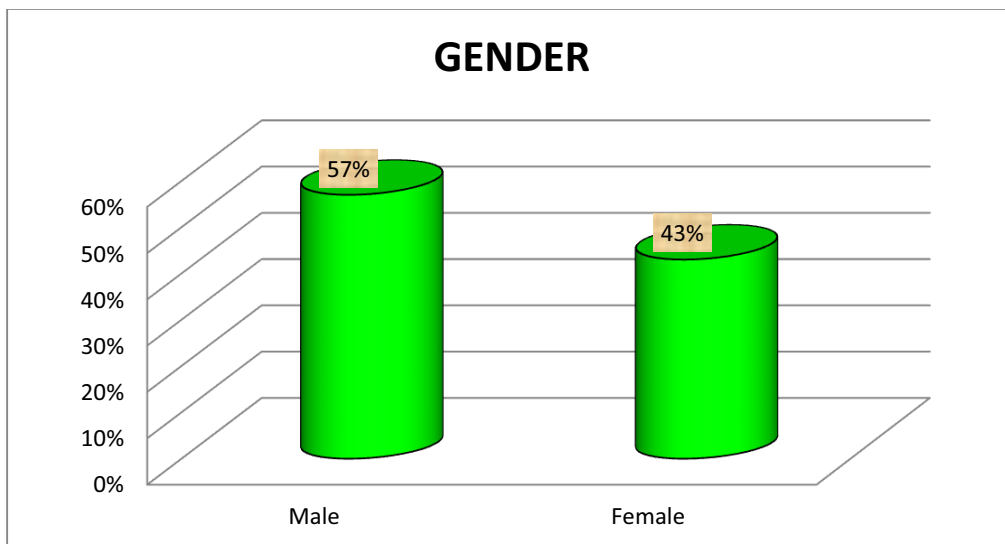


Figure 4: Cylindrical graph shows frequency and percentage distribution according to gender for patients with diabetes mellitus.

The Table 2 & Figure 4 reveals that majority of the samples were males 17(57%) and 13(43%) are female with diabetes mellitus.

Table 3: Frequency and Percentage distribution according to religion for patients with diabetes mellitus.

n=30

Religion	Frequency	Percentage
	No	%
Hindu	17	57%
Muslim	5	17%
Christian	8	26%
Others	0	0

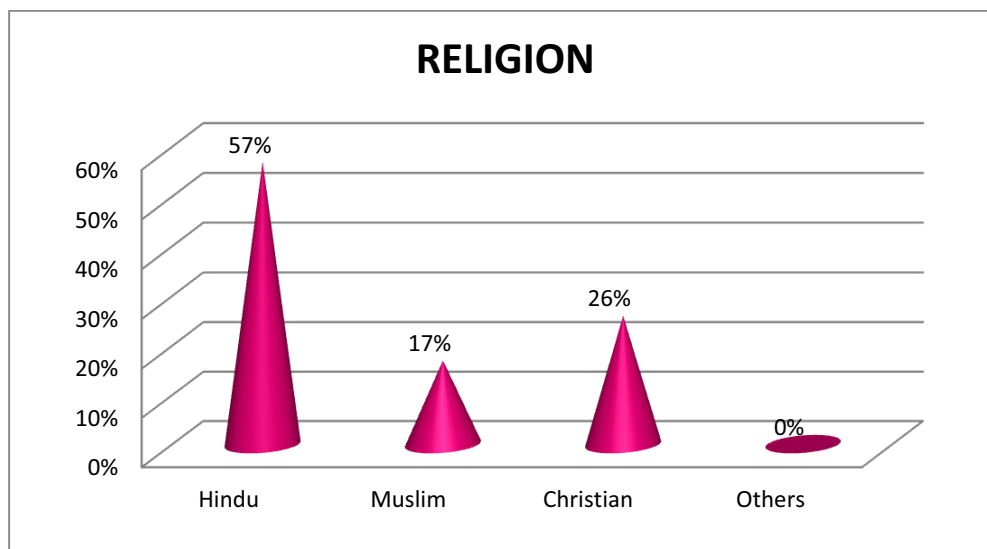


Figure 5: Cone graph shows frequency and percentage distribution according to religion for patients with diabetes mellitus.

The Table 3 & Figure 5 shows that most of them are Hindu 17(57%), 8(26%) are Christian and 5(17%) are Muslim among patients with diabetes mellitus.

Table 4: Frequency and Percentage distribution according to marital status for patients with diabetes mellitus.

n=30

Marital status	Frequency	Percentage
	No	%
Unmarried	4	13%
Married	21	71%
Separated	1	3%
Widow	4	13%
Others	0	0

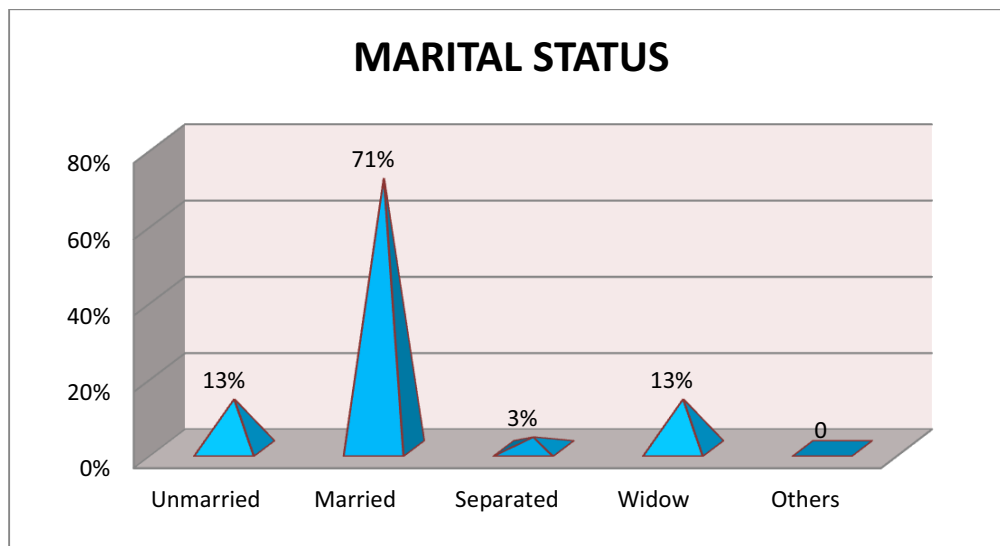


Figure 6: pyramid graph shows frequency and percentage distribution according to marital status for patients with diabetes mellitus.

The Table 4 & Figure 6 reveals that 21(71%) are married, 4(13%) are unmarried, 1(3%) are widow among patients with diabetes.

Table 5: Frequency and Percentage distribution according to educational status for patients with diabetes mellitus.

n=30

Educational status	Frequency	Percentage
	No	%
Illiterate	1	3%
Primary	9	30%
Higher secondary	17	57%
Graduate & above	3	10%

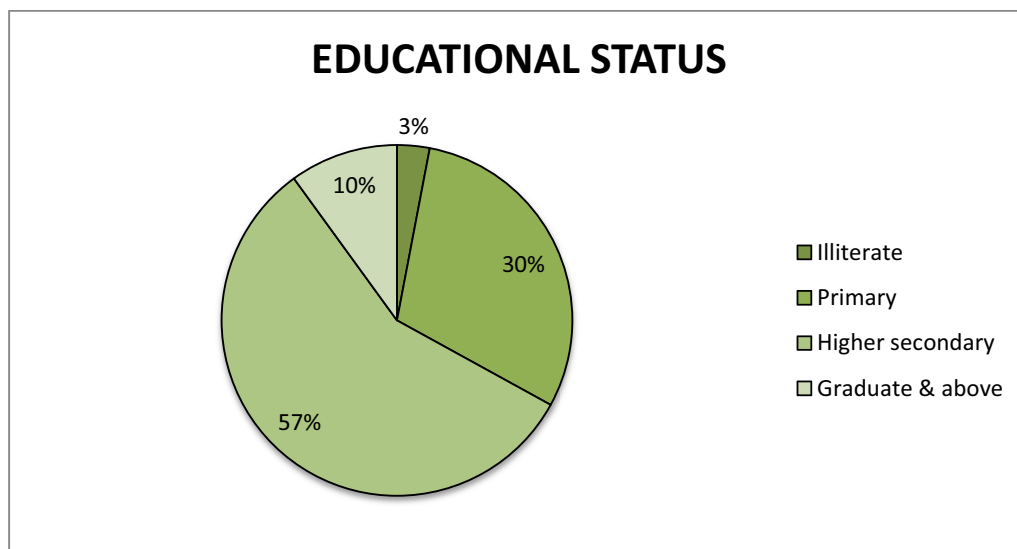


Figure 7: Pie graph shows frequency and percentage distribution according to educational status for patients with diabetes mellitus.

The Table 5 & Figure 7 depicts that 17(57%) are majority who completed higher secondary, 9(30%) completed primary school, 3(10%) completed graduate and above and 1(3%) are illiterate among patients with diabetes.

Table 6: Frequency and Percentage distribution according to occupation for patients with diabetes mellitus.

n=30

Occupation	Frequency	Percentage
	No	%
Unemployment	7	23%
Unskilled	8	26%
Semi skilled	5	17%
Skilled	7	23%
Semi professional	2	7%
Professional	1	3%

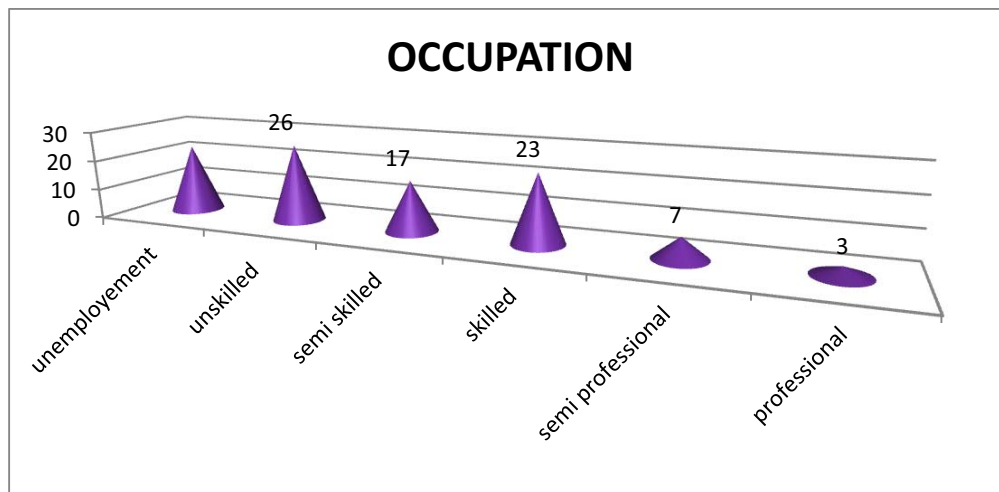


Figure 8: Cone graph shows frequency and percentage distribution according to occupation for patients with diabetes mellitus.

The Table 6 & Figure 8 depicts that 12(40%) are majority who are unskilled workers, 7(23%) are unemployed and skilled workers, 5(17%) are semi skilled workers, 2(7%) are semi professionals and 1(3%) are professional among patients with diabetes.

Table 7: Frequency and Percentage distribution according to monthly income in INR for patients with diabetes mellitus.

n=30

Monthly income in INR	Frequency	Percentage
	No	%
2500 & below	7	23%
2501 – 5000	5	17%
5001 – 7500	14	47%
Above 7500	4	13%

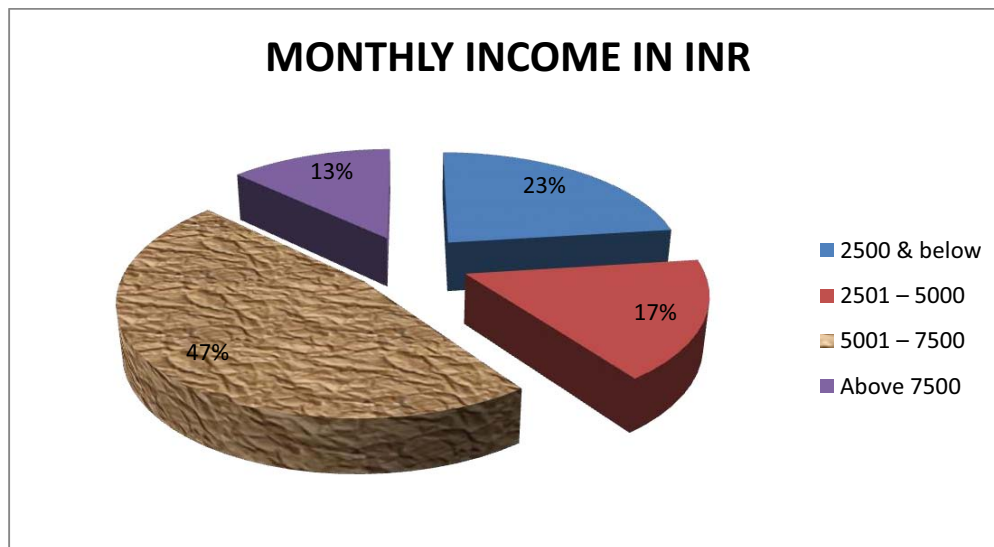


Figure 9: Pie graph shows frequency and percentage distribution according to monthly income in INR in INR for patients with diabetes mellitus.

The Table 7 & Figure 9 reveals that majority 14 (47%) of their income are rupees 5001-7500, 7(23%) of their income are 2500 & above, 5(17%) of their income are 2501 to 5000 and 4(13%) of their income are above 7500 rupees.

Table 8: Frequency and Percentage distribution according to type of family for patients with diabetes mellitus.

n=30

Type of family	Frequency	Percentage
	No	%
Nuclear	19	63%
Joint	11	37%
Extended	0	0

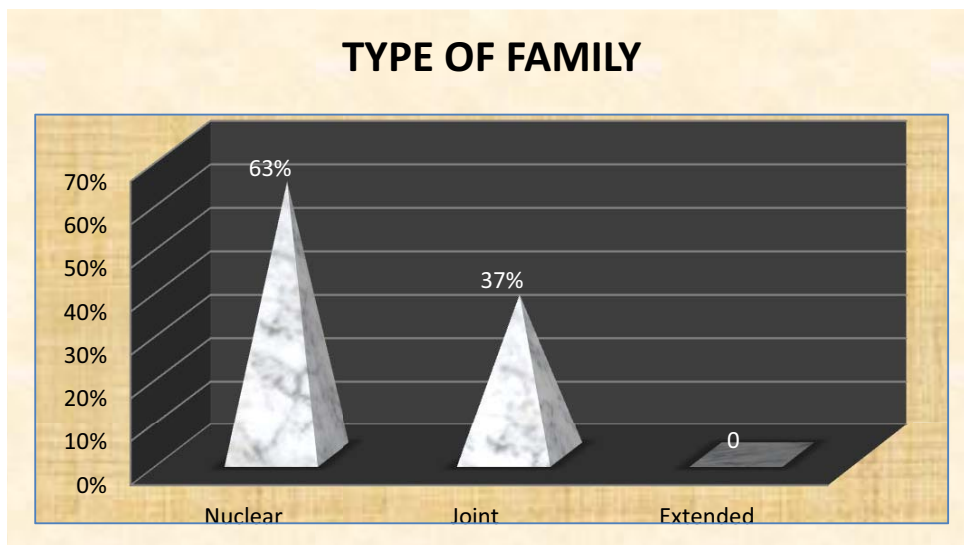


Figure 10: pyramid graph shows frequency and percentage distribution according to type of family for patients with diabetes mellitus.

The Table 8 & Figure 10 shows that 19(63%) are majority in nuclear family, 11(37%) are in joint family among patients with diabetes.

Table 9: Frequency and Percentage distribution according to residential area for patients with diabetes mellitus.

n=30

Residential area	Frequency	Percentage
	No	%
Urban	11	37%
Semi urban	6	20%
Rural	13	43%

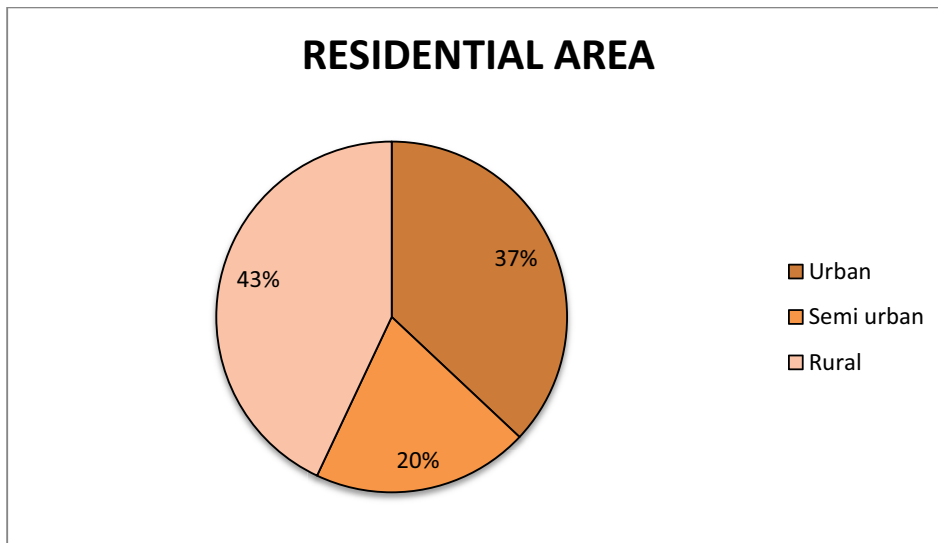


Figure 11: pie graph shows frequency and percentage distribution according to residential area for patients with diabetes mellitus.

The Table 9 & Figure 11 shows that 13(43%) are majority in rural area, 11(37%) are in urban area, 6(20%) are in semi urban area among patients with diabetes.

Table 10: Frequency and Percentage distribution according to type of food for patients with diabetes mellitus.

n=30

Type of food	Frequency	Percentage
	No	%
Vegetarian	4	13%
Mixed	26	87%

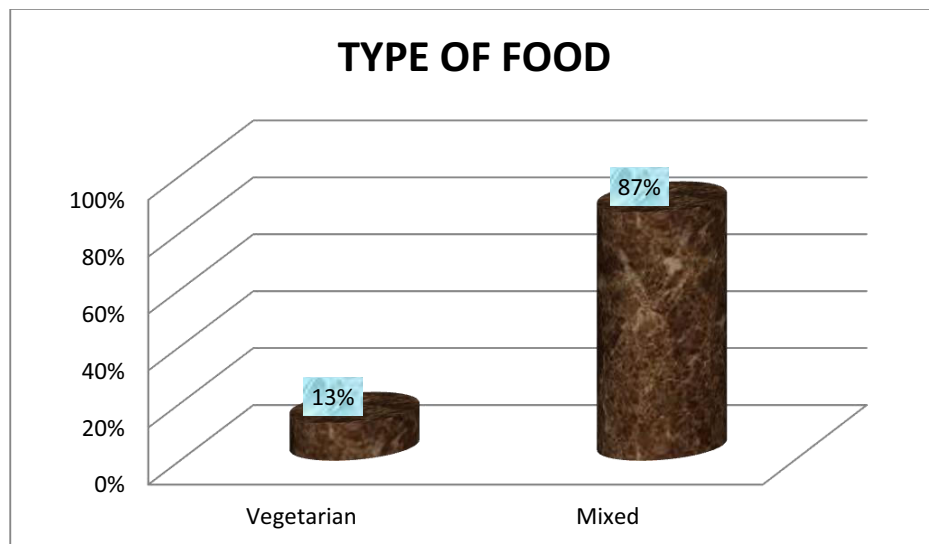


Figure 12: cylindrical graph shows frequency and percentage distribution according to type of food for patients with diabetes mellitus.

The Table 10 & Figure 12 represents that most 26(87%) of the patients with diabetes are having mixed type of food and 4(13%) are vegetarian.

Table 11: Frequency and Percentage distribution according to family history for diabetes mellitus for patients with diabetes mellitus.

n=30

Any family history of diabetes mellitus	Frequency	Percentage
	No	%
Yes	5	17%
No	25	83%

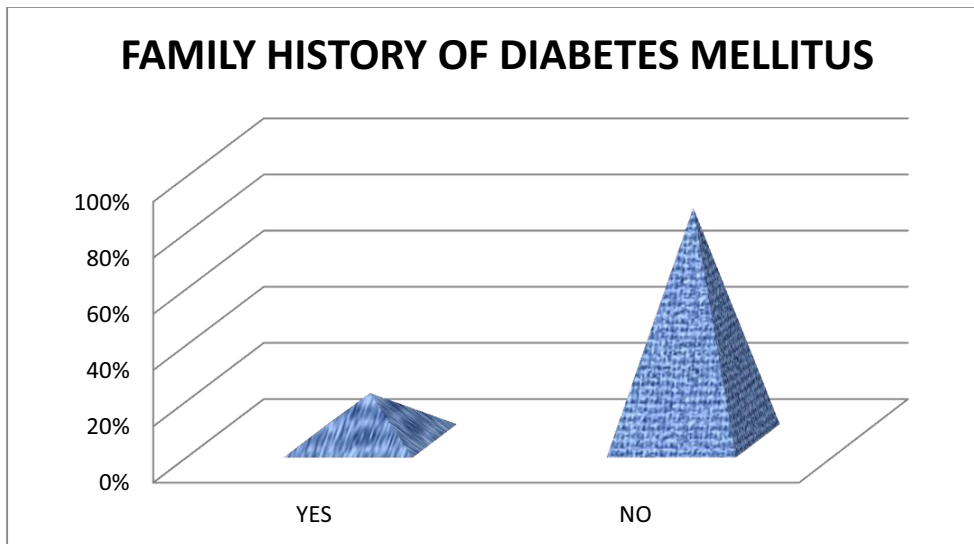


Figure 13: pyramid graph shows frequency and percentage distribution according to family history of diabetes mellitus for patients with diabetes mellitus.

The Table 11 & Figure 13 depicts that 25(83%) are have family history of diabetes mellitus and 5(17%) are not having family history of diabetes mellitus.

Table 12: Frequency and Percentage distribution according to previous knowledge on diabetes mellitus for patients with diabetes mellitus.

n=30

Previous knowledge on diabetes mellitus	Frequency	Percentage
	No	%
Yes	4	13%
No	26	87%

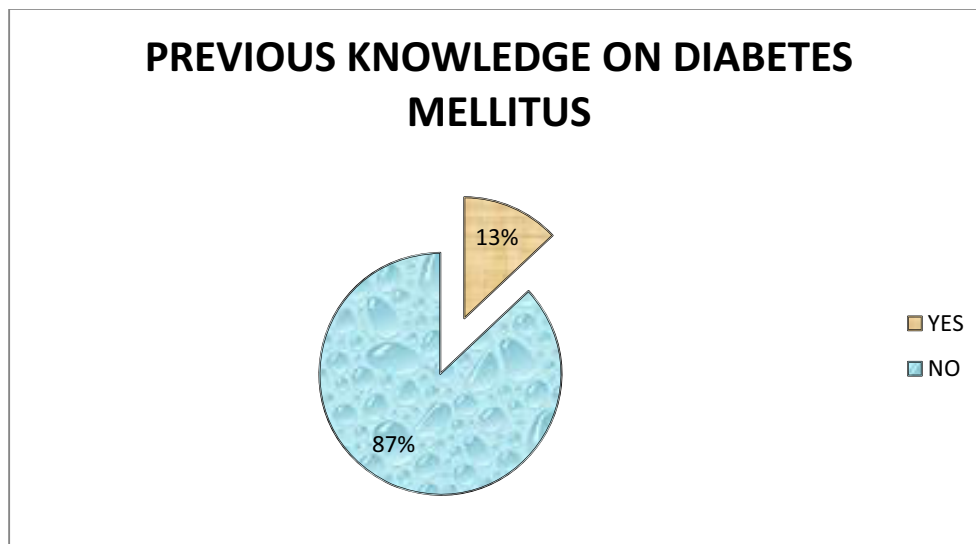


Figure 14: pie graph frequency and percentage distribution according to previous knowledge on diabetes mellitus for patients with diabetes mellitus.

The Table 12 & Figure 14 shows that 26(87%) are not have previous knowledge on diabetes mellitus and 4(13%) are having previous knowledge on diabetes mellitus.

Table 13: Frequency and Percentage distribution according to sources of information for patients with diabetes mellitus.

n=4

If yes, sources of information	Frequency	Percentage
	No	%
Health personals	1	25%
Mass media	0	0
Family members / friends	3	75%
Any other sources	0	0

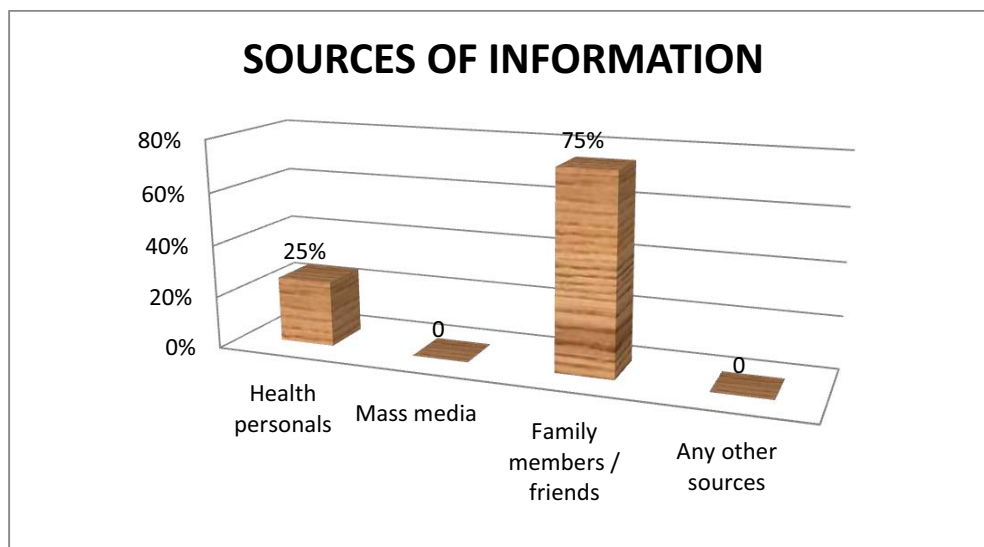


Figure 15: Bar graph shows frequency and percentage distribution according to sources of information for patients with diabetes mellitus.

The Table 13 & Figure 15 represents that 3(75%) of them gains knowledge via family members/friends and 1(25%) gains via health personals.

SECTION B: EFFECTIVENESS OF HEALTH PROMOTION PROGRAM ON LEVELS OF KNOWLEDGE REGARDING LIFE STYLE MODIFICATIONS AMONG DIABETES MELLITUS.

Table 14: Effectiveness of health promotion program on levels of knowledge regarding life style modifications among patients with diabetes mellitus.

n=30

LEVELS OF KNOWLEDGE	MEAN	STANDARD DEVIATION	MEAN DIFFERENCE	PAIRED 't' TEST
Pre test	15.8	7.34	16.2	14
Post test	32	3.31		

Note* *statistically significant (p<0.001)

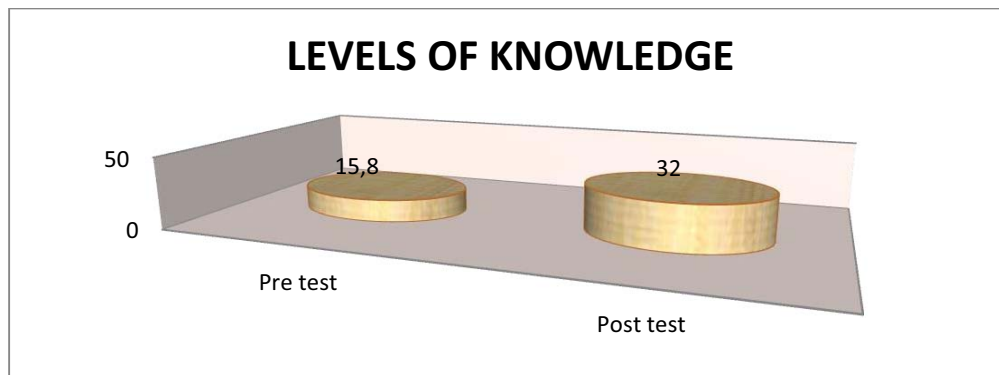


Figure 16: Cylindrical graph shows the effectiveness of health promotion program on levels of knowledge regarding life style modifications among patients with diabetes mellitus.

The Table 14 & Figure 16 shows that pre test mean value is 15.8. After health program the post test mean value is 32. The 't' value is greater than that of the table value (3.66) at (p<0.001) level. Hence H₁ was accepted.

SECTION C: EFFECTIVENESS OF HEALTH PROMOTION PROGRAM ON LEVELS OF ATTITUDE REGARDING LIFE STYLE MODIFICATIONS AMONG DIABETES MELLITUS.

Table 15: Effectiveness of health promotion program on levels of attitude regarding life style modifications among patients with diabetes mellitus.

n=30

LEVELS OF ATTITUDE	MEAN	STANDARD DEVIATION	MEAN DIFFERENCE	PAIRED 't' TEST
Pre test	28	5.5	13	14
Post test	41	3.5		

Note**statistically significant ($p < 0.001$)

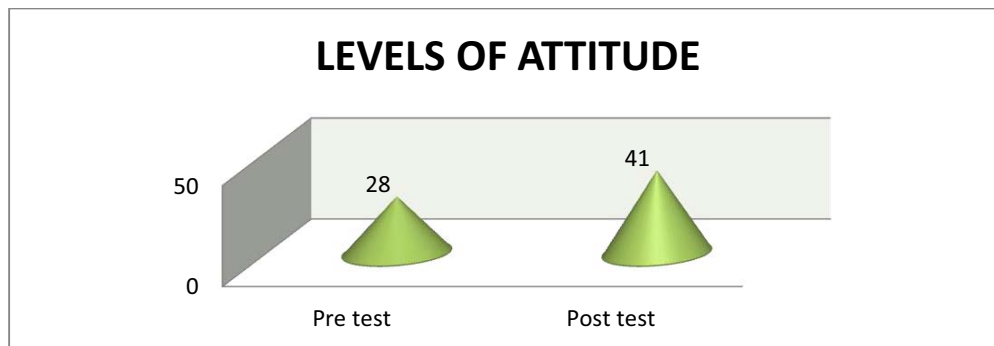


Figure 17: Cone graph shows the effectiveness of health promotion program on levels of attitude regarding life style modifications among patients with diabetes mellitus.

The Table 15 & Figure 17 shows that pre test mean value is 28. After health program the post test mean value is 41. The 't' value is greater than that of the table value (3.66) at ($p < 0.001$) level. Hence H_2 was accepted.

SECTION D: ASSOCIATION BETWEEN LEVELS OF KNOWLEDGE AND DEMOGRAPHIC VARIABLES REGARDING LIFE STYLE MODIFICATION AMONG PATIENTS WITH DIABETES MELLITUS.

Table 16: Association between levels of knowledge and demographic variables of patients with diabetes mellitus.

n=30

DEMOGRAPHIC VARIABLES	SAMPLE (n)		LEVELS OF KNOWLEDGE SCORES						'chi'Square χ^2 Value
	n	%	Inadequate		Moderate		Adequate		
			NO	%	NO	%	NO	%	
1.Age in years									
30 & below	3	10%	-	-	1	33	2	67	12.59* S
31-40 years	9	30%	-	-	-	-	9	100	
41-50 years	13	43%	-	-	-	-	13	100	
51 & above	5	17%	-	-	-	-	5	100	
2.Gender									
Male	17	57%	-	-	-	-	17	100	5.99* S
Female	13	43%	-	-	1	8	12	92	
3.Religion									
Hindu	17	57%	-	-	1	6	16	94	12.59* S
Muslim	5	17%	-	-	-	-	5	100	
Christian	8	26%	-	-	-	-	8	100	
Others	0	0	-	-	-	-	-	-	
4.Marital status									
Unmarried	4	13%	-	-	-	-	4	100	15.51 NS
Married	21	71%	-	-	1	5	20	95	
Separated	1	33%	-	-	-	-	1	100	
Widow	4	13%	-	-	-	-	4	100	
Others	0	0	-	-	-	-	-	-	

Association between levels of knowledge and demographic variables of patients with diabetes mellitus – cont.										
5.Educational status										12.59* S
Illiterate	1	3%	-	-	-	-	1	100		
Primary	9	30%	-	-	-	-	9	100		
Higher secondary	17	57%	-	-	1	6	16	94		
Graduate & above	3	10%	-	-	-	-	3	100		
6.Occupation										18.31* S
Unemployment	8	27%	-	-	-	-	7	100		
Unskilled worker	12	40%	-	-	-	-	8	100		
Semi skilled	0	0	-	-	-	-	5	100		
Skilled	7	23%	-	-	1	14	6	86		
Semi professional	2	7%	-	-	-	-	2	100		
Professional	1	3%	-	-	-	-	1	100		
7.Monthly income in INR										12.59 NS
2500 & below	7	23%	-	-	-	-	7	100		
2501-5000	5	17%	-	-	-	-	5	100		
5001-7500	14	47%	-	-	-	-	14	100		
Above 7500	4	13%	-	-	1	25	3	75		
8.Type of family										9.49 NS
Nuclear	19	63%	-	-	-	-	19	100		
Joint	11	37%	-	-	1	9	10	91		
Extended	0	0	-	-	-	-	-	-		
9.Residential area										9.49* S
Urban	11	37%	-	-	-	-	11	100		
Semi urban	6	20%	-	-	-	-	6	100		
Rural	13	43%	-	-	1	8	12	92		
10.Type of food										5.99 NS
Vegetarian	4	13%	-	-	-	-	4	100		
Mixed	26	87%	-	-	1	4	25	96		

Association between levels of knowledge and demographic variables of patients with diabetes mellitus – cont.										
11.Any family history of diabetes mellitus										5.99 NS
Yes	5	17%	-	-	-	-	5	100		
No	25	83%	-	-	1	4	24	96		
12.previous knowledge on diabetes mellitus										5.99 NS
Yes	4	13%	-	-	-	-	4	100		
No	26	87%	-	-	1	4	25	96		
13.If yes, sources of information										12.59* S
Health personnels	1	25%	-	-	-	-	1	100		
Mass media	0	0	-	-	-	-	-	-		
Family members/friends	3	75%	-	-	-	-	3	100		
Any other sources	0	0	-	-	-	-	-	-		

Note: S = Significant *= P<0.05, NS=Not significant.

INTERPRETATION:

Table 16 Shows ‘chi’ square values of selected demographic variables on post test levels of knowledge regarding life style modification among patients with diabetes mellitus.

The ‘chi’-square value of demographic variables like age, gender, religion, educational status, occupation, residential area, sources of information are Significant at p <0.05 level. Whereas marital status, monthly income in INR, type of family, type of food, family history of diabetes mellitus, previous knowledge on diabetes mellitus are non significant. Hence H 3 was accepted.

SECTION E: ASSOCIATION BETWEEN LEVELS OF ATTITUDE AND DEMOGRAPHIC VARIABLE REGARDING LIFE STYLE MODIFICATION AMONG PATIENTS WITH DIABETES MELLITUS.

Table 17: Association between levels of attitudes and demographic variable of patients with diabetes mellitus.

n=30

DEMOGRAPHIC VARIABLE	SAMPLE (n)		LEVELS OF ATTITUDE SCORES						'chi' Square χ^2 Value
	n	%	UNFAVOURABLE		MODERATELY FAVOURABLE		FAVOURABLE		
			NO	%	NO	%	NO	%	
1.Age in years									12.59 NS
a.30 & below	3	10%	-	-	-	-	3	100	
b.31-40 years	9	30%	-	-	-	-	9	100	
c.41-50 years	13	43%	-	-	-	-	13	100	
d.51 & above	5	17%	-	-	-	-	5	100	
2.Gender									5.99 NS
a.Male	17	57%	-	-	-	-	17	100	
b.Female	13	43%	-	-	-	-	13	100	
3.Religion									12.59 NS
a.Hindu	17	57%	-	-	-	-	17	100	
b.Muslim	5	17%	-	-	-	-	5	100	
c.Christian	8	26%	-	-	-	-	8	100	
d.Others	0	0	-	-	-	-	-	-	
4.Marital status									15.51 NS
a.Unmarried	4	13%	-	-	-	-	4	100	
b.Married	21	71%	-	-	-	-	21	100	
c.Separated	1	33%	-	-	-	-	1	100	
d.Widow	4	13%	-	-	-	-	4	100	
e.Others	0	0	-	-	-	-	-	-	

Association between levels of attitudes and demographic variable of patients with diabetes mellitus- cont.										
5.Educational status										
a.Illiterate	1	3%	-	-	-	-	1	100	12.59 NS	
b.primary	9	30%	-	-	-	-	9	100		
c.Higher secondary	17	57%	-	-	-	-	17	100		
d.Graduate & above	3	10%	-	-	-	-	3	100		
6.Occupation										
a.Unemployment	8	27%	-	-	-	-	7	100	18.31 NS	
b.Unskilled worker	12	40%	-	-	-	-	8	100		
c.Semi skilled	0	0	-	-	-	-	5	100		
d.Skilled	7	23%	-	-	-	-	7	100		
e.Semi professional	2	7%	-	-	-	-	2	100		
f.Professional	1	3%	-	-	-	-	1	100		
7.Monthly income in INR										
a.2500 & below	7	23%	-	-	-	-	7	100	12.59 NS	
b.2501-5000	5	17%	-	-	-	-	5	100		
c.5001-7500	14	47%	-	-	-	-	14	100		
d.Above 7500	4	13%	-	-	-	-	4	100		
8.Type of family										
a.Nuclear	19	63%	-	-	-	-	19	100	9.49 NS	
b.Joint	11	37%	-	-	-	-	11	100		
c.Extended	0	0	-	-	-	-	-	-		

Association between levels of attitudes and demographic variable of patients with diabetes mellitus – cont.										
9.Residential area										
a.Urban	11	37%	-	-	-	-	11	100	9.49 NS	
b.Semi urban	6	20%	-	-	-	-	6	100		
c.Rural	13	43%	-	-	-	-	13	100		
10.Type of food										
a.Vegetarian	4	13%	-	-	-	-	4	100	5.99 NS	
b.Mixed	26	87%	-	-	-	-	26	100		
11.Any family history of DM										
a.Yes	5	17%	-	-	-	-	5	100	5.99 NS	
b.No	25	83%	-	-	-	-	25	100		
12.Previous knowledge on diabetes mellitus										
a.Yes	4	13%	-	-	-	-	4	100	5.99 NS	
b.No	26	87%	-	-	-	-	26	100		
13.If yes, sources of information										
a.Health personnels	1	25%	-	-	-	-	1	100	12.59 NS	
b.Mass media	0	0	-	-	-	-	-	-		
c.Family members/friend	3	75%	-	-	-	-	3	100		
d.Any other sources	0	0	-	-	-	-	-	100		

Note: S = Significant *= P<0.05, NS=Not significant.

INTERPRETATION:

Table 16 Shows 'chi' square values of selected demographic variables on post test levels of attitude regarding life style modification among patients with diabetes mellitus.

The 'chi'-square value of demographic variables like age, gender, religion, marital status, education, occupation, monthly income in INR, residential area, type of family, type of food, any family history of DM, previous knowledge on DM, Sources of information are Non Significant at p level <0.05 level . Hence H 4 was rejected.

CHAPTER V

DISCUSSION

The present study was designed to evaluate the effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center (SNHRC), Vellore. The research design used was pre experimental, one group pre and posttest design. Non probability, purposive sampling was adopted to select 30 samples. Structured questionnaire was used to assess levels of knowledge and attitude regarding life style modification. Pre test conducted to study samples, then administered health promotion program regarding life style modification. The post test was conducted by the researcher after 2 weeks.

The first objective of the study was to assess the pre test levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus.

The data identified from the present study shows that the pre test mean value of knowledge was 15.8 and pre test mean value of attitude was 28 regarding life style modifications. Where it shows that the levels of knowledge and attitude decreased among patient with diabetes mellitus.

This study finding was supported by **VASUDEVAN. N(2013)** where he assessed the levels of knowledge regarding life style modification among patients with diabetes mellitus attending diabetic OPD, RMMCH, Annamalai university. 50 patients with diabetes were selected by using convenience sampling technique. Pre test was conducted using a structured interview questionnaire. Structured teaching program was conducted by using power point presentation programme. His study

revealed that 36(72%) had inadequate knowledge and 14(28%) had moderately adequate knowledge in pre test. After 25 (50%) had moderately adequate knowledge and 25(50%) had adequate knowledge. The paired 't' test was applied to compare pre test and post test mean and standard deviation. It was found that knowledge level of patient was statistically significant($p>0.001$).

The study was supported by **SARUNGBAM SARJI DEVI (2012)** where he assessed the levels of attitude among patient with diabetes mellitus. A quantitative research approach using quasi experimental research design (one group pre test – post test) was adopted for the study. A study was carried out 35 diabetes patients at MMIMSR & hospital, Mullana, Ambala. likert scale were used to collect data. The observed that the mean post test attitude score (25.28) was significantly higher than the mean pre test attitude score (9.17). Therefore, it is concluded that pre test score is lower which supports the present study.

Researcher observed that levels of knowledge and attitude regarding life style modification among diabetes patients are less in pre test.

The second objective of the study was to determine the effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus.

Data identified from the present study shows that health promotion program on levels of knowledge and attitude regarding life style modification was effective among diabetes patients.

This study was also supported by **SHRESTHA(2010)** where he assessed the life style changes on prevention of risk for developing it diabetic complications. Randomized intervention studies have shown that changes in diet and physical

activity can protect against diabetes complications. Effectiveness of a lifestyle intervention programme on glucose tolerance in Dutch subjects with impaired glucose tolerance (IGT) was undertaken. A total of 102 subjects were selected and randomized into two groups. Subjects in the intervention group received regular dietary advice and were stimulated to lose weight and to increase their physical activity. The control group received only brief information about the beneficial effects of a healthy diet and increased physical activity. Body weight loss after 1 year was higher in the intervention group. The 2h blood glucose concentration decreased 0.8 ± 0.3 mmol/l in the intervention group and increased 0.2 ± 0.3 mmol/l in the control group ($P < 0.05$). Body weight loss and increased physical fitness were the most important determinants of improved glucose tolerance and insulin sensitivity. Study suggested that lifestyle intervention programme according to general recommendations is effective and induces beneficial changes in lifestyle, which improve glucose tolerance in subjects with IGT. Body weight loss and increased physical fitness were the most important determinants of improved glucose tolerance and insulin sensitivity.

This study was also supported by **LEE JK 2014** where he conducted a study on Effects of a coaching program on comprehensive lifestyle modification for women with diabetes mellitus. The research design for this study was a non-equivalent control group quasi-experimental study. Participants in this study were 34 for the control group and 34 for the experimental group. The experimental group participated in the Coaching Program on Comprehensive Lifestyle Modification. The program consisted of education, small group coaching and telephone coaching over 4 weeks. Group 1 (n = 43) and Group 2-standard care group (n = 32). There were significant improvements ($p < 0.05$) in self-care behavior, and decreases in

depression, fasting blood sugar and HbA1C in the experimental group compared to the control group. However, no significant differences were found between the two groups for knowledge of diabetes mellitus. The Coaching Program on Comprehensive Lifestyle Modification used in this study was found to be effective in improving self-care behavior and reducing depression, fasting blood sugar and HbA1C, and is recommended for use in clinical practice as an effective nursing intervention for women with diabetes.

The third objective of the study was to determine the association between post test levels of knowledge and attitude regarding life style modification and selected demographic variables among patients with diabetes mellitus.

The data identified from the present study shows that the chi square values of selected demographic variables on post test levels of knowledge about effectiveness of health promotion program among patient with diabetes mellitus shows age, gender, religion, educational status, occupation, residential area, sources of information was associated, at level $p < 0.05$. Whereas the demographic variable like, marital status, monthly income in INR, type of family, type of food, any family history of diabetes mellitus, previous knowledge are non significant.

The 'chi' square values of selected demographic variables on post test levels of attitude about effectiveness of health promotion program among patient with diabetes mellitus shows age, gender, religion, marital status, educational status, occupation, Monthly income in INR, type of family, residential area, type of food, any family history of diabetes mellitus, previous knowledge and sources of information are non significant at 'p' < 0.05 level.

This study finding was supported by **GEORGE (2011)** where he assessed the levels of knowledge and attitude. The research approach selected for the study was the

evaluating approach. The research design included pre test and post test. Independent variable in the study was structured teaching programme and dependent variables were knowledge and attitude scores. The tool developed and used for data collection was structured interview schedule on diabetes life style modifications.

The pre test knowledge mean score found to be 19.21 as compared to post test mean score of 40.02. Further the enhancement of mean knowledge score was found to be 30.01. However, the statistical paired 't' test indicate the enhancement of knowledge and was found to be highly significant($t=95.60^*$, $p<0.01$) revealing the effectiveness of STP on diabetic life style modification. And the pre test attitude score was found to be 34.10 compared to post test mean score of 62.01. However, the enhancement of attitude score was found to be 27.92. The paired't' test reveals the enhancement attitude mean score was found to be significant ($t=122.41^*$, $p<0.01$) indicating the effectiveness of STP on diabetes life style modification.

CHAPTER - VI

SUMMARY AND RECOMMENDATIONS

In this chapter, the summary of the study, conclusions, implications and recommendations for further researches are presented.

A. SUMMARY OF THE STUDY

The study was conducted to determine effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus at SNHRC, Vellore. A Pre-Experimental one group pre test-post test design was used for this study. The conceptual framework of this research was based on modified Kolcaba's theory of comfort. The instrument used for data collection was a structured question to assess the levels of knowledge and attitude of the samples which included a pre test and post test measure regarding life style modification. 30 samples were selected by purposive sampling technique. Descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (paired 't' test and chi-square) were used to analyze the data to test the study hypotheses.

THE STUDY FINDINGS SUMMARIZED BELOW:

The effectiveness of health promotion program on life style modification assessed by comparing Pre and Post tests scores. Finding of the study showed that the pre test mean value was 15.8 and after health promotion program the post test mean value was 32. The mean difference was 16.2 for levels of knowledge. The computed "t" value (t=14) was higher than the table value (3.66). This shows that health promotion program was effective in improving levels of knowledge regarding life style modification among patients with diabetes mellitus. The 'chi' square values of selected demographic variables on post test levels of knowledge about effectiveness of health promotion program among patients with diabetes mellitus shows age, gender, religion, educational status, occupation, residential

area, sources of information as significant, at level $p < 0.05$, whereas the demographic variable like, marital status, Monthly income in INR, type of family, type of food, any family history of diabetes mellitus, previous knowledge are non significant.

The pre test mean value was 28 and after health promotion program the post test mean value was 41. The mean difference was 13 for levels of attitude. The computed 't' value ($t=14$) was higher than the table value (3.66). This shows that health promotion program is effective in improving levels of attitude regarding life style modification among patients with diabetes mellitus. The 'chi' square values of selected demographic variables on post test levels of knowledge about effectiveness of health promotion program among patient with diabetes mellitus shows age, gender, religion, marital status, educational status, occupation, Monthly income in INR, type of family, residential area, type of food, any family history of diabetes mellitus, previous knowledge and sources of information are non significant.

B.CONCLUSION

The majority of the patients undergoing health promotion program showed improvement in levels of knowledge regarding life style modification. Based on the study finding, there was significant increase in the levels of knowledge among patients with diabetes.

The majority of the patients undergoing health promotion program showed improvement in levels of attitude regarding life style modification. Based on the study finding, there was significant increase in the levels of attitude among patients with diabetes. The finding of the study was consistent with the review of literature supports. The findings may be generalized to the patients with diabetes mellitus.

C. NURSING IMPLICATIONS:

The findings of the study have implications in the field of Nursing Practice, Nursing

Education, Nursing Administration and Nursing Research.

NURSING PRACTICE:

- Staff nurses can be trained to assess the patients and provide health education program.
- Staff nurses can be motivated for routine documentation of patient's condition after implementation of life style modification program.
- Staff nurses can be trained as a diabetic educator.

NURSING EDUCATION:

- The practice and benefits of health promotion program regarding life style modification could be introduced in the curriculum and procedure manual.
- Nurse educators can conduct in-service education on life style modification on diabetes mellitus to staff nurses.

NURSING ADMINISTRATION:

- Nurse administrator can formulate policies and protocols on educating about life style modification to all patients with diabetes.

NURSING RESEARCH:

- Future studies can be conducted on effect of health promotion program regarding prevention of diabetic complication among patients with diabetes mellitus.

D. RECOMMENDATIONS FOR FURTHER RESEARCH

On the basis of the study that had been conducted, suggestions are given for future studies:

- A similar study can be replicated on a subject with different demographic characteristics in different settings.
- A comparative study can be done on rural and urban patients.
- A similar study can conducted with large sample.

- A study can be conducted to evaluate the life style intervention program on patient with diabetes mellitus complication such as diabetic nephropathy, neuropathy, and retinopathy.
- Counseling programme based on diabetics life style modification can be developed.
- A study can be conducted to evaluate the foot ulcer prevention on patient with diabetes mellitus and foot ulcer.

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APPENDIX - A

Om Namo Narayani



**SRI NARAYANI COLLEGE
OF NURSING**

(A Unit of Sri Narayani Hospital & Research Centre)
Sripuram, Thirumalaikodi, Vellore - 632 055.
Vellore District, Tamilnadu. India.



Dr. N.BALAJI, Ph.D., FIMSA, FACSc.
Director

04.07.2015

To,

Dr. Aravindan Nair, M.S,M.N,A.M.S.,
The Medical Superintendent,
Sri Narayani Hospital and Research Centre,
Vellore.

Respected Sir,

Sub: Permission to conduct Research Dissertation

**at Sri Narayani Hospital And Research Centre – request
regarding.**

This is for your kind notice that, **Miss. Jhansi Rani.G**, II year M.Sc Nursing student of Sri Narayani College of Nursing is doing a research dissertation on **“Effectiveness of health promotion program on levels of knowledge and attitude regarding life style modifications among patients with diabetes mellitus at Sri Narayani Hospital and Research Centre (SNHRC), Vellore”**, which is to be submitted to **The Tamil Nadu Dr.MGR Medical University**, as partial fulfillment for awarding of the degree of M.Sc(N).

Hence forth, I request your good selves to accord permission for data collection at SNHRC.

Kindly do the needful.

Thanking you,

Yours faithfully,

Jitav
PRINCIPAL

PRINCIPAL

SRI NARAYANI COLLEGE OF NURSING

VELLORE - 55.

Phone : 0416 - 2270225, 2270224, Fax : 0416 - 2270224

E-mail : aosnc@snhrc.org

M.S.N.
Dr. Subapriya
18/7/15

*Dr. Subapriya to
guide her students.*
A M
4/7/2015

APPENDIX-B

CERTIFICATE OF CONTENT VALIDITY

This is to certify that structured interview schedule and the demographic variables for the research study **“EFFECTIVENESS OF HEALTH PROMOTION PROGRAM ON LEVELS OF KNOWLEDGE AND ATTITUDE REGARDING LIFE STYLE MODIFICATION AMONG PATIENTS WITH DIABETES MELLITUS AT SRI NARAYANI HOSPITAL AND RESEARCH CENTER (SNHRC), VELLORE”** prepared by Ms. Jhansi Rani.G has been validated.

Name:

Designation:

Date:

Institution:

Seal and signature

Appendix – C

Letter requesting participation in the study

Dear participant,

I Ms.Jhansi Rani.G II nd year M.Sc Nursing student of Sri Narayani College of Nursing conducting “Effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center (SNHRC), Vellore”, as a partial fulfillment of my Masters Degree. In this regard I would like to administer a structured interview questionarrrie to you and I assure you that the information obtained from you will be strictly confidential and will be used for the study purpose only. I need your whole-hearted cooperation in this study to gather information and I will be grateful to you for the same.

Thanking you in anticipation,

Yours sincerely,

Ms.G.Jhansi Rani.

CONSENT

I have been informed for the purpose of the study and agree to participate in the same.

Date:

Place:

Signature of participant

Appendix – D

LIST OF EXPERTS FOR TOOL VALIDATION

1. Dr. SubaPriya, MBBS, DHM, Dip. (Diab),,

General medicine,
Medical research guide,
Sri Narayani Hospital and Research Center,
Vellore-55.
Tamil nadu.

2. Mrs. Anitha, M.Sc (N),

Professor,
Dept of Medical Surgical Nursing,
Sri Gokulam College of Nursing,
Salem,
Tamil nadu

3. Mrs. Lizy Sonia.A, M.Sc (N),

Professor,
HOD of Medical Surgical Nursing,
Apollo College of Nursing,
Chennai,
Tamil nadu.

4. Mrs.Jaslina, M.Sc (N),

Reader,
Dept of Medical Surgical Nursing,
Apollo College of Nursing,
Chennai,
Tamil nadu.

5. Mr. Muthurathinum, M.Sc,Biostatistics


Biostatistician,
Sri Narayani College of Nursing,
Vellore.
Tamil nadu.

Appendix -E

CERTIFICATION OF ENGLISH EDITING

To whomsoever it may concern

This is to Certify that **Ms.G.Jhansi Rani**, II M.Sc Nursing, Department of Medical Surgical Nursing has to conduct the dissertation for the partial fulfillment of Degree course **“Effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center (SNHRC), Vellore”** has been edited by me in English language.



SIGNATURE 21.12.2015
A. ARULRAJ, M.A., B.Ed., M.Phil.,
B. T. Aest. in English
Govt. High School,
Munjurpet - 632 011, Vellore Dist.,

Appendix - F

CERTIFICATION OF TAMIL EDITING

To whomsoever it may concern

This is to Certify that **Ms.G.Jhansi Rani**, II M.Sc Nursing, Department of Medical Surgical Nursing has to conduct the dissertation for the partial fulfillment of Degree course “**Effectiveness of health promotion program on levels of knowledge and attitude regarding life style modification among patients with diabetes mellitus at Sri Narayani Hospital and Research Center (SNHRC), Vellore**” has been edited by me in Tamil language.


ஜெ. ஜெனிவா, எம்.எ., பி.எட்., எம்.பி.எல்.,
தமிழ் திருநெல்வேலி
SIGNATURE
அரசினர் உயர்நிலைப் பள்ளி
மூஞ்சூர்பட்டு, வேலூர் - 632 057

Appendix – G

Data collection instrument - English

Demographic Variables

1 AGE

1.1. Below 30 years

1.2. 31-40 years

1.3. 41-50 years

1.4. 51 & above

2 GENDER

2.1. Male

2.2. Female

3 RELIGION

3.1. Hindu

3.2. Muslim

3.3. Christian

3.4. Others

4 MARITAL STATUS

4.1. Unmarried

4.2. Married

4.3. Separated

4.4. Widow

4.5. Others

5 EDUCATIONAL STATUS

- 5.1. Illiterate
- 5.2. Primary
- 5.3. Higher Secondary
- 5.4. Graduate and above

6 OCCUPATION

- 6.1. Unemployment
- 6.2. Unskilled.
- 6.3. Semi skilled.
- 6.4. Skilled worker.
- 6.5. Semi professional.
- 6.6. Professional.

7 MONTHLY INCOME

- 7.1. Below 2500
- 7.2. 2501-5000
- 7.3. 5001-7500
- 7.4. Above 7500

8 TYPE OF FAMILY

- 8.1. Nuclear
- 8.2. Joint
- 8.3. Extended

9 RESIDENTIAL AREA

- 9.1. Urban
- 9.2. Semi-urban
- 9.3. Rural

10 **DIETARY PATTERN**

10.1. Vegetarian

10.2. Mixed

11 **ANY FAMILY HISTORY OF DIABETES MELLITUS**

11.1. Yes

11.2. No

If yes, specify _____

12 **PREVIOUS KNOWLEDGE ON DIABETES MELLITUS**

12.1. Yes

12.2. No

13 **IF YES, SOURCES OF INFORMATION**

13.1. Health personnel

13.2. Mass Media

13.3. Family / Friends

13.4. Any other sources

STRUCTURED QUESTIONNAIRE

Name: _____ Ref. Dr: _____ Date: _____

HOSP NO: _____ Age: _____ Gender: M / F

Please answer the 40 questions completely, honestly, and without interruptions.

1. What is diabetes mellitus?

- 1.1. Increased blood pressure level.
- 1.2. Increased cholesterol level in blood

1.3. Increased blood sugar level

- 1.4. Increased sodium level in blood

2. What is the normal blood sugar level?

- 2.1. 30-60 mg/dl
- 2.2. 80-120 mg/dl**
- 2.3. 130-220 mg/dl
- 2.4. 230-300 mg/dl

3. What are the causes for Diabetes Mellitus?

- 3.1. Obesity.**
- 3.2. Accident.
- 3.3. Head injury.
- 3.4. Blood transfusion

4. What are the signs and symptoms of diabetes mellitus?

- 4.1. Heart burn.
- 4.2. Cough.
- 4.3. Back pain.
- 4.4. Frequent urination.**

5. Which is the appropriate diagnostic test of assessing the blood sugar level?

5.1. X-ray

5.2. Blood for sugar

5.3. Muscular test

5.4. Sputum for sugar

6. What is the aim of Diabetes Mellitus treatment?

6.1. To keep cholesterol levels as normal

6.2. To keep blood pressure level as normal

6.3. To keep hemoglobin level as normal

6.4. To keep blood sugar level as Normal

7. What is the route of administering medication for diabetes mellitus?

7.1. Oral and subcutaneous.

7.2. Eyes and nose.

7.3. Bone and skin.

7.4. Ear and head.

8. What are the complications of diabetes mellitus?

8.1. Ulcer.

8.2. Asthma.

8.3. Eye disorders.

8.4. Hair loss.

9. What are the signs and symptoms of decreased blood sugar level?

9.1. Tremors.

9.2. Swallowing difficulty.

9.3. Urinary incontinence.

9.4. Fever.

10. Which of the following is a symptom of increased blood sugar level?

10.1. Joint pain

10.2. Excessive hunger.

10.3. Difficulty in smelling

10.4. Red eye

11. What type of food is advisable for diabetes patient?

11.1. low calcium diet.

11.2. High sodium diet.

11.3. Low carbohydrate diet

11.4. High fat diet

12. Which of the following are carbohydrate rich food items?

12.1. Rice& Bread.

12.2. Curd & Chicken

12.3. Soyabean & Cheese

12.4. Nuts & Fish.

13. Which of the following are protein rich food items?

13.1. Dairy products & oil seeds.

13.2. Fish & legumes

13.3. Rice& Potato.

13.4. Cream& Bread

14. What is the role of protein in diabetic diet?

14.1. Reduces total cholesterol.

14.2. Prevents difficulty in passing stool.

14.3. Removes toxic waste.

14.4. Slows the stomach emptying time.

15. Which of the following are fat rich food items?

15.1. Rice.

15.2. Honey.

15.3. Whole wheat.

15.4. Ghee.

16. What is the recommended quantity of oil?

16.1.3 Tbsps. per day.

16.2.6 Tbsps. per day.

16.3.9 Tbsps. per day.

16.4.13 Tbsps. per day.

17. What kind of diet is advisable to diabetic patient?

17.1. Honey & Fried foods.

17.2. Green vegetables & Oats.

17.3. Ghee & Egg yellow.

17.4. Meat & Meat products.

18. What kind of food items should be avoided by diabetes patients?

18.1. Ghee & Meat products.

18.2. Roti & legumes.

18.3. Wheat & Refined oil.

18.4. Soya bean & Dhal.

19. Which of the following fruits can be given liberally?

19.1. Jack fruit.

19.2. Mango.

19.3. Guava.

19.4. Green banana

20. How an exercise helps in diabetes mellitus?

20.1. Decrease the blood circulation

20.2. Reduce temperature

20.3. Prevent fatigue

20.4. Regulating the blood sugar level

21. Which is the best exercise for Diabetes Mellitus?

21.1. Walking

21.2. Swimming

21.3. Jumping.

21.4. Weight lifting.

22. What is the ideal timing for doing exercise?

22.1. ½ - 1 hour after eating.

22.2.1-3 hour after eating.

22.3.3-5 hour after eating.

22.4.4-6 hour after eating

23. What is the duration of walking/day/week?

23.1. 30 min /day as 5 days a week.

23.2. 1 hour /day/week.

23.3. 1 ½ hour / day as 5 days a week.

23.4. 2 hour /day/week.

24. What preparations need to be taken, before exercise?

24.1. Wear shoes with proper arch support.

24.2. Wear cotton clothes that will keep you dry & comfortable.

24.3. Carry biscuits and water.

24.4. All the above.

25. What kind of snacks are advisable during exercise?

25.1. Quickly absorbed carbohydrates.

25.2. Protein rich diet.

25.3. Fat rich diet.

25.4. Fiber rich diet.

26. When to stop exercise?

26.1. If patient feel giddiness.

26.2. If patient feel to discontinue.

26.3. If patient feel pain.

26.4. None of the above

27. What are the benefits of self-monitoring of blood glucose?

27.1. Record daily glucose fluctuation.

27.2. Decrease the dose of medicine

27.3. Immediate information about blood glucose value.

27.4. All the above

28. What are the barriers for self-monitoring of blood glucose?

28.1. Vision problem.

28.2. Discomfort with technology.

28.3. Impending fear.

28.4. Hearing problem.

29. Which device used for self-monitoring of blood glucose?

29.1. Urometer.

29.2. Spirometer

29.3. Glucometer

29.4. Sphygmomanometer

30. Why self-monitoring of blood glucose is necessary for diabetes patient?

30.1. Insulin dose adjustment

30.2. Monitor blood pressure level.

30.3. Helps to learn to monitor.

30.4. Knows the cholesterol level

31. Which of the following patients are recommended for self-monitoring of blood glucose?

31.1. Asthma patient.

31.2. Diabetics patient.

31.3. Mental retardation.

31.4. Renal problem patient.

32. What is follow up in your point of view?

32.1. Regular check up

32.2. Irregular check up

32.3. Quite checkup once blood sugar level becomes normal.

32.4. Visiting hospital once complication occurs.

33. Why follow up is essential for diabetes patient?

33.1. To know cholesterol level.

33.2. To prevent complication.

33.3. To stop treatment

33.4. To know blood pressure level.

34. Why blood for sugar is tested regularly?

34.1. To stop exercise 34.2. To monitor cholesterol level

34.3. Monitor level of blood pressure.

34.4. Monitor the level of glucose

35. How to control diabetes mellitus?

35.1. Continuous exercise.

35.2. Over work.

35.3. Stress.

35.4. Excessive sleep.

36. Which is the risk factor for foot ulcer?

36.1. Doing exercise

36.2. Cut short the nails

36.3. Improper foot care

36.4. Wearing chapels

37. Which types of sandals are advisable for diabetes patient?

37.1. MCR (Micro Cellular Rubber) sandals.

37.2. Heel sandals.

37.3. Flat sandals.

37.4. High heel sandals.

38. Why diabetic patient need to stop alcoholism?

38.1. Insulin production will increase.

38.2. Insulin production will decrease.

38.3. Insulin production gets fluctuated.

38.4. Insulin not produces.

39. What is the immediate management to treat decreased blood glucose level?

39.1. Taking simple sugar

39.2. Lying in flat position

39.3. Nothing by mouth

39.4. Drinking a glass of water

40. What are the consequences, if you are not taking regular drugs?

40.1. Decrease blood sugar level.

40.2. Decrease sodium level.

40.3. Decrease cholesterol level.

40.4. Decrease blood pressure level.

**ATTITUDE SCALE ON LIFE STYLE MODIFICATIONS AMONG
DIABETES MELLITUS**

S.NO	ITEMS	STRONGLY AGREE	AGREE	UNCERTAIN	DISAGREE	STRONGLY DISAGREE
1	Diabetes mellitus is a curable disease.					
2	Diabetes mellitus is caused by eating more sugar.					
3	Diabetes mellitus is a communicable disease.					
4	Maintaining blood sugar level close to normal can prevent the complications.					
5	People with diabetes are treated by diet only.					
6	Diabetes is a serious disease.					
7	Regular exercise will control blood sugar.					
8	Person with diabetes have no diet restrictions.					
9	Person with diabetes can lead good quality of life.					
10	Diabetes is cured by traditional remedies.					

APPENDIX-H

பிரிவு – அ

குடியியல் விவரங்கள்

அனைத்து வினாவிற்கும் விடையளிக்கவும்

1. வயது

- அ. 30 வயதிற்கு கீழ்
- ஆ. 31 – 40 வயதிற்குள்
- இ. 41 – 50 வயதிற்குள்
- ஈ. 51 வயதிற்கு மேல்

2. பாலினம்

- அ. ஆண்
- ஆ. பெண்

3. மதம்

- அ. இந்து
- ஆ. முஸ்லீம்
- இ. கிறிஸ்துவம்
- ஈ. மற்றவர்கள்

4. திருமண நிலை

- அ. திருமணம் ஆகவில்லை
- ஆ. திருமணம் ஆனவர்
- இ. பிரிந்தவர்
- ஈ. விதவை
- உ. மற்றவர்கள்

5. கல்வி தகுதி

- அ. படிக்காதவர்கள்
- ஆ. ஆரம்ப கல்வி வரை
- இ. மேல் நிலைக் கல்வி
- ஈ. பட்டதாரி மற்றும் அதற்கு மேல்

6. வேலை

- அ. வேலையின்மை
- ஆ. பயிற்சி பெறாத ஊழியர்
- இ. திறமையான தொழிலாள்கள்
- ஈ. அரை பயிற்சி பெற்ற தொழிலாள்கள்
- உ. தொழிலாளர்கள்

7. மாத வருமானம்

- அ. 2500 ரூபாய்க்கு கீழே
- ஆ. 2501 – 5000 ரூபாய் வரை
- இ. 5001 – 7500 ரூபாய் வரை
- ஈ. 7500 ரூபாய்க்கு மேல்

8. குடும்ப வகை

- அ. தனிக் குடும்பம்
- ஆ. கூட்டுக் குடும்பம்
- இ. நீட்டிக்கப்பட்டக் குடும்பம்

9. குடியிருப்பு பகுதி

- அ. நகர்ப்புற பகுதி
- ஆ. புற நகர்ப் பகுதி
- இ. கிராமப்புற பகுதி

10. உணவுமுறை

- அ. சைவம்
- ஆ. கலவை (சைவம் மற்றும் அசைவம்)

11. நீரிழிவு நோய்க்கான குடும்ப வரலாறு

- அ. ஆம்
- ஆ. இல்லை (ஆம் என்றால் குறிப்பிடவும் -----)

12. நீரிழிவு நோய்க்கான விழிப்புணர்வு

- அ. ஆம்
- ஆ. இல்லை

ஆம் என்றால், தகவல் முறைகள்

- அ. சுகாதார பணியாளர்கள்
- ஆ. குடும்பத்தினர் / நண்பர்கள்
- இ. வேறேதேனும் தகவல் முறை

பிரிவு – ஆ

தொகுக்கப்பட்ட கேள்விகள்

அனைத்து வினாவிற்கும் விடையளிக்கவும்

1. நீரிழிவு நோய் என்றால் என்ன?
 - அ. அதிக இரத்த அழுத்த நிலை
 - ஆ. இரத்தத்தில் அதிகரித்த கொழுப்பு நிலை
 - இ. இரத்தத்தில் அதிகரித்த சர்க்கரை நிலை
 - ஈ. இரத்தத்தில் அதிகரித்த சோடியம் நிலை.
2. இரத்த சர்க்கரையின் உண்மையான அளவு என்ன?
 - அ. 30 – 60 மி.கி / டெ.லி
 - ஆ. 80 – 120 மி.கி / டெ.லி
 - இ. 130 – 220 மி.கி / டெ.லி
 - ஈ. 230 – 300 மி.கி / டெ.லி
3. நீரிழிவு நோய்க்கான காரணம் என்ன?
 - அ. உடல் பருமன்
 - ஆ. விபத்து
 - இ. தலையில் காயம்
 - ஈ. இரத்தம் ஏற்றுதல்
4. நீரிழிவு நோய்க்கான அறிகுறிகள் என்ன?
 - அ. இருதய எரிச்சல்
 - ஆ. இருமல்
 - இ. முதுகு வலி
 - ஈ. அடிக்கடி சிறுநீர் கழித்தல்
5. நீரிழிவு நோய்யை கண்டறியும் சோதனை என்ன?
 - அ. எக்ஸ் – கதிர் பரிசோதனை
 - ஆ. இரத்தத்தில் சர்க்கரையின் அளவு
 - இ. தசையில் சர்க்கரையின் அளவு

ஈ. தொண்டைச் சளியில் சர்க்கரையின் அளவு

6. நீரிழிவு நோய்க்கான சிகிச்சையின் நோக்கம் என்ன?

- அ. கொழுப்பு நிலையை சமநிலைப்படுத்த
- ஆ. இரத்த அழுத்தத்தை சமநிலைப்படுத்த
- இ. ஹீமோகுளோபின் அளவை சமநிலைப்படுத்த
- ஈ. சர்க்கரையின் அளவை சமநிலைப்படுத்த

7. எந்த முறைகளில் சர்க்கரை நோயாளிக்கு மருந்தலிக்கலாம்?

- அ. வாய் மற்றும் தோலின் அடியில்
- ஆ. கண் மற்றும் மூக்கு வழியாக
- இ. எலும்பு மற்றும் தோல் வழியாக
- ஈ. காது மற்றும் உச்சந்தலை வழியாக

8. நீரிழிவு நோய்க்கான பின்விளைவு என்ன?

- அ. வயிற்று புண்
- ஆ. ஆஸ்துமா
- இ. கண் கோளாறு
- ஈ. முடி இழப்பு

9. சர்க்கரையின் அளவு குறைவதற்க்கான அறிகுறிகள் என்ன?

- அ. உடல் நடுக்கம்
- ஆ. விழுங்குவதில் சிரமம்
- இ. சிறுநீர் அடிக்கடி வெளியேறுதல்
- ஈ. உடல் காய்ச்சல்

10. சர்க்கரையின் அளவு அதிகரிப்பதற்க்கான அறிகுறிகள் என்ன?

- அ. மூட்டுவலி
- ஆ. அதிகப்படியான பசி
- இ. சுவாசிக்க கடினம்
- ஈ. சிவந்த கண்

11. எந்த வகையான உணவை நீரிழிவு நோயாளிக்கு அறிவுறுத்தப்படுகிறது?

- அ. குறைந்த கால்சியம் உணவு

- ஆ. அதிக சோடியம் உணவு
- இ. குறைந்த கார்போஹைட்ரேட் உணவு
- ஈ. அதிக கொழுப்பு நிறைந்த உணவு

12. கார்போஹைட்ரேட் நிறைந்த உணவு எது?

- அ. அரிசி மற்றும் ரொட்டி
- ஆ. தயிர் மற்றும் கோழி இறைச்சி
- இ. சோயா பீன்ஸ் மற்றும் பாலாடைக்கட்டி
- ஈ. கொட்டைகள் மற்றும் மீன்

13. புரதச்சத்து நிறைந்த உணவு எது?

- அ. பால் பொருட்கள் மற்றும் எண்ணெய் வித்துக்கள்
- ஆ. மீன் மற்றும் பருப்பு வகைகள்
- இ. அரிசி மற்றும் உருளைக் கிழங்கு
- ஈ. கிரீம் மற்றும் ரொட்டி

14. நீரிழிவு உணவில் புரதச்சத்தின் பங்கு என்ன?

- அ. மொத்த கொழுப்பு குறைக்கும்
- ஆ. மலச்சிக்கலை தடுக்கும்
- இ. நச்சுக்கழிவுகள் நீக்கும்
- ஈ. பசியின்மையை அதிகரிக்கும்

15. கொழுப்புச் சத்து நிறைந்த உணவு எது?

- அ. அரிசி
- ஆ. தேன்
- இ. கோதுமை
- ஈ. நெய்

16. எண்ணெய் பரிந்துரைக்கப்படுகின்ற அளவு என்ன?

- அ. நாளொன்றிற்கு 3 தேக்கரண்டி
- ஆ. நாளொன்றிற்கு 6 தேக்கரண்டி
- இ. நாளொன்றிற்கு 9 தேக்கரண்டி
- ஈ. நாளொன்றிற்கு 13 தேக்கரண்டி

17. எந்த மாதிரி உணவை நீரிழிவு நோயாளிக்கு அறிவுறுத்தப்படுகிறது?

- அ. தேன், வறுத்த உணவுகள்
- ஆ. பச்சை காய்கறிகள், ஓட்ஸ்
- இ. நெய், முட்டையின் மஞ்சள்
- ஈ. இறைச்சி மற்றும் இறைச்சி பொருட்கள்

18. எந்த மாதிரி உணவை நீரிழிவு நோயாளிகள் தவிர்க்க வேண்டும்?

- அ. நெய், இறைச்சி பொருட்கள்
- ஆ. ரொட்டி, பருப்புவகைகள்
- இ. கோதுமை, கொழுப்பு நீக்கப்பட்ட எண்ணெய்
- ஈ. சோயா பீன் மற்றும் பருப்பு

19. எந்த பழங்கள் தாராளமாக வழங்கப்படும்?

- அ. பலாப்பழம்
- ஆ. மாம்பழம்
- இ. கொய்யாப் பழம்
- ஈ. வாழைப்பழம்

20. எவ்வாறு நீரிழிவு நோயாளிக்கு உடற்பயிற்சி உதவி செய்கிறது?

- அ. இரத்த ஓட்டம் குறைக்க
- ஆ. உடல் வெப்ப நிலை குறைக்க
- இ. சோர்வைத் தடுக்க
- ஈ. இரத்த சர்க்கரை அளவை ஒழுங்குப்படுத்த

21. நீரிழிவு நோய்க்கு சிறந்த உடற்பயிற்சி என்ன?

- அ. நடைப்பயிற்சி
- ஆ. நீச்சல்
- இ. குதித்தல்
- ஈ. எடைத் தூக்கும் பயிற்சி

22. உடற்பயிற்சி செய்ய சிறந்த நேரம் என்ன?

- அ. உணவிற்கு பின் ½ மணியிலிருந்து – 1 மணி நேரம் கழித்து
- ஆ. உணவிற்கு பின் 1 – 3 மணி நேரம் கழித்து
- இ. உணவிற்கு பின் 3 – 5 மணி நேரம் கழித்து
- ஈ. உணவிற்கு பின் 4 – 6 மணி நேரம் கழித்து

23. சர்க்கரை நோயாளிகள் ஒரு நாளுக்கு செய்ய வேண்டிய உடற்பயிற்சியின் நேரம் என்ன?

அ. 30 நிமிடம் ஒரு நாளுக்கு என்று 5 நாள், ஒரு வாரம் செய்ய வேண்டும்

ஆ. ஒரு மணி நேரம் என்று ஒரு நாளுக்கு / ஒரு வாரம் செய்ய வேண்டும்

இ. 1 ½ மணி நேரம் ஒரு நாளுக்கு என்று 5 நாள், ஒரு வாரம் செய்ய வேண்டும்

ஈ. 2 மணி நேரம் என்று ஒரு நாளுக்கு / ஒரு வாரம் செய்ய வேண்டும்

24. உடற்பயிற்சிக்கு முன் எடுத்துக்கொள்ள வேண்டிய முறைகள் என்ன?

அ. சரியான காலணியை அணிய வேண்டும்

ஆ. பருத்தி ஆடையை அணிய வேண்டும்

இ. பிஸ்கெட் மற்றும் தண்ணீர் எடுத்துக் கொள்ள வேண்டும்.

ஈ. மேற்குறிப்பிட்ட அனைத்தும்

25. எவ்வகையான உணவு பண்டங்கள், உடற்பயிற்சியின் போது எடுக்க அறிவுறுத்தப்படுகிறது?

அ. விரைவாக உறிஞ்சப்படும் கார்போஹைட்ரேட்

ஆ. புரதச்சத்து நிறைந்த உணவு

இ. கொழுப்புச் சத்து நிறைந்த உணவு

ஈ. நார் சத்து நிறைந்த உணவு

26. எந்த அறிகுறிகள் ஏற்படும் போது உடற்பயிற்சியை நிறுத்த வேண்டும்?

அ. மயக்கம் வரும்போது

ஆ. நிறுத்த நினைக்கும் பொழுது

இ. வலி ஏற்படும் பொழுது

ஈ. வியர்வை அதிகரிக்கும் பொழுது

27. இரத்த குளுக்கோஸ் சுய கண்காணிப்பின் நன்மைகள் என்ன?

அ. தினசரி குளுக்கோஸ்-ன் ஏற்ற இறக்கங்களை பதிவு செய்

ஆ. மருந்தின் அளவை குறைக்க

இ.. குளுக்கோஸ் மதிப்பு பற்றி உடனடி தகவல் காண

ஈ. மேற் குறிப்பிட்ட அனைத்தும்

28. இரத்த குளுக்கோஸ் சுய கண்காணிக்க தடைகள் என்ன?

அ. பார்வை பிரச்சனை

ஆ. தொழில் நுட்பம் அறிதல்

இ. அச்சம் இல்லாமை

- ஈ. காது கோளாறு
29. எந்த கருவி இரத்த குளுக்கோஸ் சுய கண்காணிப்பு உதவும்?
- அ. யுரோமீட்டர்
ஆ. ஸ்டைரோமீட்டர்
இ. குளுகோமீட்டர்
ஈ. ஸ்பிக்மோமேனோமீட்டர்
30. ஏன் இரத்த குளுக்கோஸ் சுய காண்காணிப்பு நீரிழிவு நோயாளிக்கு அவசியம்?
- அ. இன்சலின் மருந்தின் அளவு மாற்ற
ஆ. இரத்த அழுத்தம் நிலை கண்காணிக்க
இ. கண்காணிக்கும் முறை அறிய உதவுகிறது
ஈ. கொழுப்பு அளவை அறிய
31. பின்வரும் நோயாளிகளின் எவர்க்கு இரத்த குளுக்கோஸ் சுய கண்காணிப்பு பரிந்துரைக்கப்படுகிறது?
- அ. ஆஸ்துமா நோயாளி
ஆ. நீரிழிவு நோயாளி
இ. மனநிலை பாதிக்கப்பட்டவர்
ஈ. சிறுநீரக பிரச்சனை உள்ளவர்
32. உங்கள் பார்வையில் தொடர் சிகிச்சை என்றால் என்ன?
- அ. தொடர்ந்து பரிசோதனை கொள்ளுதல்
ஆ. தொடர்ந்து பரிசோதனை கொள்ளாமல் இருத்தல்
இ. இரத்த சர்க்கரை திட்டமான பிறகு, பரிசோதனையை நிரூபித்தல்
ஈ. பின் விளைவு வந்த பிறகு, பரிசோதனை செய்தல்
33. ஏன் தொடர் பரிசோதனை, நீரிழிவு நோயாளிக்கு மிக முக்கியம்?
- அ. கொழுப்பு நிலையை அறிய
ஆ. பின்விளைவை தவிர்க்க
இ. சிகிச்சையை நிறுத்த
ஈ. இரத்த அழுத்த நிலையை அறிய
34. ஏன் சர்க்கரைகான இரத்த பரிசோதனை தொடர்ந்து சோதனை செய்ய வேண்டும்?
- அ. உடற்பயிற்சி நிறுத்த
ஆ. கொழுப்பு நிலையை அறிய

- இ. இரத்த அழுத்த நிலையை பதிவு செய்ய
 ஈ. சர்க்கரையின் அளவு பதிவு செய்ய
35. எப்படி நீரிழிவு நோய்யை கட்டுப்படுத்த முடியும்?
 அ. தொடர் பயிற்சி
 ஆ. அதிக வேலை
 இ. மன அழுத்தம்
 ஈ. அளவிற்கு அதிகமான தூக்கம்
36. கால் புண் ஆபத்தின் காரணம் என்ன?
 அ. உடற்பயிற்சி செய்தல்
 ஆ. நகம் சிறிதாக வெட்டுதல்
 இ. முறையற்ற கால் பராமரிப்பு
 ஈ. காலணி அணிதல்
37. எந்த வகை செருப்பினை நீரிழிவு நோயாளிக்கு அறிவுறுத்தப்படுகிறது?
 அ. மைக்ரோ செல்லூலார் ரப்பர் செருப்பு
 ஆ. குதிகால் செருப்பு
 இ. சமமான செருப்பு
 ஈ. உயர் குதிகால் செருப்பு
38. நீரிழிவு நோயாளிகள் ஏன் மது அருந்துவதை நிறுத்த வேண்டும்?
 அ. இன்சலின் சுரத்தல் அதிகரிக்கும்
 ஆ. இன்சலின் சுரத்தல் குறையும்
 இ. இன்சலின் சுரத்தலில் ஏற்ற தாழ்வு
 ஈ. இன்சலின் சுரக்காது.
39. இரத்த குளுக்கோஸ் குறைந்தால் உடனடியாக செய்ய வேண்டியவை என்ன?
 அ. எளிய சர்க்கரை எடுத்துக்கொள்ள வேண்டும்
 ஆ. சமநிலையின் படுத்துக்கொள்ள வேண்டும்
 இ. வாய் வழியாக எதையும் உட்கொள்ள கூடாது
 ஈ. ஒரு டம்பளர் தண்ணீர் அருந்த வேண்டும்.
40. நீங்கள் வழக்கமான மருந்துகள் எடுக்க தவறினால் என்ன விளைவுகள் உண்டாகும்?
 அ. சர்க்கரையின் அளவு குறையும்

- ஆ. சோடியம் அளவு குறையும்
 இ. கொழுப்பின் அளவு குறையும்
 ஈ. இரத்த அழுத்தம் குறையும்

பிரிவு - இ

ஒப்பீடு அளவுகோல் (நீரிழிவு நோய்க்கான வாழ்க்கைப் பாணி மாற்றம் மற்றும் மந்திரிய மனோபாவம்)

வரிசை எண்	அறிக்கை	தீவிரமாய் அங்கிகரி	அங்கிகரி	நடுநிலை	புறக்கணி	தீவிரமாய் புறக்கணி
1	நீரிழிவு நோய் குணப்படுத்தக்கூடிய நோய்					
2	நீரிழிவு நோய் சர்க்கரை உண்பதனால் உண்டாகிறது					
3	நீரிழிவு நோய் என்பது ஒரு வகை தொற்று நோய்					
4	இரத்த சர்க்கரை அளவு திட்டமாக வைத்துக்கொண்டால் பின் விளைவு தடுக்கலாம்					
5	நீரிழிவு நோயாளியை உணவு முறையில் மட்டும் சிகிச்சைப்படுத்தலாம்					
6	நீரிழிவு நோய் என்பது அபாயகரமான நோய்					

7	முறையாக உடற்பயிற்சி, இரத்த சர்க்கரையை கட்டுப்படுத்தும்					
8	நீரிழிவு நோயாளிகளுக்கு உணவு தடையில்லை.					
9.	நீரிழிவு நோயாளிகள் நல்ல தரமான வாழ்வை வாழலாம்					
10.	நீரிழிவு நோய்யை, பாரம்பரிய வைத்தியத்தினால் குணப்படுத்தலாம்.					

LESSON PLAN
ON
DIABETES MELLITUS & LIFE STYLE
MODIFICATION

BIOGRAPHIC DATA

TOPIC : DIABETES MELLITUS

GROUP : NEWLY DIAGNOSED DIABETIC PATIENT

VENUE : SRI NARAYANI HOSPITAL AND RESEARCH
CENTER

DURATION : 40 MIN

METHOD OF TEACHING : LECTURE CUM DISCUSSION

TEACHING AID : LAPTOP (PPT), MODELS.

MEDIUM OF INSTRUCTION : TAMIL/ENGLISH

GENERAL OBJECTIVES:

At the end of the health promotion program diabetic patients gains knowledge and understand regarding diabetes mellitus and develop desirable attitude to apply this knowledge in taking care of their health and prevention of complication.

SPECIFIC OBJECTIVES:

The diabetic patients are able to,


- define diabetes mellitus.
- list out the causes and risk factors for diabetes mellitus.
- classify the diabetes mellitus.
- describe the clinical factors of diabetes mellitus.
- enlist the simple investigations of diabetes mellitus.
- explain the treatment of diabetes mellitus.
- enumerate the complications of diabetes mellitus.

TIME	SPECIFIC OBJECTIVES	CONTENT	TEACHERS ACTIVITY	STUDENTS ACTIVITY	AV AIDS
5min		<p style="text-align: center;"><u>DIABETES MELLITUS</u></p> <p style="text-align: center;"><u>INTRODUCTION</u></p> <p>Diabetes mellitus is a multisystem disease related to abnormal insulin production, impaired insulin utilization or both. Diabetes mellitus a serious health problem throughout the world. Nearly 20% of people over age 65 years have diabetes. Diabetes is the leading cause of heart disease, stroke, adult blindness and non-traumatic lower limb amputation.</p> <p>Pancreas, the sources of insulin production, is an essential organ responsible for both digestion and glucose homeostasis. Insulin is associated with “blood sugar” and true enough, insulin has profound effect on carbohydrates metabolism. Besides, it also plays a very vital role in fat and protein metabolism. Absolute or relative insulin deficiency causes diabetes mellitus which is characterized by abnormalities in carbohydrates, protein and fat metabolism. The hormones of particular importance in glycaemic regulation are insulin, glucagon and more recently glucagon like peptide.</p> <p><u>DEFINITION:</u></p> <p>Diabetes mellitus is a group of metabolic diseases characterized by elevated level of glucose in the blood (hyperglycemia) resulting from defects in insulin secretion, insulin action or both.</p>	Teaching	Learning	Power Point Presentation
2min	define diabetes mellitus.				


	<p>NORMAL BLOOD</p> <p>GLUCOSE LEVEL = 80-120 mg/dl</p> <p>Pancreas is the organ which secretes insulin.</p> <p>INCIDENCE:</p> <p>As of 2013, 382 million people have diabetes worldwide. Type 2 makes up about 90% of the cases. This is equal to 8.3% of the adult population with equal rates in both women and men.</p> <p>In 2014, the International Diabetes Federation (IDF) estimated that diabetes resulted in 4.9 million deaths.</p> <p><u>ETIOLOGY AND RISK FACTORS:</u></p> <ul style="list-style-type: none"> ➤ Hereditary ➤ Auto immune ➤ Environmental factors ➤ Family history of diabetes ➤ Obesity ➤ Age >45 years ➤ Hypertension (>140/90 mm Hg) ➤ History of gestational diabetes <p><u>CLASSIFICATIONS:</u></p> <p>Type-I diabetes mellitus:</p> <ul style="list-style-type: none"> ➤ Formerly known as insulin dependent diabetes mellitus. 		
<p>3min</p>	<p>list out the causes and risk factors for diabetes mellitus.</p>	<p>Explaining</p>	<p>Power Point Presentation</p>
<p>2 min</p>	<p>classify the diabetes mellitus.</p>	<p>Listening</p>	

<p>2min</p>	<p>describe the clinical factors of diabetes mellitus.</p>	<p>➤ It is most often occur in people who are under 30 years of age.</p> <p>Type-II diabetes mellitus: Most prevalence type of diabetes accounting for over 90% of patients with diabetes.</p> <ul style="list-style-type: none"> ➤ Usually occur in people over 40 years of age. ➤ 80-90% of patients are overweight at the time of diagnosis. <p>Gestational diabetes mellitus :</p> <ul style="list-style-type: none"> ➤ Gestational diabetes mellitus develops during pregnancy. ➤ It is detected at 24-28 weeks of gestation. <p><u>CLINICAL MANIFESTATIONS:</u></p> <p>The classical symptoms are</p> <ul style="list-style-type: none"> ➤ poly uria (frequent urination) ➤ polydipsia (excessive thirst) ➤ Polyphagia (excessive hunger) due to inadequate conversion of nutrient to energy due to insulin deficiency. ➤ Weight loss ➤ Weakness ➤ Fatigue ➤ Prolonged wound healing. ➤ Visual changes 	<p>Teaching</p>	<p>Observing</p>	<p>Power Point Presentation</p>
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3min	enlist the simple investigations of diabetes mellitus.	<p><u>DIAGNOSTIC EVALUATION:</u></p> <ul style="list-style-type: none"> ➤ History collection ➤ Physical examination ➤ Two hours OGTT level exceeding 200mg/dl. ➤ Fasting glucose 70-130 mg/dl. ➤ Post prandial blood sugar level <180 mg/dl. ➤ Glycosylated hemoglobin level (Hb A1c) level 7% (or) less. ➤ Urine sugar test. <p><u>MANAGEMENT</u></p> <ul style="list-style-type: none"> ➤ The two types of glucose lowering agents [GLAs] used in the treatment of diabetes are insulin and oral agents [OAs]. ➤ All individuals with type I diabetes require insulin. ➤ For some people with type II diabetes a regimen of proper nutrition, regular physical activity and maintenance of desirable body weight will be sufficient to attain an optimal level of blood glucose control. <p><u>NUTRITION THERAPY:</u></p> <p>It is the cornerstone of the care for the person with diabetes. Many people both lay and professional are misinformed about the nutritional management of diabetes. Instead nutrition therapy for the management of diabetes is based on a plan of healthy eating that is appropriate and beneficial to the most people whether they have diabetes or not.</p>	Explaining	Learning	Power Point Presentation
15min	explain the treatment and life style modifications of diabetes mellitus.				


	<p>GOAL:</p> <ul style="list-style-type: none"> ➤ Attaining and maintaining optimal outcomes in terms of near normal blood sugar. ➤ In preventing chronic complications of diabetes by modification of nutrient intake and life style. ➤ Addressing individual needs such as personal, cultural preference and life style practices. <p><u>FOOD COMPOSITION:</u></p> <ul style="list-style-type: none"> ➤ Protein – 15%-20 % of total daily calories. ➤ Fat – 25-35% of daily calories from saturated fat. ➤ Carbohydrates – 50-60% of calories ➤ Sodium – intake should be less than 2400mg/day. ➤ Fiber – approximately 25 -30 g/day. <p><u>FOOD TO BE TAKEN:</u></p> <ul style="list-style-type: none"> ➤ One fruit per day (10g/day) ➤ Eat vegetables (beans, bitter guard, cabbage etc.) ➤ Pulses ➤ Green leafy vegetables ➤ Marie biscuit ➤ Clear soup. ➤ Pepper water. ➤ Plain coffee or tea. ➤ Skimmed butter milk. ➤ Unsweetened lime juice. 	Teaching	Listening	Power Point Presentation/ models 
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3min		<ul style="list-style-type: none"> ➤ Tomato juice. ➤ Seasoning like onion, mint, pepper, garlic, curry leaf, coriander, vinegar, mustard. <p><u>FAT EXCHANGE:</u></p> <ul style="list-style-type: none"> ➤ Oil – 10g (3 tbsp) ➤ Ghee – 10g (2 tbsp) ➤ Butter – 12g (2 ½ tbsp) ➤ Vanaspathi- 10g (2 tbsp) ➤ Margarine – 10g. <p><u>MILK EXCHANGE:</u></p> <ul style="list-style-type: none"> ➤ Cow’s milk – 100ml (½ cup). ➤ Buffalos milk – 50 ml (¼ cup). ➤ Curds – 100 ml (½ cup). ➤ Skimmed milk – 200 ml (1 cup). ➤ Skimmed milk powder- 18g (5 tbsp). ➤ Whole milk powder – 13 g (3 tbsp). <p><u>NON VEGETARIAN EXCHANGE:</u></p> <ul style="list-style-type: none"> ➤ Fried preparations to be avoided. ➤ To be included as curry, baked or grilled. ➤ Non- vegetarian can be mixed with vegetables to make a curry. ➤ To be avoided inn the night. ➤ 100gm fish/chicken = 20 gm protein =100kcal. 	Explaining	Observing	Power Point Presentation/ models
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1 min	<p><u>FOOD TO BE AVOIDED:</u></p> <ul style="list-style-type: none"> ➤ Fatty diet ➤ Fried foods (vadaai, bajji etc.) ➤ Animal foods ➤ Carbohydrate rich foods are restricted ➤ Tubers and roots ➤ Alcohol ➤ Honey ➤ Ghee, cream, butter, cheese, pickle, sugar, jaggery, sweets ➤ Deserts ➤ Egg yolk, mutton, red meat, chicken skinned. ➤ Grapes, mango, sweet melon, banana, jack fruit. ➤ Cakes, bun, sweet biscuits ➤ Chocolates jam. ➤ Glucose. <p>FRUITS:</p> <ul style="list-style-type: none"> ➤ Apple – 1 small ½ medium. ➤ Guava – 1 medium. ➤ Orange – 1 medium. ➤ Papaya – 1 medium. ➤ Pine apple – 1/3 medium. ➤ Pear – 1 medium. ➤ Sweet lime – 1 medium. ➤ Water melon – 2-3 slices. ➤ Pomegranate – 1/3 medium. 	Explaining	Learning	<p>Power Point Presentation/ models</p> 
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	<ul style="list-style-type: none"> ➤ Coconut water- 150ml. ➤ Jamun – 100 gm. ➤ Banana – ½ big or 40 gm. ➤ Chickoo – 1 small. ➤ Mango – ½ medium or 75gm. ➤ Sitaphal – ½ big size or 50 gm. ➤ Grapes – 10-12 pieces. <p><u>EXERCISE:</u></p> <p>Exercise is being increasingly recognized as a part of the treatment for diabetes mellitus. The beneficial effect of exercise on glycemic control largely results from increased tissue sensitivity to insulin. To understand effects of exercise on diabetes patient, it is essential to understand the physiology of exercise on normal subjects. The physiological effects will depend on the type and duration of exercise.</p> <p>BENEFITS:</p> <ul style="list-style-type: none"> ➤ Improvement in glycemic control. ➤ Improvement in insulin sensitivity and lowered insulin requirement often leading to reduced dosage of insulin and/or oral hypoglycemic agents especially in people with type 2 diabetes. ➤ Reduction in blood pressure. ➤ Increased fibrinolysis. ➤ Improvement in dyslipidemia. ➤ Increased vascular reactivity. ➤ Reduction in risk for osteoporosis. ➤ Reduction of coronary risk factors. 	Teaching	Listening	Power point presentation
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	<ul style="list-style-type: none"> ➤ Favorable changes in body composition. ➤ Maintenance and improvement in body weight. ➤ Improvement of psychological well-being. <p>AVOIDING COMPLICATIONS:</p> <ul style="list-style-type: none"> ➤ Stop exercise if symptoms of hypoglycemia occur during exercise. ➤ Check blood glucose before and after exercise. ➤ Eat a snacks with 15-30gm of quickly absorbed carbohydrates like hard candies, juices etc. prior to exercise depending on pre exercise blood glucose. ➤ Always have water and snacks handy during activity. ➤ Wear a medical identification tag to protect in case of emergency. ➤ Exercise with a friend whenever possible. ➤ Avoid exercise when patient is feeling ill. <p>TIMING FOR EXERCISE:</p> <ul style="list-style-type: none"> ➤ Exercise should always be 1-3 hours after eating something. ➤ Diabetes who is on insulin should not exercise when their insulin is at its peak. ➤ Since exercise can lower blood glucose hour later, exercising just before bed time should be avoided to prevent hypoglycemia in the middle of the night. <p>EXERCISE PRESCRIPTION SHOULD INCLUDE:</p> <ul style="list-style-type: none"> ➤ <i>Warm up period:</i>5-10min of aerobic activity such as walking or bicycling at low intensity. ➤ <i>Period of intense exercise.</i> 	<p>Explaining</p>	<p>Learning</p>	<p>Power point presentation</p> 
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	<ul style="list-style-type: none"> ➤ <i>Cool down period:</i> it should last for 5-10 min and consist of some activities as the warm up. ➤ Plan to increase intensity or duration of activity over time. ➤ Specify number of times a week and minutes of activity each day. <p>TIPS TO START A WALKING PROGRAM:</p> <ul style="list-style-type: none"> ➤ Wear shoes with proper arch support, a firm heel and thick flexible soles that will cushion your feet and absorb shock. ➤ Wear clothes that will keep you dry and comfortable. ➤ Start gradually to avoid stiff or sore muscles and joints. Begin walking faster, further and walking for longer periods of time over several weeks. ➤ Set goals and reward. ➤ Keep track of your progress with a walking journal or log. <p><u>SELF MONITORING OF BLOOD GLUCOSE:</u></p> <p>Self-monitoring of blood glucose is a cornerstone of diabetes management thus enabling clients to make self-management decisions regarding diet, exercise and medications.</p> <p>BENEFITS:</p> <ul style="list-style-type: none"> ➤ It gives immediate information about blood glucose value that can be used to adjust food intake, activity patterns, and medication dosage. ➤ It produces accurate records of daily glucose fluctuation and trends, as well as alerting patients to acute episodes of hyperglycemia and hypoglycemia. 	Teaching	Asking doubts/ learning
			Power point presentation
			

	<p>➤ It is a tool for achieving and maintaining specific glycemic goals.</p> <p>➤ It has a great educational value in assessing blood glucose responses to insulin, food and exercise.</p> <p>BARRIERS:</p> <ul style="list-style-type: none"> ➤ Vision problem. ➤ Fine motor co-ordination. ➤ Willingness. ➤ Cost. ➤ Impending fear. ➤ Feeling of guilt owing to increased values impedes monitoring. <p>TRAINING:</p> <ul style="list-style-type: none"> ➤ Wash hands with warm water. It is not necessary to clean the site with alcohol and it may interfere with test results. Fingers should dry before puncturing. ➤ Use the side of finger pad rather than the center as fewer nerve endings are along the side of the finger pad. ➤ The puncture should be deep enough to obtain sufficiently large drop of blood. Unnecessarily deep punctures may cause pain and bruising. ➤ Follow monitor instructions for testing the blood. ➤ Record results and compare to personal target glucose goals. <p>COMPLICATIONS:</p> <p>ACUTE COMPLICATIONS:</p>	Explaining	Observing	Power point presentation
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	<p>Three emergencies related to abnormal blood glucose levels can occur in clients who have diabetes mellitus.</p> <p style="text-align: center;"><u>DIABETIC KETOACIDOSIS</u></p> <p>Referred to as diabetic acidosis and diabetic coma is caused by a profound deficiency of insulin and characterized by hyperglycemia ketosis and acidosis and dehydration.</p> <p style="text-align: center;"><u>HYPERGLYCEMIA</u></p> <p>It is the life threatening syndrome that can occur in the patient with diabetes who is able to produce enough insulin to prevent DKA but not enough to prevent severe hyperglycemia, osmotic diuresis and extra cellular fluid depletion.</p> <p><u>CAUSES:</u></p> <ul style="list-style-type: none"> ➤ Too much food intake ➤ Too little or no diabetes medication ➤ Inactivity ➤ Emotional , physical stress ➤ Poor absorption of insulin <p><u>SIGNS AND SYMPTOMS:</u></p> <ul style="list-style-type: none"> ➤ Elevated blood glucose level ➤ Increase in urination ➤ Weakness, fatigue ➤ Blurred vision, Head ache 	Teaching	Listening	Power point presentation
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<ul style="list-style-type: none"> ➤ Glucosuria ➤ Nausea and vomiting ➤ Abdominal cramps <p><u>MANAGEMENT OF HYPER GLYCEMIA:</u></p> <ul style="list-style-type: none"> ➤ Physicians attention ➤ Continuing of diabetes medicines as ordered. ➤ Frequent checking of blood sugar level ➤ Hourly drinking of fluids 			
<p style="text-align: center;"><u>HYPOGLYCEMIA</u></p> <p>Hypoglycemia or low blood glucose occurs when there is too much insulin in proportion to available glucose in the blood.</p> <p>This causes the blood glucose level to drop to less than 70mg/dl.</p> <p><u>CAUSES:</u></p> <ul style="list-style-type: none"> ➤ Alcohol intake without food. ➤ Too little food, delayed, vomited, inadequate intake. ➤ Too much diabetes medication. ➤ Too much exercise without compensation. ➤ Diabetes medication or food takes at wrong time. ➤ Loss of weight without change in medication. 			
<p><u>SIGNS AND SYMPTOMS:</u></p> <ul style="list-style-type: none"> ➤ Blood glucose <50 mg/dl. ➤ Cold, clammy skin, numbness of fingers, toes, mouth. 			
		<p>Explaining</p>	<p>Observing</p> <p>Power point presentation</p>

	<ul style="list-style-type: none"> ➤ Rapid heartbeat, head ache. ➤ Emotional changes, nervousness. ➤ Profuse sweating, tremors, faintness, dizziness. ➤ Unsteady gait, slurred speech, hunger, changes in vision, seizure and coma. <p><u>TREATMENT:</u></p> <ul style="list-style-type: none"> ➤ Immediate ingestion of 5-20g of simple carbohydrates/ sugar. ➤ Ingestion another 5-20g of simple carbohydrates in 15 min if no relief obtained, contacting the physicians, if no relief obtained. ➤ Discussion with physician about medication dosage. <p><u>PREVENTIVE MEASURES:</u></p> <ul style="list-style-type: none"> ➤ Taking prescribed dose of medication at proper time. ➤ Accurate administration of insulin / oral agents. ➤ Ingestion of all ordered diet foods at proper time. ➤ Provision of compensation for exercise. ➤ Ability to recognize and know symptoms and treat them immediately. ➤ Carrying of simple carbohydrates. ➤ Education of friends, family, fellow employees about symptoms and treatment. ➤ Checking blood glucose as ordered. ➤ Wearing medical alert (diabetic identification). <p><u>CHRONIC COMPLICATION:</u></p> <p style="text-align: center;">MACRO VASCULAR COMPLICATION</p>	Explaining	Listening	PowerPoint presentation
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15min	<p>enumerate the complications of diabetes mellitus.</p>	<p>Macro vascular complications are disease of the large and medium sized blood vessels that occur with greater frequency and with an earlier onset in people with diabetes.</p> <p>Macro vascular diseases includes:</p> <ul style="list-style-type: none"> ➤ Cerebrovascular ➤ Cardio vascular ➤ Peripheral vascular disease <p><u>RISK FACTORS :</u></p> <ul style="list-style-type: none"> ➤ Obesity, smoking, hypertension. ➤ High fat intake and sedentary life style. <p><u>MICROVASCULAR COMPLICATIONS</u></p> <p>It results from thickening of the vessels membranes in the capillaries and arterioles in response to conditions of chronic hyperglycemia.</p> <p>They differ from the macro vascular complications in that they are specific to diabetes.</p> <ul style="list-style-type: none"> ➤ Eye (retinopathy) ➤ Kidney (nephropathy) ➤ Neuropathy <p><u>DIABETIC RETINOPATHY:</u></p>	Explaining	Learning	<p>Power Point Presentation</p> 
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	<p>It refers to the process of micro vascular damage to the retina as a result of chronic hyperglycemia in patients with diabetes.</p> <p><u>NEPHROPATHY</u></p> <p>It is a micro vascular complication associated with damage to the small blood vessels that supply the glomeruli of the kidney.</p> <p><u>NEUROPATHY:</u></p> <p>It is nerve damage that occurs because of the metabolic derangements associated with diabetes mellitus.</p> <p><u>COMPLICATIONS OF THE FOOT:</u></p> <p>Foot complications are the most common cause of hospitalization in the person with diabetes. The development of diabetic foot complications is a multifactorial process. Improper foot care can cause foot ulcer. They result from a combination of micro vascular and macro vascular disease that place the patient at risk for injury and serious infection that may leads to amputation.</p> <p><u>RISK FACTORS:</u></p> <ul style="list-style-type: none"> ➤ Fissured skin. ➤ Limited joint mobility. ➤ Obesity. ➤ Clotting abnormalities ➤ Impaired immune functions ➤ Diabetes duration more than 10 years. 	Teaching	Observing	Power Point presentation
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	<p>➤ Peripheral vascular disease.</p> <p><u>FOOT CARE:</u></p> <ul style="list-style-type: none"> ➤ Wash feet daily with a mild soap and warm water. ➤ Pat feet dry gently, especially between toes. Examine the feet daily for cuts, blisters, swelling and red tender areas. ➤ Use mild foot powder on sweaty foot. ➤ Cleanse cuts with warm water and mild soap, covering with clean dressing. ➤ Separate over lapping toes with cotton or lamb’s wool. ➤ Avoid open-toe, open-heel and high heel shoes. ➤ Do not wear clothing that leaves impressions, hindering circulation. ➤ Do not use hot water bottles or heating pads to warm feet, wear socks for warmth. ➤ Exercise feet daily either by walking or by flexing and extending feet in suspended position. ➤ Avoid prolonged sitting, standing and crossing of legs. <p>MICRO CELLULAR RUBBER:</p> <p>MCR is a specially processed rubber material with 15 chemicals, where bubbles of air are introduced into rubber, creating millions of “micro cells” containing air. These micro sized closed cells resemble fat filled cells under the sole of foot.</p> <p>Generally a pair of good MCR sandals will last for 18 to 24 months. It has the following qualities:</p> <ol style="list-style-type: none"> i. MCR withstands friction while walking and still maintains its 	<p>Explaining</p>	<p>Listening</p>	<p>power point presentation</p>
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	<p>thickness.</p> <p>ii. Its property of elastic recoiling moulds the foot instantly to its shape. Thus the area of the foot weight bearing is increased.</p> <p>iii. Good rubber will not tear if it is hand stitched or cut to insert straps.</p> <p><u>IMPORTANT POINTS TO REMEMBER:</u></p> <ul style="list-style-type: none"> ➤ Diabetic patients should go for annual medical checkup. ➤ Eye and dental checkup once in a year. ➤ No feasting, no fasting. ➤ Regular exercise, weight reduction. ➤ Avoid smoking and alcoholism. ➤ Regular medicine as per prescription. ➤ Carry an identification card. ➤ Foot care. ➤ Patients should be instructed that these agents will help keep blood glucose controlled and will help prevent serious complications. ➤ Patients should not take extra pills if over eating has occurred, unless specifically instructed to do so by their health care provider. ➤ Patients should take the drugs regularly without missing the dose. ➤ Routine care should include regular bathing with particular emphasis given to foot care. ➤ If the injury does not begin to heal within 24 hours or if signs of infection develop, the health care provider should be notified immediately. ➤ Travel for a patient with diabetes requires advance planning. ➤ The patient should have a full set of diabetes care supplies in the 	Teaching	Learning	<p>power point presentation</p> 
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			<p>carryon luggage when travelling by plane, train, bus.</p> <ul style="list-style-type: none"> ➤ When the patient feels tired on experiences hypo/hyper glycemc symptoms patients is advised to check the blood sugar level. ➤ For patients who use insulin or an oral agent that can cause hypoglycemia, snacks items and a quick acting carbohydrates source for treating hypoglycemia should be included in the carryon luggage. ➤ If the patient is planning a trip out of the country, it is wise to have a letter from the health care provider explaining that the patients has diabetes and requires all the materials, particularly syringes for ongoing health care. 	Teaching	Observing	power point presentation
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வரிசை .எண்	குறிப்பான நோக்கங்கள்	நேரம்	உள்ளடக்கம்	ஆசிரியரின் செயல்கள்	கற்றுக் கொள்பவரின் செயல்கள்	ஒளி மற்றும் ஒலி சார்ந்த ஊடகங்கள்
1	நீரிழிவு நோய்ப்பின் வரையரை	2 நிமிடம்	<p>வரையரை : நீரிழிவு நோய் என்பது உயர் இரத்தகளுக்கோஸ் அளவு மற்றும் இன்சலின் சுரப்பதில் குறைபாடு அல்லது இரண்டும் கலந்தவை. குணமாயம் இன்சலினை சுரக்கிறது.</p> <p>நீரிழிவு: 2013ல் 382 மில்லியன் மக்கள், உலகலவில் நீரிழிவு நோயால் பாதிக்கப்பட்டுள்ளனர். 2014ல் 4-9 மில்லியன் மக்கள், நீரிழிவால் இரந்துள்ளனர்.</p>			
2	நீரிழிவு நோய்க்கான காரணங்கள் பட்டியல் இடு	2 நிமிடம்	<p>நோய்க்காரணம் மற்றும் ஆபத்து காரணங்கள்:</p> <ul style="list-style-type: none"> ❖ பரம்பரை ❖ கார் நோய் எதிர்ப்பு ❖ சுற்றுச்சூழல் காரணம் ❖ குடும்ப வரலாறு ❖ உடல் பருமன் ❖ கர்ப்பகாலம் நீரிழிவு நோய் ❖ வயது > 45 மேல் ❖ இரத்த அழுத்தம் 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி

3	நீரிழிவு நோயின் வகை	2 நிமிடம்	<p>வகைப்பாடு: வகை - I:</p> <ul style="list-style-type: none"> * இவை இன்சலின் சார்ந்த நீரிழிவு நோய். * 30 வயதிற்கு கீழ் உள்ளோர்க்கு இவ்வகை நீரிழிவு தோன்றும். <p>வகை - II:</p> <ul style="list-style-type: none"> * இவை இன்சலின் சார்ந்திடாத நீரிழிவு நோய் * 40 வயதிற்கு மேல் உள்ளோர்க்கு இவ்வகை நீரிழிவு தோன்றும் <p>கர்ப்பகாம் நீரிழிவு :</p> <ul style="list-style-type: none"> * கர்ப்பகாம் நீரிழிவு என்பது மகப்பேறு காலத்தில் உண்டாகும் * இவை கருவுற்று 24-28 வாரங்களில் கண்டறியப்படும் <p>அறிகுறிகள் :</p> <ul style="list-style-type: none"> ➤ பாலியூரியா (அடிக்கடி சிறுநீர் கழித்தல்) ➤ பாலி டிப்சியா (அதிகப்படியான தாகம்) ➤ பாலி பேஜியா (அதிக பசி) ஊட்டச்சத்து 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
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4	நீரிழிவு நோயின் மருத்துவ முறையை விவரி	5 நிமிடம்	<p>சரியாக இரட்டியாக மாராமல் போகும்.</p> <ul style="list-style-type: none"> ➤ உடல் எடை இழப்பு ➤ பலவீனம் ➤ சோர்வு ➤ நீண்டகாலம் காயங்கள் அறுது ➤ பார்வை குறைப்பாடு <p>கண்டறியும் மதிப்பீடு:</p> <ul style="list-style-type: none"> ❖ வரலாற்று சேகரிப்பு ❖ உடல் பரிசோதனை ❖ ஒ.கு.ட.டே. என்னும் சோதனை 200எம் /ஜி டேசிலிட்டர்கு மேல் இருக்கும். ❖ உலவு உண்ணும் முன் 70-130 எம்.ஜ / டே.லி இருக்க வேண்டும். ❖ எச்.பி.ஏ.ஒன்.சி அளவு 7% குள் இருக்க வேண்டும். ❖ சிறுநீரில் சுகர் அளவு கண்டறிய வேண்டும். <p>சிகிச்சை :</p> <ul style="list-style-type: none"> ✓ இரண்டு வகையான சிகிச்சை அளிக்கலாம் அவை வாப்வழி மருந்தாகும் மற்றும் இன்சலின் மருந்தாகும். 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
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5	<p>நீரிழிவு நோயின் வாழ்க்கை பாணி மாற்றத்தை அறிவுரூதல்</p>	15 நிமிடம்	<p>வகை - I:</p> <ul style="list-style-type: none"> ❑ நீரிழிவு நோயாளி கண்டிப்பாக இன்சலின் எடுக்க வேண்டும் <p>வகை - II:</p> <ul style="list-style-type: none"> ❑ நீரிழிவு நோயாளி சரியான ஊட்டச்சத்து தொடர்ந்து உடல் பயிற்சி மற்றும் உடல் எடை குறைப்பு இவை அனைத்தும் இரத்த குளுக்கோஸ் அளவை குறைக்கும். <p>ஊட்டச்சத்து சிகிச்சை:</p> <p>நீரிழிவு நோயாளிக்கு உணவு மாற்றம் மிகவும் முக்கியம். உணவு மாற்றம் செய்வதின் மூலம் நீரிழிவு நோயை தடுக்கலாம் மற்றும் இரத்த குளுக்கோஸ் அளவை குறைக்கலாம்.</p> <p>நோக்கம் :</p> <ul style="list-style-type: none"> ❑ இரத்த குளுக்கோஸ் நிலையை பராமரிக்க வேண்டும். ❑ உணவின் மூலம் பக்கவிளைவுகளை தடுக்கலாம். ❑ கலாச்சாரத்திற்கு தகுந்தார் போல் உணவை மாற்றலாம். 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
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			<p>உணவு கலவை:</p> <ul style="list-style-type: none"> ✓ புரதச்சத்து – 15 %-20% கலோரிஸ் ✓ கொழுப்பு சத்து – 25 % - 35% கலோரிஸ் ✓ கார்போஹைட்ரேட்ஸ் - 50% – 60% கலோரிஸ் ✓ சோடியம் - 2400 எம்.ஜி / நாள் ✓ நார்சத்து – 25 % - 30 கி / நாள் <p>அறுந்த வேண்டிய உணவு :</p> <ul style="list-style-type: none"> ❖ 1 பழம் (10g) ஒரு நாளைக்கு ❖ காய் (பீன்ஸ், கோஸ், பாகர்க்காய்) ❖ பருப்பு வகைகள் ❖ கீறைகள் ❖ பிஸ்கட் ❖ தெளிவான குப்ப ❖ எலுமிச்சை சாறு ❖ மிளகுநீர் ❖ பால் இல்லா காயி அல்லது டீ ❖ மோர் ❖ தக்காளி ஜாஸ் ❖ வெங்காயம் 1 மிளகு, பூண்டு கருவேப்பிலை, 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	இயற்கை பருப்பு
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			<p>கொத்தமள்ளி, வினிகர், கடுகு</p> <p>கொழுப்பு சார்ந்தை:</p> <ul style="list-style-type: none"> * எண்ணெய் - 10-கிராம் (3ஐஸ்பூன்) * நெய் - 10-கிராம்(2 தேக்கரண்டி) * வெண்ணெய் - 12-கிராம்(21/2 ஐஸ்பூன்) * வணஸ்பதி - 10கிராம் (2 ஐஸ்பூன்) <p>பால் சார்ந்தை:</p> <ul style="list-style-type: none"> * பசுவின் பால் - 100மில்லி (1/2 கப்) * எருமை பால் - 50 மில்லி (1/4 கப்) * தயிர் - 100 மில்லி (1/2 கப்) * ஆடை நீக்கப்பட்ட பால் - 200 மில்லி (1 கப்) * ஆடை நீக்கப்பட்ட பால் பவுடர் - 18 கிராம் (5 ஐஸ்பூன்) * முழு பால் பவுடர் - 13 கிராம் (3ஐஸ்பூன்) <p>அசைவ சார்ந்தை :</p> <ul style="list-style-type: none"> ➤ வறுத்தவை தவிர்க்கப்பட வேண்டும் ➤ 100 கிராம் மீன் / கோழி ஸ்ரீ 20 கிராம் (புரதம் = 100 கி சேலர்) ➤ இரவு உணவுக்கு பின் தவிர்க்கப்பட வேண்டும் 	<p>கர்ப்பித்தல்</p>	<p>கற்றுக் கொள்ளுதல்</p>	<p>இயற்கை பருப்பு</p>
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			<p>உணவு தவிர்க்கப்பட வேண்டியவை:</p> <ul style="list-style-type: none"> ❑ கொழுப்பு உணவு ❑ வடை, பஜி முதலியவை ❑ விலங்கு உணவுகள் ❑ கார்போஹைட்ரேட்நிறைந்த உணவுகள் ❑ கிழங்குகள் ❑ மது ❑ தேன் ❑ நெய், கிரீம், வெண்ணெய், சீஸ் ❑ ஊறுகாய் ❑ சர்க்கரை, வெல்லம், இனிப்பு ❑ முட்டை மஞ்சள் கரு, ஆட்டிறைச்சி, சிவப்பு இறைச்சி ❑ திராட்சை, மாம்பழம், இனிப்பு முலாம்பழம், வாழை, பலாபழம் ❑ கேக்குகல், ரொட்டி, இனிப்பு பிஸ்கட் ❑ சாக்லேட்டுகள், ஜாம் ❑ குளுக்கோஸ் <p>பழங்கள்:</p> <ul style="list-style-type: none"> ★ ஆப்பிள் - 1சிறிய 1 ½ நடத்தர ★ கொய்யா - 1 துண்டு 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
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			<ul style="list-style-type: none"> ★ ஆரஞ்சு – 1 துண்டு ★ பப்பாளி – 1 துண்டு ★ பைன் ஆப்பிள் - 1/3 துண்டு ★ பேரி – 1 துண்டு ★ ஸ்வீட் எலுமிச்சை – 1 துண்டு ★ நீர் முலாம்பழம் - 2-3 துண்டு ★ மாதுளை – 1/3 துண்டு ★ இலைநீர் தண்ணீர் - 150 மில்லி ★ வரழை பழம் – பெரியது 1/2 அல்லது 40 கிராம் ★ சபோட்டா – சிறிய துண்டு ★ சீத்தாப்பழம் - ஒன்றரை அல்ல (பெரியது) அல்லது 50 கிராம் ★ திராட்சை – 10-12 துண்டு 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
			<p>உடற்பயிற்சி</p> <p>உடற்பயிற்சியின் மூலம் நீரிழிவு நோய்யை தடுக்கலாம் மற்றும் கட்டுப்படுத்தலாம். நீரிழிவு நோயாளி உடற்பயிற்சி செய்வதின் மூலம், பக்கவிளைவுகளை தடுக்கலாம்.</p>			

			<p>நன்மைகள் :</p> <ul style="list-style-type: none"> ✓ கிளைசெமிக்கை கட்டுப்படுத்தலாம் ✓ இரத்த அழுத்தம் குறையும் ✓ வாஸ்குலர் வினைத்திறன் அதிகரிக்கும் ✓ எலும்பு தேய்மானம் குறையும் ✓ இருதய ஆபத்து குறையும் ✓ உளவியல் நல்வாழ்வை மேம்படுத்தல் <p>சிக்கல்கள் தவிர்த்தல்:</p> <ul style="list-style-type: none"> ❖ இரத்தச் சர்க்கரை குறையும் அறிகுறிகள் உடற்பயிற்சி போது ஏற்பட்டால், உடற்பயிற்சி நிறுத்த வேண்டும். ❖ உடற்பயிற்சிக்கு முன் மற்றும் பின் இரத்த குளுக்கோஸ் அளவை கண்டறிய வேண்டும். ❖ செயல்பாடன் போது நீர் மற்றும் சிற்றுண்டி அறுந்த வேண்டும். ❖ மருத்துவ அடையாள தேக் அணிய வேண்டும். <p>பயிற்சி காலம்:</p> <ul style="list-style-type: none"> ★ உடற்பயிற்சி எப்பொழுதும் சாப்பிட்ட பிறகு 1-3 மணி நேரம் கழித்து செய்ய வேண்டும். 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
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		<p>★ உறங்கும் முன் உடற்பயிற்சி செய்தல் தவிர்க்க வேண்டும்.</p> <p>நடைப்பயிற்சி தொடங்க டிப்ஸ்:</p> <ul style="list-style-type: none"> ➤ காலனியை அணிய வேண்டும், உயர் காலணி தவிர்க வேண்டும். ➤ உலரக்கூடிய, வசதியான ஆடைகளை அணிய வேண்டும். ➤ நடைப்பயிற்சியை இயபாக, மெதுவாக ஆரம்பிக்க வேண்டும். <p>இரத்த குளுக்கோஸ் சுய கண்காணிப்பு:</p> <p>நீரிழிவு நோயாளி, உடற்பயிற்சி, ஊட்டச்சத்து சிகிச்சை, மருந்துவ சிகிச்சையில் இருக்கும் 'பொழுது, இரத்த குளுக்கோஸ்யை கண்காணிக்க வேண்டும். நீரிழிவு நோயாளிகள் இரத்த குளுக்கோஸ் சுய கண்காணிப்பு முறையை கண்டறிய வேண்டும்.</p> <p>நன்மைகள் :</p> <ul style="list-style-type: none"> ❖ இரத்த குளுக்கோஸ் அளவை உடனடியாக தெரிந்துகொள்ள உதவுகிறது. ❖ தினசரி குளுக்கோஸ் மாறுபாடை அறியலாம். 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
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6	<p>நீரிழிவு நோயின் பக்கவிளைவுகள் என்ன</p>	15 நிமிடம்	<p>தடைகள்:</p> <ul style="list-style-type: none"> பார்வை பிரச்சனை அறிவாற்றல் திறன் பாதிப்பு செலவு பயம் குற்ற உணர்வு அதிகரித்துள்ள காரணத்தினால் <p>பயிற்சி :</p> <ul style="list-style-type: none"> ✓ வெது வெதுப்பான நீரில் கைகளைக் கழுவுங்கள் விரல்கள் தகர்த்துவிடும் முன் உலர வேண்டும் ✓ விரலின் மையத்தைவிட, ஓரத்தில் துளையிடவும் மையத்தில் நரம்புகள் குறைவாக இருக்கும் ✓ போதுமான அளவிற்கு பெரிய துளையிட்டால்தான், இரத்தத்துளி கிடைக்கும். ✓ இரத்த சோதனை கருவியை பின்பற்றவும் ✓ பதிவு முடிவுகளை அறியவும். <p>பக்கவிளைவுகள்</p> <p>குறுகிய கால சிக்கல்கள்:</p> <p>நீரிழிவு நோயாலிக்கு முன்று வகையான</p>	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
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			<p>அவசர பக்கவிளைவுகல் ஏற்படும்.</p> <p>நீரிழிவு கீட்டோஅசிடோசிஸ்: இவை மிகவும் 'அவசரமான பக்கவிளைவும். இவற்றின் மூலம் நீரிழிவு நோயாலி, நீரிழிவு அமிலம் குறைபாடு மற்றும் சுயநினைவை இழத்தல் ஏற்படும்.</p> <p>ஹைப்பர்கிளைசீமியா: இவை அபாயமான பக்கவிளைவுகள் இன்சலின் அளவு மிகவும் அதிகரிக்கும்.</p> <p>காரணங்கள்:</p> <ul style="list-style-type: none"> ▪ அதிகளவில் உணவு உட்கொள்ளுதல் ▪ நீரிழிங்கான மருந்தை உட்கொள்ளாமல் தவிந்த்தல் ▪ செயலிழப்பு ▪ உடல் மன அழுத்தம் ▪ இன்குலின் உறிஞ்சுதல் குறைப்பாடு <p>அறிகுறிகள்:</p> <ul style="list-style-type: none"> ✓ உயர் இரத்த குளுக்கோஸ் அளவு ✓ அதிக சிறுநீர் கழித்தல் ✓ பலவீனம், சொர்வு ✓ மங்கலான பார்வை, தலைவலி ✓ குமட்டல் மற்றும் வாந்தி 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
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			<p>λ உடல் பருமன், புகைப்பிடித்தல், உயர் இரத்த அழுத்தம்</p> <p>λ கொழுப்பு அதிகரித்தல்</p> <p>முண் இரத்த ஓட்டம் சிக்கல்கள்</p> <p>தீராத உயிர் இரத்த குளுக்கோஸ் நிலையினால் நரம்புகள், இரத்த நுண்குழாய்கள் தடித்தலாக தோண்டுகிறது. இவை கண், சிறுநீரகம், நரம்பு களை பாதிக்கும்.</p> <p>விழித்திரை பக்கவிளைவுகள்:</p> <p>கண்ணிலிருந்து சிறு நரம்புகள் பாதிப்படையும். இவற்றால் கண் பார்வை குறையும். நீண்டகாலமாக நீரிழிவு நோய் உள்ளவர்களுக்கு இவ்வகை பிரச்சனை தோன்றும்.</p> <p>சிறுநீரகம் (நெப்ரோபதி):</p> <p>சிறுநீரகத்தில் குலோமருலை என்னும் இரத்த குழாய்கள் சேதம் அடைவதனால் நெப்ரோபதி (சிறுநீரக சிக்கல் ஏற்படும்).</p> <p>நரம்புக் கோளாறு:</p> <p>நீரிழிவு நோயாலிக்கு, நரம்பு தேய்மானம் அடைவதனால் நரம்பு சேதம் அடையும்.</p>	<p>கர்ப்பித்தல்</p>	<p>கற்றுக் கொள்ளுதல்</p>	<p>கணிப்பொறி</p>
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7	பாதங்களை பாதுகாக்கும் முறைகளை விவரி	10 நிமிடம்	<p>கால் பக்கவினைவுகள்:</p> <p>பாதம் பாதிப்பு என்பது என்பது நரிழிவு நோயாலிகளுக்கு எலிதில் தோண்டக்கூடியவை. சூல் பாதப்படைந்தவர்களை மருத்துவமனையில் மிகவும் அதிகளவில் காணலாம். இப்பிரச்சனையினால் வீக்கமும் செய்ய நேரிடும்.</p> <p>காரணங்கள்:</p> <ul style="list-style-type: none"> ✓ தோல் வெடிப்பு ✓ மூட்டு தேய்மானம் ✓ உடல் பருமன் ✓ இரத்தம் உறைதல் குறைபாடு பிரச்சனை ✓ பலவீனமான நோயெதிர்ப்பு செயல்பாடுகள் ✓ 10 வருடத்திற்கு மேல் நரிழிவு நோய் குறையாமல் இருத்தல் ✓ நரம்பு பிரச்சனை <p>பாதங்கள் பாதுகாக்கும் முறை:</p> <ul style="list-style-type: none"> ✘ பாதங்களை தினசரி சோப்பு மற்றும் சூடான தண்ணீரில் கழுவ வேண்டும் ✘ பாதங்களை தினசரி ஆய்வு செய்ய வேண்டும். முக்கியமாக கால்விரல்கள் இடையில் காயம், வெட்டு, கொப்புளங்கள், வீக்கம் இருக்கிறதா என்று ஆய்வு செய்ய வேண்டும். 	கர்ப்பித்தல்	கற்றுக் கொள்ளுதல்	கணிப்பொறி
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			<p>24 மாதங்கள் நீடிக்கும். இவற்றில் பின்வரும் குணங்கள் உள்ளன.</p> <ul style="list-style-type: none"> ❖ காலணியில் தடியம் அதிகளவில் உள்ளன ❖ கால் எடை தாங்கும் ❖ கையில் தைத்தல், மற்றும் வெட்டுதல் இல்லை எனில் இவை எலிதில் அறுப்படாது. <p>நினைவில் வைக்க வேண்டிய முக்கிய புள்ளிகள்:</p> <ul style="list-style-type: none"> ❖ ஆண்டிற்கு ஒருமுறை மருத்துவ பரிசோதனை செய்யவேண்டும். ❖ ஆண்டிற்கு ஒருமுறை கண் மற்றும் பல் பரிசோதனை செய்ய வேண்டும். ❖ விருந்தும், விரதமும் தவிர்க வேண்டாம். ❖ வழக்கமான உடற்பயிற்சி எடை குறைப்பு ❖ புகை மற்றும் மது தவிர்க்க வேண்டும் ❖ வழக்கமாக மருந்து உட்கொள்ள வேண்டும் ❖ மருத்துவ அடையாள அட்டையை எடுத்துச் செல்லவும். ❖ பாதம் பாதுகாக்க வேண்டும் ❖ மருந்துகள் இரத்த சர்க்கரை குறைக்க மற்றும் பக்கவிளைவை உபயோகிக்கப்படுகிறது என்பது நோயாளி அறிய வேண்டும் 	<p>கர்ப்பித்தல்</p>	
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பாடம் திட்டம்

(நீரிழிவு நோய் மற்றும் வாழ்க்கை பாணி மாற்றம்)

தலைப்பு : நீரிழிவு நோய் மற்றும் வாழ்க்கை பணி மாற்றம்
குழு : புதிதாக கண்டறியப்பட்ட நீரிழிவு நோயாளி
இடம் : ஸ்ரீ நாராயணி மருத்துவமனை மற்றும் ஆராய்ச்சி
மையம் , திருமலைகோடி, வேலூர் -55
காலம் : 30 நிமிடம்
விரிவுரை வந்த விதம் : போதனை முறை
போதனை உதவிய கருவி : கணிபொறி, இயற்கை பருப்பு வகைகள்

பொது நோக்கங்கள்:

நீரிழிவு நோயாளிகள் அறிவு முடிவில், நீரிழிவு நோயாளி, வாழ்க்கை பாணி மாற்றத்தை பற்றியும், பக்கவிளைவுகளை தடுக்கும் முறையையும், நீரிழிவு நோயாளி அறிந்து செயல்படுவார்கள்.

குறிப்பிட்ட இலக்குகள்:

நீரிழிவு நோயாளிகள் முடிவில்

- ❖ நீரிழிவு நோயின் வரையறை
- ❖ நீரிழிவு நோய்க்கான காரணங்களை பட்டியல் இடு
- ❖ நீரிழிவு நோயின் வகைகள்
- ❖ நீரிழிவு நோயின் மருத்துவ முறையை விவரி
- ❖ நீரிழிவு நோயின் வாழ்க்கை பாணி மாற்றத்தை அறிவுருதல்
- ❖ நீரிழிவு நோயின் பக்கவிளைவுகள் என்ன
- ❖ பாதம் பாதுகாக்கும் முறைகளை விவர

வரிசை. எண்	குறிப்பான நோக்கங்கள்	நேரம்	உள்ளடக்கம்	ஆசிரியரின் செயல்கள்	கற்றுக் கொள்பவரின் செயல்கள்	ஒளி மற்றும் ஒலி சார்ந்த ஊடகங்கள்
			<p>நீரிழிவு நோய் அசாதாரண இன்சலின் உற்பத்தி, பலவீனமான இன்சலின் பயன்பாடு, அல்லது இரண்டும் தொடர்பான பல படித்தான நோய் ஆகும். நீரிழிவு உலகிலே மிகவும் அபாயகரமான நோய் 20௨௦ நீரிழிவு நோய், 65 வயதிற்கு மேலானோருக்கு தோன்றுகிறது.</p> <p>கணையம், இன்சலின் உற்பத்தியை சுக்கும், இவை உணவு செரிமானம் மற்றும் குளுக்கோஸ் ஹோமியோஸ்டசிஸ் போன்ற பணிகளை செய்யும் இன்சலின் இரத்த சர்க்கரை நோய்க்கான முக்கிய காரணம். இதை தவிர கொழுப்பு மற்றும் புரத வளர்சிதை மாற்றத்தில் ஒரு முக்கிய பங்கு வகிக்கிறது. முழுமையான அல்லது தொடர்புடைய இன்சலின் குறைபாடு, கார்போஹைட்ரேட், புரதம் மற்றும் கொழுப்பு வளர்சிதை மாற்றத்தை உருவாக்கும், இதனால் நீரிழிவு நோய் ஏற்படும். குளைசெமிக கட்டுப்படுத்த உதவுவது இன்சலின், குளுக்கோஜென் மற்றும் பெப்டைப் ஆகும்.</p>			





