REVIEW OF LITERATURE

STUDIES RELATED TO INCIDENCE AND PREVALENCE OF DIABETES MELLITUS:

1. Cavanaugh k, et al. (2017) has done a study on 398 adult patients with type 1 or type 2 diabetes mellitus. It shows that common errors included misinterpreting glucose meter readings and miscalculating carbohydrate intake and medications dosage. There were total interquartile range is of 42% to 81%. The median DNT sore was 65%. Poor numeric skills were common in patients with diabetes mellitus. They were associated with worse perceived self-efficacy, fewer self-management behavior, and possibility of poor glycemic control.

2. Himanshu K Nayak, et al. (2017) studied prevalence of type 2 diabetes mellitus in urban population of Ahmedabad, Gujarat. Different regions of Gujarat show that prevalence of diabetes mellitus. Over the years, is on the rise. Out of 904, 125 (13.8%) people were diabetics. 25 (2.8%) people were newly diagnosed, while 100 (11%) already had diabetes. Male and Female ratio with diabetes was 1.4:1.

3. Paul, et al (2015) of UK conducted on “a study to assess the prevalence of anemia in diabetic patients in the hospitals of UK”. He studied the impact of anemia in diabetic patients. They reported that anemia has a significant impact on the quality of life of the patients with diabetes.

4. Sarah wild, et al. (2014) conducted the study to estimate the prevalence of diabetes and the number of people of all ages with diabetes for years 2015 and 2030. Data on diabetes prevalence by age and sex from a limited number of countries were extrapolated to all 191 world health organization member states and applied to United Nations’ population estimates for 2015 and 2030. Urban and rural populations were considered separately for developing countries. The prevalence of diabetes for all age groups worldwide estimated to be 2.8% in 2015 and 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. The prevalence of diabetes is higher in men than women, but there are more women with diabetes then men. The urban population in developing countries is projected to be double between 2015 and 2030. These findings indicate that the “Diabetes epidemic” will continue even if levels of obesity remain constant. Given the increasing prevalence of obesity.
5. Stolar M W, et al. (2008) were done a study on the managing type-2 diabetes mellitus: going beyond glycemic control. Diabetes has become increasingly prevalent, particularly among younger age groups in the United States, accounting for approximately 15% of health care expenditures by managed care organizations. Despite this, knowledge, achievement of the American Diabetes Association (ADA), proper glycemic control and attainment of other non-glycaemic management targets are essential to the prevention of long term complication of diabetes and to reduction of overall disease management costs.

STUDIES RELATED TO KNOWLEDGE, ATTITUDE AND PRACTICE RELATED TO DIABETES MELLITUS:

6. Heather p Whitley, et al. (2017) conducted a study on the assessment of the patients’ knowledge regarding diabetic goals, self reported medication adherence and goal attainment. A total of 149 patients were enrolled in to the study. All of whom completed the survey, were diagnosed with type 2 diabetes mellitus, by chance no any single patient had a diagnosis of type 1 diabetes mellitus.

7. Hertzel C Cerstein, et al. (2016) had done the study on the cow’s milk exposure and type 1 diabetes mellitus; a critical overview of the clinical literature. It shows the early cow’s milk exposure may be an important determinant of subsequent type 1 diabetes mellitus and may be increases the risk of 1.5 times.

8. Suish palaian et al, 2006; Diabetic patients were counseled via regular bedside meetings, via the distribution of leaflets though out their hospital stay and during regular following visits for 2 months after discharge from the hospital. Patient counseling by a clinical pharmacists improved knowledge scores, but the improved knowledge did not used to appropriate attitude or practice

9. Shrestha L et al.2006 A study was carried out to understand the knowledge, attitude and practices (KAP) regarding diabetes mellitus among the diabetic patients attending a diabetic education programme in Nepal medical college, results showed that the majority fo patient shad correct knowledge regarding diabetic diet, three fourths of them were subjected themselves to blood sugar checking at good intervals and almost all were under regular contact with physicians.
10. Latha s, et al. (2001) has conducted a study to assess the knowledge and practice of foot care among patients in institute of nursing sciences, Mangalore. An evaluation approach with pre-experimental design was used for 40 diabetic clients drawn through purpusive sampling technique. The study findings revealed that majority 23 (57%) of clients had poor knowledge. Most of the clients 30 (75%) had poor practices. [16]

11. Metoo (2004) from UK conducted “A study to increase the nurses’ knowledge regarding importance of Ongoing education for the person with Diabetes in hospitals of UK”. It was done in order to minimize the development of Micro vascular and Macro vascular complication occurring in diabetic patients. The study mentions that this complex, life-long activity of self care management can not be achieved in isolation and that the role of the nurse, particularly as an educator and facilitator is critical. [17]

12. Namperumalsamy, et al (2004) in India conducted “A study regarding Awareness and Practice relating to Diabetic retinopathy among non-medical persons in a South-Indian population”. In this population-based cross-sectional study, trained social workers conducted face-to-face interviews using a semi-structured questionnaire with 200 randomly selected paramedical personnel and 204 persons randomly selected from the community. Responses were graded on a five point scale. Over half of the respondents were unaware of risk factors for Diabetic retinopathy.

13. Dinesh K Upadhyay et year.2004 In Nepal a knowledge, attitude and practice study regarding diabetes mellitus among 182 patients (103 males, 79 females) was conducted. The study showed KAP scores of the patients were low. This suggested the need for educational information to improve the knowledge attitude and practice of the diabetes mellitus patients.

14. Naeema badruddin, et al. (2000) has conducted a study on knowledge, attitude and practices of patients visiting a diabetic care unit in Pakistan. In that patients, coming for OPD are attended. Among those total patients 57% of the patients were overweight or obese. Only 10.7% had good glycemic control. 67% did not do any exercise of any kind. This study high lights the need for better health information to the patient through large scale awareness programme, so as to change the attitude of our public regarding diabetes.
15. Kamel, et al. (2000) conducted a study in Egypt, to assess the level of knowledge of diabetic patients about the disease, to show the relationship between demographic variables (age, sex and education) and level of knowledge and to reveal the relationship between knowledge and management-related behavior of diabetics. The study reveals that a majority of diabetic patients (90.0%) had a poor knowledge about the disease, 83.7% had poor knowledge about the complications associated with diabetes and 96.3% had poor awareness of how to control the disease.

STUDIES RELATED TO MANAGEMENT AND COMPLICATIONS OF DIABETES MELLITUS:

16. Heiser m, et al. (2015) studied the relationship between knowledge of recent HbA1c values and diabetes care; understanding and self-management. They conducted a cross sectional study of a sample of 686 adults with type 2 diabetes mellitus in various five health settings, who had checked their HbA1c values in first six months. Result of the study shows that 66% reported that they don’t know their last HbA1c value, and only 25% accurately reported that values, and also they respond better diabetic care understanding and assessment of their glycemic control then those who did not.

17. Hendricks LE, et al. (2010) had done a study on the effects of diabetes self-management education with frequent follow up on the health outcomes of African-American men with 30 type 2 diabetes patients. This cross sectional study showed that after following a structured program of diabetes self-management education may be just as effective in contributing to favorable diabetes health outcomes as monthly followings.

18. Michael vallis, et al. (2005) conducted a study to assess the effectiveness of management of diabetes mellitus among the patients in hospitals of Canada. The impact of diabetes education in maintaining lifestyle changes and stated that self-management education had a significant positive impact on regimen adherence and healthy eating, sustained at 2 years. Self-management education was more effective for those with a more recent diagnosis, previous diabetes education and less psychological impact from the disease.

19. Somannaver Suresh, et al (2008) in India conducted “A study to assess the Awareness and Prevention of diabetes among the patients in South India”. The study showed that 15.5% of adult
participants above the age of 20 years had diabetes. Despite this high number of diabetes educational activities, nearly 25% of participants were unaware of a condition called diabetes. Furthermore, 40% of the people with self-reported diabetes were not aware that diabetes could affect various organs in the body; only 22% of these people were aware that diabetes is preventable.

20. Stolar M W, et al. (2008) conducted a study on managing type-2 diabetes mellitus: going beyond glycemic control. Diabetes has approximately 15% of health care expenditures by managing care organizations. Proper glycemic control and attainment of other other non-glycemic management targets are essential to the prevention of long term complications of diabetes and to reduction of overall diabetic management costs.

21. Telidevi venkata styanarayanamma (2001) conducted a study for effectiveness of planned teaching programme on management of diabetes mellitus among client attending the diabetic clinic at NIMS, Hyderabad. The findings shown that there was significant difference in pretest and posttest knowledge scores in different areas. The obtained ‘t’ value of 17.47 was greater then that the table ‘t’ value. There was significant difference in pre-test and post-test knowledge. The findings show that the post-test knowledge score were higher then the pre-test knowledge scores.

22. Verrotti, et al (1999) in Italy conducted “A study to assess the prevalence of Diabetic retinopathy among patients with diabetes mellitus”. It discussed those possible preventive measures for minimizing micro-vascular complications arising due to diabetes mellitus such as metabolic control, reduction of dietary protein intake and use of medicines. The study shows that the glycemic and blood pressure controls are, so far, the main means of possible preventions or modification of the natural history of diabetic micro-vascular complications.

STUDIES RELATED TO KNOWLEDGE AMONG INSULIN REQUIRED DIABETES PATIENTS.

23. Mohan .D, (2008), et al, conducted a study to determine the awareness of diabetes knowledge in urban South Indian population in Chennai. The study concluded that awareness and knowledge regarding diabetes is still grossly inadequate in India. Massive diabetes education programmes are urgently needed both in urban and rural India.
24. Shrestha, L, Nagra, JS, Nepal (2008), et al, conducted a study to understand the knowledge attitude and practices regarding diabetes mellitus among the diabetic patients attending a diabetic education programme. They concluded that the majority of patients had knowledge regarding diabetic diet.

25. Schiel, R, (2008), conducted a study to evaluate the long term teaching programme, which was given to improve the diabetic knowledge, quality of life & the incidence of severe hypoglycemia. 95 patients with type-I diabetes were examined before & after participation in the programme. The follow-up results showed the improved level of HbA1C (glycosylated haemoglobin) in patients who had adequate knowledge about diabetes. Patients with less knowledge had higher level of HbA1C and high incidence of severe hypoglycemia.

26. Buysschaert, M, (2007), et al, conducted a study to evaluate the effectiveness of an in-patient education programme based on the knowledge, behavior and glycaemic control of insulin dependent diabetic patients. In group I, they observed an improvement in knowledge and behavior indices (evaluated by a written questionnaire) from 69 +/- 3 and 67 +/- 4% (mean +/- SEM) before the teaching session to 86 +/- 2 and 85 +/- 2% 6 months after, respectively (p less than 0.001). HbA1 decreased from 12.1 +/- 0.3% to 11.2 +/- 0.3% (p less than 0.05) and to 10.7 +/- 0.4% (p less than 0.025) after 6 and 12 months respectively. This improvement was observed in patients with or without residual insulin secretion. In group II patients, the index of knowledge increased similarly from 67 +/- 4 to 85 +/- 2% (p less than 0.001). No significant decrease of HbA1 was observed in this group after 6 and 12 months, however whether the patients possessed residual insulin secretion or not.

27. Rani, PK, Raman, R (2007), et al, conducted a study to determine the knowledge of diabetes and diabetic induced retinopathy among rural populations in India, and the influence of knowledge of diabetic retinopathy on attitude and practice. They concluded that we need to propagate aggressive and comprehensive awareness models to educate rural populations on diabetes mellitus and diabetic retinopathy.

28. Abdelgawwad, ES, (2007), conducted a study to assess the diabetes related knowledge, attitudes and management practices among school teachers in order to determine their diabetes training needs and preparedness to provide adequate care for students with diabetes. This study
highlighted the need of diabetes education training courses especially designed to school teachers to promote adequate care and management of diabetes emergencies in schools.

29. Brown, H., (2006), conducted a study on the effectiveness of teaching on patients knowledge, self-care management of patients with diabetes. He concluded that teaching of patients has a positive outcome in diabetes adults. Determining the knowledge of the patient before educating him is very important to know the level of knowledge.

30. Varkey, (2006), et al, conducted an experimental study to determine the effectiveness of an organized instruction regarding the knowledge, skill and attitudes among patients with diabetes mellitus. The study concluded that there was significant increase in the level of knowledge, skill and attitude among the experimental group who were exposed to organized instruction than the control group.

31. Balachandra, (2006), et al, conducted a study to assess the knowledge and practice of patients with diabetes mellitus on prevention of complications among those who visited out patient department and admitted in Christian medical college and hospital, vellore. The study concluded that there was a significant relationship between age, treatment regimen (dietary restrictions, insulin injection (or) oral drugs) and the level of knowledge, practice regarding the prevention of complications.

32. Neil. K. J, (2005), et al, conducted a study to assess the quality of life and diabetes knowledge of young persons with type-I diabetes and influence of treatment modalities and demographics. The study concluded that young persons with type I diabetes had a positive perception of their quality of life and above average diabetes knowledge, which were influenced by several factors, such as, self rated health, body mass index, and age at diagnosis. Dietetics professionals should assess perceived quality of life and knowledge among young persons with type I diabetes because these factors can potentially influence disease management and treatment compliance.

33. Pawar, (2005), et al, conducted a study to find the association of psycho-social factors, diabetes knowledge and glycaemia control to insulin regimen among Type I diabetes mellitus in a routine diabetic clinic. The study was concluded that there was a association between the psychological factor, diabetic knowledge and glycaemic control on insulin regimen.
34. Kamel. N.M, Badawy. Y.A, (2005), et al, conducted a study to determine the socio demographic determinants of management behavior of diabetic patients (n=300) knowledge of the disease and their management behavior. They concluded that 90% had poor knowledge about the disease, 83.7% had poor knowledge about the complications associated with diabetes and 96.3% had poor awareness of how to control the diabetes.

35. Balachandran, A.S,(2004), conducted a study to assess the knowledge and practice in self care management among diabetes mellitus patients in MSH hospital Coimbatore. The results of the study revealed out of 100 patients, 60% of the samples had inadequate knowledge and practice among the patients with diabetes mellitus.

36. Pollock. R.D, Unwin. M.C, (2004), conducted a study to assess the knowledge and practice of foot care in people with diabetic a knowledge score was calculated and current practice determined. There was a positive correlation between the score and received advice on foot care.

37. Rajasekaran. M, Thirumalaikolundu. P, Subramanian. C, (2003), did a comparative study to determine and compare the knowledge, beliefs, and practices, of diabetic patients receiving free care and of those who paying for medical care. The result showed a large gap between knowledge and action in both groups and has a need for increased efforts towards patient education regarding diabetes.

38. Kalamathi, (2002), et al, conducted a descriptive study to determine the patients with insulin dependent diabetes mellitus to evaluate their knowledge about diabetes mellitus and adherence to the management regimen. The study concluded that there was a significant difference between knowledge and educational level and occupation of the patients with diabetes.

39. Good Man .GR, et al, (2002), conducted a study to assess the knowledge, attitude and practice of staff nurses in the primary care centre of diabetes. The result of the study revealed that the staff patient communication problem was 75%, with lack of knowledge and practice in patient care. So the recommendations were given to improve knowledge regarding quality of care, and staff patient communications.

40. Abioye-Kuteyi. EA, Osofeitimi. EO, Ijadunola. K.T, (2002), did a study to assess the dietary knowledge practices & control of type-II diabetes mellitus. Patients(n=33), and all 33
subjects had trunk obesity. This was moderately severe in 60% subjects. About 52% received dietary advice. The later had a significantly higher mean dietary knowledge score than those without advice. Higher mean knowledge scores seemed to be associated with better dietary practices and better glycemic control.

**PROBLEM STATEMENT**

“EFFECTIVENESS OF DIABETES EDUCATION AND AWARENESS IN TERMS OF KNOWLEDGE AND SELF CARE PRACTICES AND ITS IMPACT ON LIFE STYLE AMONG PATIENTS WITH TYPE-II DIABETES MELLITUS IN RAJKOT DISTRICT, GUJARAT”