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"Role of Community Pharmacist in Providing Pharmaceutical Care in Diabetes Mellitus Patients"

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ABSTRACT: objective: To evaluate the role of community pharmacist in diabetes management and to reduce life style disease. Identify the drug related problem for enhancing pharmaceutical care.Material and Method: Take a survey on 100 peoples in Dakshina kannada in the period of 90 days. Include the people with age from 08-80, Person with diabetic mellitus and related complication and also people who are willing to participate and exclude Pregnant and lactating women in this study. Patients were selected based on convenient sampling and the group was monitored for 2 month with continuous follow up. Result: The People with age group 51 and above are the most diabetic patients. Within 61% have type II diabetic in this 80% have drug related problems and most of them are taking. Oral hypoglycemic agents.Conclusion:At the end of the study period the role of community pharmacist towards diabetes patients is essential nowadays . The Patient counselling is most important in control diabetes and drug related problem.

Keywords: Community pharmacist, patient care, diabetics mellitus.

I. INTRODUCTION

Community pharmacy is a pharmacy setup in a community to meet the public's medicine and other healthcare needs. This includes stocking and dispensing the prescription and over the counter (OTC) medicines, and professional services such as patient counseling and health screen services. In others words term used to describe the provision of pharmaceutical care by pharmacists in primary health care settings. [1]

Scope of community pharmacy in pharmaceutical care concept :

The pharmaceutical care is defined as the responsible provision of drug therapy for the purpose of achieving definite therapeutic outcomes that improve the patients quality of life. In routine practice, pharmacist dispense the medicines against a prescription. But pharmaceutical care practice pharmacists analyzes the prescription , identifies the drug related problems and resolves the same in consultation with prescriber and patient.[2]

Many Professionals organizations including the International Pharmaceutical Federation (FIP), Pharmaceutical Society of Australia (PSA) and the Royal pharmaceutical Society of Great Britain stress that patient counseling is the pharmacist's responsibility. In a study conducted by Ramesh et al. surveying members of the public, India opined that patient counseling is a shared responsibility of both doctors and pharmacists.

Whatever the type of medication, patients need basic information regarding the administration technique, storage conditions, possible side effects associated with the use and possible drug-drug and drug- food interactions , together with suitable strategies to overcome these. Next to drug dispensing, patient counseling is probably the most widely accepted professional responsibility of pharmacists in most developed countries.

Many pharmacies maintain patient medication records. This helps the pharmacist understand and identify drug- related problems like non adherence is very common due to polypharmacy, adverse effects and forgetfulness. In the UK and Australia, there is increasing involvement of community pharmacists in the management of anticoagulation and diabetes. Some pharmacists provide point of care measurement of International Normalized Ratios (INRs) for monitoring warfare therapy and screening services for the detection of diabetes. [1]

Diabetes Mellitus:

Diabetes mellitus is a heterogeneous group of disorders characterized by varying degrees of insulin hyposecretion or insulin insensitivity. Regardless of cause, it is associated with hyperglycemia.

There are major ethnic and geographical differences in the prevalence and incidence of type 1 diabetes.

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Type 2 diabetes mellitus is much commoner than type 1, accounting for over 75% of all patients with diabetes in most populations. It usually occurs in patients over the age of 40 years. In the UK, diabetes affects approximately 1.4 million people, and a further million are to be undiagnosed. The incidence of type 2 increases with age and with increasing obesity. As with type 1, there are major ethnic and geographical variations.

The cause of diabetes, regardless of the type, is having too much glucose circulating in your blood stream. However, the reason why your blood glucose levels are high differs depending on the type of diabetes.

Causes of type 1 diabetes: This is an immune system disease. The body attacks and destroys insulin producing cells in pancreas. Without insulin to allow glucose to enter the cells, glucose builds up in the bloodstream. Genes may also play a role in some patients. Also , a virus may trigger the immune system attack.

Cause of type 2 diabetes and prediabetes: The body cells don't allow insulin to work as it should to let glucose into its cells. The body cells have become resistant to insulin, the pancreas can't keep up and make enough insulin to overcome this resistance. Glucose levels rise in blood stream.

Diabetes is a chronic, incurable condition that affects 1.4 million people, over three-quarters of whom have type 2 diabetes. A further 1 million causes are thought to be undiagnosed. If not adequately managed, diabetes can result in a wide range of complications that have clinical, social and economic implications. Patients with diabetes require a wide range of educational advice, including foot care, management of intercurrent illness and hypoglycemia. All patients should receive dietary advice, for example smoking cessation. In addition to achieving optimal glycogenic control, it is essential that coexisting hypertension and dyslipidemia are identified and treated. In these patients, achieving optimal glycogenic control alone will not prevent complications.

There are a wide variety of insulin's and delivery devices available, allowing regimens to be tailored to individual need. There are six main types of oral hypoglycemic agents available, the initial choice of therapy in type 2 diabetes will largely be determined by the patient's renal function, agent and weight . [3]

NEED FOR STUDY

Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite therapeutic outcomes that improve the patients' quality of life. In routine practice, pharmacists dispense the medicines against a prescription. But pharmaceutical care practice pharmacists analyze the prescription, identify the drug related problems and resolve the same in consultation with prescriber and patient.

The condition is further worsened due to insignificant drug use problems (DRP's). On the spurge of many spurious, duplicate and adulterated drugs, it is in the hands of the pharmacist particularly the community pharmacist, to take up the challenge for providing better health care and better outcomes economically.[19]

Pharmacists in the community ensure medication safety similarly to how they would in any healthcare environment throughout the medication-use process, including the ordering of medications to their storage, transcription, preparation, dispensing, counseling, and more.[20]

The role of pharmacists in diabetes management, including patient identification, assessment, education, referral, and monitoring, is described. Pharmacists can help identify patients with diabetes through screening and should target patients at high risk, people with a family history of the disease.[21]

Diabetes is a metabolic disease characterized by elevated levels of blood glucose. All the carbohydrates we eat and drink are broken down into glucose. The amount, we consume can make a difference to our blood glucose level and diabetes management which leads over time to serious damage to the heart, blood vessels , eyes, kidneys and nerves.[22]

Patients with diabetes mellitus are at increased risk for lower respiratory tract infection, urinary tract infection and skin and mucous membrane infection.[23]

II. RESULT

A TOTAL OF 100 DIABETIC PATIENTS HAVE RESPONDED TO THE SURVEY.

1.1 Age wise distribution:

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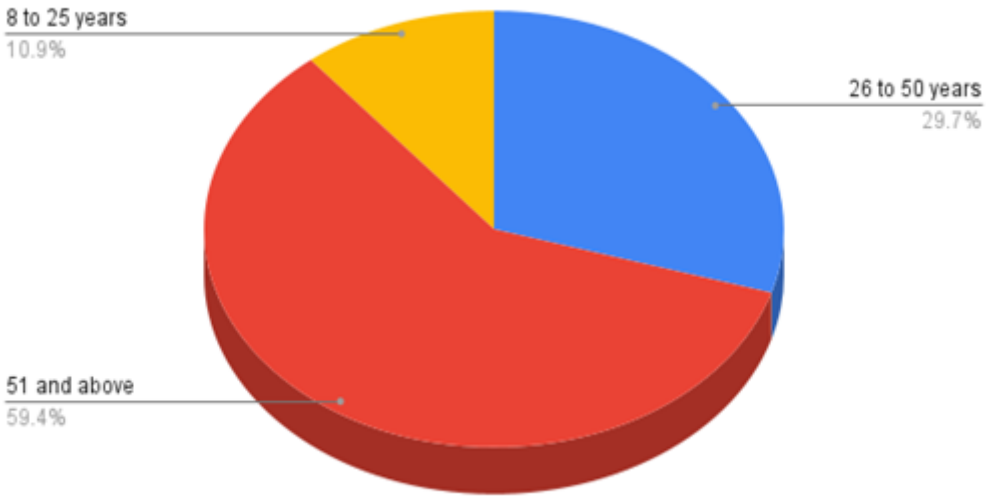
Age	No. of Patients	Percentage
8 to 25 years	11	10.9%
26 to 50 years	27	29.7%
51 and above	62	59.4%



Out of 100 patients 11(10.9%) were aged 8 to 25 years , 27(29.7%) were aged 26 to 5 years, and 62(59.4%) were aged 51 and above.

1.2 Gender wise distribution

Gender	No. of Patients	Percentage
Male	49	48.5%
Female	51	51.5%

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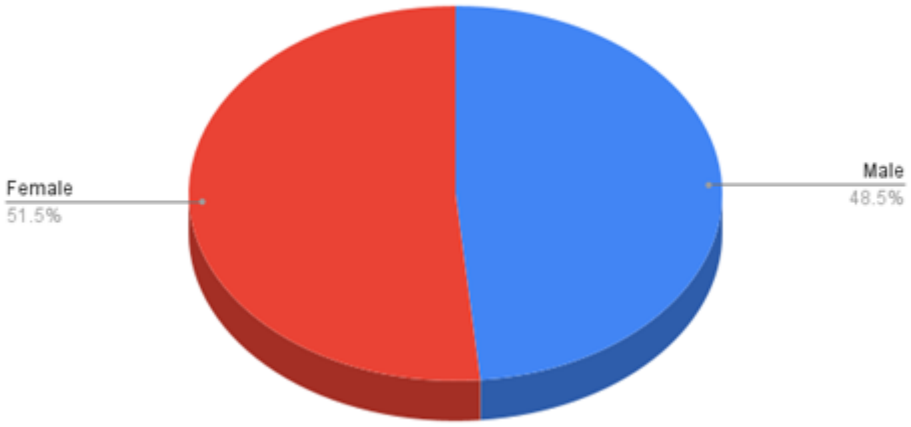
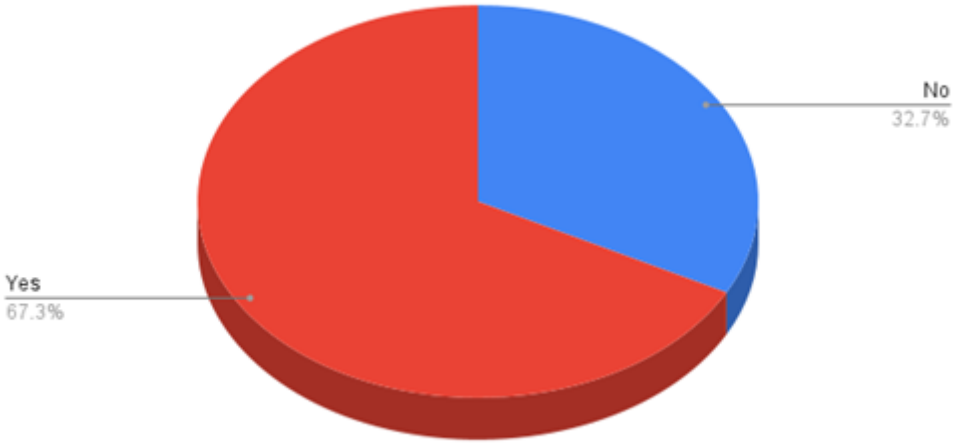


Out of 100 responses , 49(48.5%) of male and 51(51.5%) of females who have diabetes mellitus.

1.3 Relationship between hereditary factors and development of diabetes mellitus:

Question	**Answer**	**No. of responses**	**Percentage**
Family history of diabetes	Yes No	67 33	67.3% 32.7%



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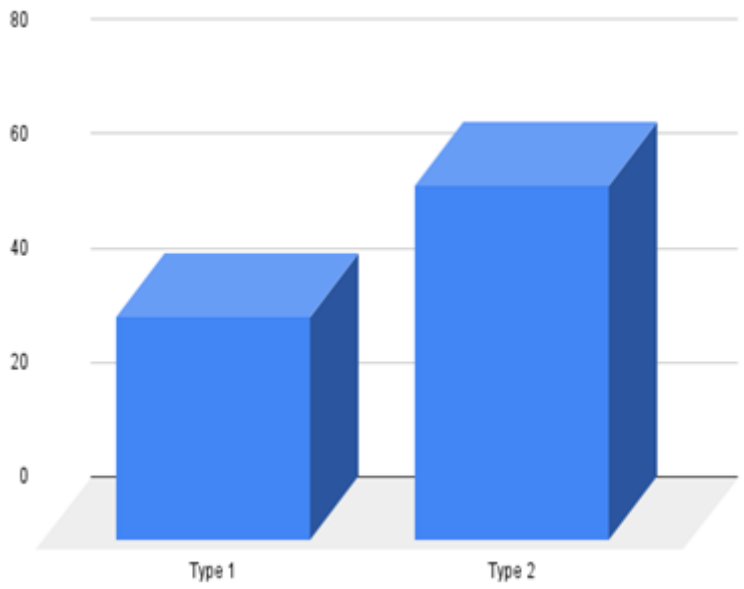
Out of 100 respondents 67(67.3%) has a family history of diabetes and 33(32.7%) does not have a family history of diabetes.

1.4 Differentiation between the type 1 and type 2 diabetes :

Type of diabetes	**No. of Patients**	**Percentage**
Type 1	39	38.6%
Type 2	61	61.4%



Out of 100 patients 39 (38.6%) has type 1 diabetes and 61(61.4%) has type 2 diabetes.

1.5 Clinical conditions associated with diabetes mellitus:

Clinical conditions	**Frequency**	**Percentage**
Eye problem	36	21.6%
Heart/artery problem	7	4.2%

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Feet/leg problem	30	18.0%
Nerve problem	10	6.0%
Skin problem	9	5.4%
GI problem	9	5.4%
Teeth/gum problem	12	7.2%
Sexual problem	5	3.0%
Kidney problem	9	5.4%
Frequent infections	7	4.2%
Other problem	33	19.8%

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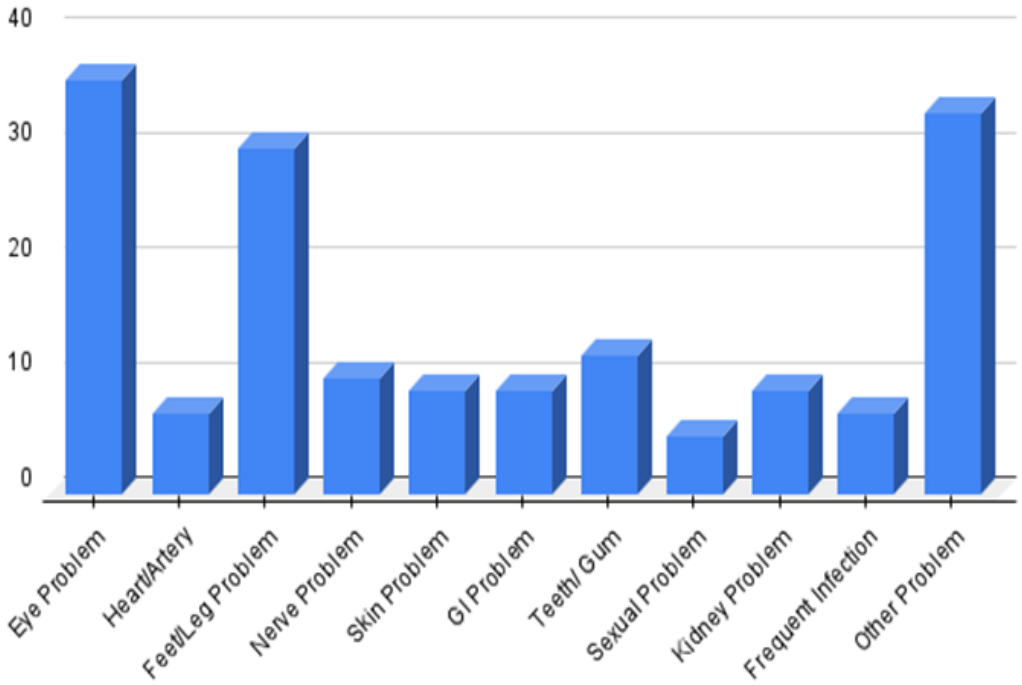

Out of 100 patients21.6% have Eye problem, 18.0% Feet/leg problem, 7.2% Teeth/gum problem, 6.0%Nerve problem, 5.4% Skin problem, GI problem and Kidney problem, 4.2% Heart/artery problem and Frequent infections , 3.0% Sexual problem.

1.6 Prescribing pattern of anti diabetic medications:

Diabetic medication	**Frequency**	**Percentage**
Insulin	14	13.7%
Oral hypoglycemic agents	72	70.6
None	15	14.7%

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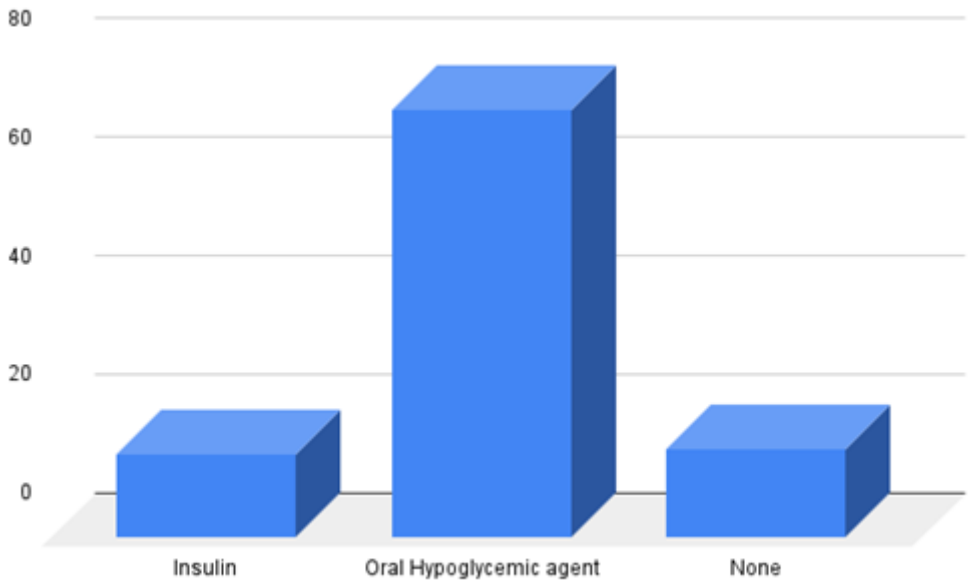
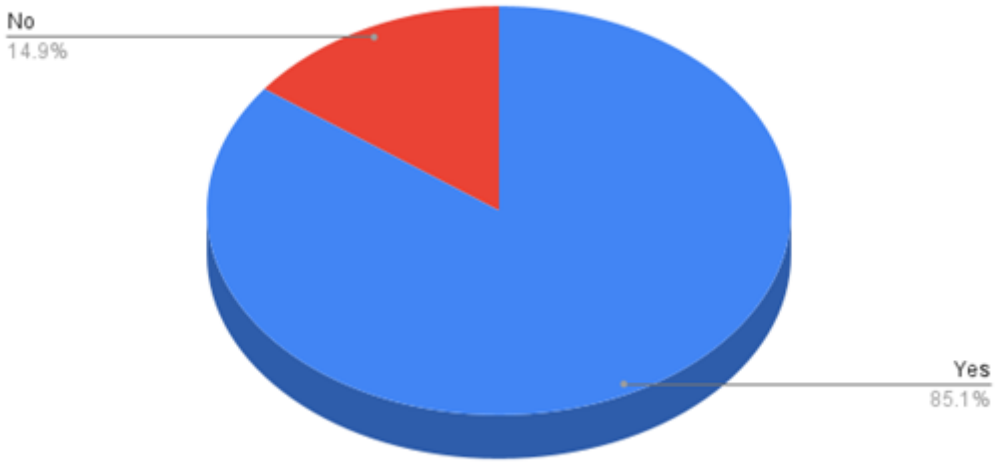


1.7 Efficacy of drugs which controls the blood sugar level

Question	Answer	Frequency	Percentage
Change in Blood sugar level	Yes No	85 15	85.1% 14.9%



Out of 100 85 (85.1%) of patients have change in Blood sugar level

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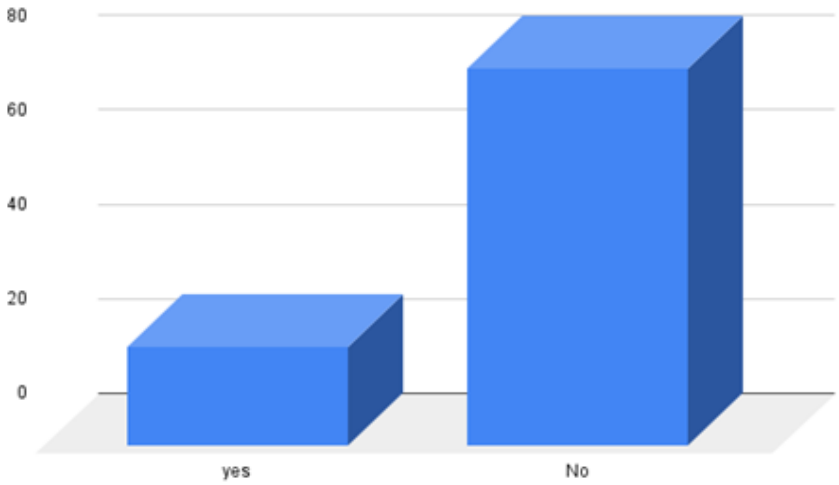
1.8 Representing drug problems:

Has drug related problem	80%
Doesn't has drug related problem	20%



Out of 100 80% of patients has DRPs and 20% of patients not has DRPs

Drug problems	**Frequency**	**Percentage**
Hypoglycemia	3	3.0%
Redness	1	0.1%
Vomiting	1	0.2%
Dizziness	7	6.9%
Itching	1	0.2%

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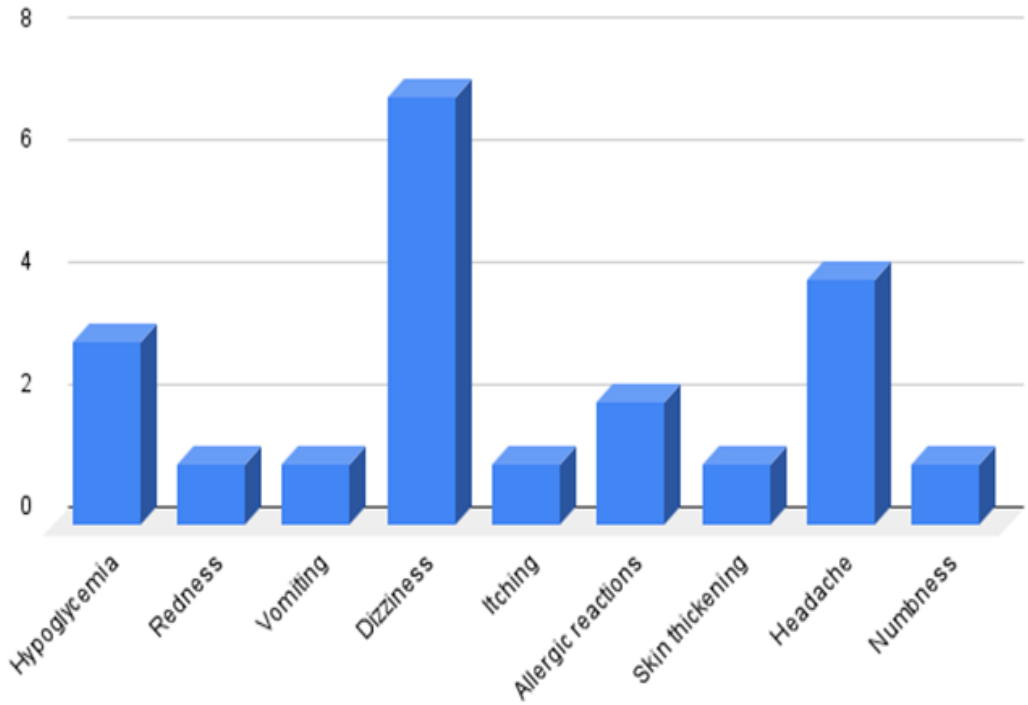
Allergic reaction	2	2.0%
Skin thickening	1	0.3%
Headache	4	4.0%
Numbness	1	1.0%



In above fig, mostly shown drug related problem is hypoglycemia and others are common drug related problems.

1.9 Methods to overcome the hypoglycemia:

Hypoglycemia is represented by plasma glucose level < 70 mg/dL If the blood glucose level is low, the person should eat or drink 15 to 20 grams of carbohydrates. These are sugary foods or drinks without protein or fat that are easily converted to sugar in the body. Try glucose tablets or gel, fruit juice, honey, or sugary candy.

Recheck blood sugar levels 15 minutes after treatment. If blood sugar levels are still under 70 mg/dL(3.9mmol/L), eat or drink another 15 to 20 grams of carbohydrate, and recheck your blood sugar level again in 15 minutes.

Repeat these steps until the blood sugar is above 70 mg/dL(3.9 mmol/L).Have a snack or meal. Once your blood sugar is back in the normal range, eating a healthy snack or meal can help prevent another drop in blood sugar and replenish your body's glycogen stores.[24]

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III. DISCUSSION

Diabetes mellitus is a disorder characterized by an elevation in the level of glucose in the blood. In this condition there may be a decrease in the body ability to respond to Insulin or absence of Insulin produced by Pancreas.

The study assessed the diabetes patients, and the role of community pharmacists in India .The participation in this study was genuinely collected and it is kept confidential.The main Aim is to understand the role of community pharmacists in the daily lifestyle of the diabetes patient. The need for this study was to analyze the, Drug Related Problems, Screening and monitoring of the diabetes patients. By conducting a survey of 100 voluntary patients Study found that most of the patients above the age of 50 are more prone to diabetes. Diabetes mellitus patients can keep their Glucose level in balance by following the guidance of the Physician and the Pharmacist.

It was supported by Daniel asfawerkuet,al that Community pharmacist in our study counseling and health promotion services for patients with Type 2 Diabetes mellitus patients they had an advanced training and continuous education for community pharmacists, including regarding management of diabetes disease status. There were guidelines about diabetes care, counseling, and management that also need to be distributed and implemented throughout the community pharmacists. Furthermore, continuous supervision and assessments with regard to the implementation of such guidelines are crucial in order to improve the level of involvement and optimize the contribution of community pharmacists.[25]

IV. CONCLUSION

The study concludes that pharmacists' role in patient care towards diabetes management. Diabetes mellitus is a serious life threatening problem. We can treat diabetes mellitus using either insulin or using oral medications. According to our survey on 100 patients most of diabetic patients are above the age group of 50. They usually take insulin injection as most of the insulin’s are Rapid acting and Accepted by the body. Patient counseling is important to control Diabetes mellitus and drug related problems. The community pharmacist should give good awareness about proper medication, indications and treatment to the patient. The most elderly people suffer from eye problems, kidney disappointment, respiratory failures and stroke.

Having Diabetes mellitus means that you need to check blood sugar levels often and eat healthy food , and be physically fit. Patients with type 1 diabetes mellitus are treated with insulin as well as diet and exercise. Patients with type 2 Diabetes mellitus initially are treated with diet and exercise. If those measures are not sufficient, patients may be prescribed oral antihyperglycemic drugs. The diabetes mellitus patients have delayed wound healing, care should be taken as it is important or it may lead to serious health issues. We conclude that the above observation provides information for the community pharmacist in comparing the impact of future initiatives in diabetic management.

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