TO UNDERSTAND THE SCOPE OF PATIENT CENTRIC APPROACH IN THE DIABETES MARKET

Dissertation Submitted to

The IIHMR University, Jaipur

for the partial fulfillment for the award of the

degree ofMaster of Business Administration

(MBA)

in

Pharmaceutical Management

by

LAKSHMY MANOJ KUMAR

Under the Supervision and Guidance of

Dr. Sandeep Narula

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DECLARATION BY STUDENT

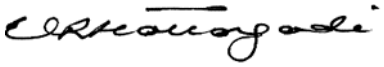
I hereby declare that this dissertation title "To Understand the Scope of Patient Centric Approach in Diabetes Market" is the bonafide record of my original researchwork. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

Lakshmy Manoj Kumar

21/06/2021

CERTIFICATE

This is to certify that Lakshmy Manoj Kumar in partial fulfillment of the requirements for the award of the degree of MBA (Pharmaceutical Management from the IIHMR University, Jaipur has successfully completed her internship at The Enablers during March 22, 2021, to June 19,2021.



Dr Vivek Hattangadi
The Enablers

CERTIFICATE

This is to certify that dissertation titled title **"To Understand the Scope of Patient Centric Approach in Diabetes Market"** is a record of the research work undertaken by Lakshmy Manoj Kumar in partial fulfillment of the requirements for the award of the degree MBA (Pharmaceutical Management from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

Dr Sandeep Narula
IIHMR University, Jaipur

Date: 21/06/2021

Dr Saurabh Banerjee
School Dean
IIHMR University, Jaipur

Date: 21/06/2021

ABSTRACT

The pharmaceutical business has long been at the forefront of drug discovery and development research and innovation. Being the unavoidable sector till human beings exist various kinds of changes has taken over this industry over a time. One of those change, this industry is keen to experience in the coming forth is the customization of medications for a person undergoing treatment using patient-centric approach, especially for lifestyle diseases. Therefore, this study is conducted to address the uprising burden of diabetes and how important it so come up with a continuum of care model within the healthcare and pharmaceutical industry which provides a framework for the delivery of proper health care to population groups that is evidence based, comprehensive, measurable, and patient-centric. This exploratory study sought to understand the current treatment pattern followed by the diabetes patients and its efficiency and to analyze scope of patient centric approaches in the diabetes market. Methodologies-During the period of February 2021 to June 2021, a self-administered questionnaire was provided to people who has diabetes condition and to people who are at the risk of getting diabetic in the future front were studied using descriptive statistics. In this research, the study has opened our eyes at the different treatment line about diabetes, the attitude of the patients' towards treating diabetes, their benefits, and also how efficient and effective is the current treatment line in curing and updating their knowledge on recent advances of their treatment options, in which the need for commitment to patient care can be attained. The impact of patient centric approach to treat diabetes is something the way healthcare industry is taking a shift to where not only the disease, but the cause is treated with a much more customized approach, dedicated for every individual.

ACKNOWLEDGEMENTS

It is my genuine pleasure to express my deep sense of thanks and gratitude to my mentor, my teacher Dr Sandeep Narula, Assistant Dean, School of pharmaceutical management IIHMR University Jaipur. His dedication and keen interest above all his overwhelming attitude to help his students had been solely and mainly responsible for completing my work. His advice, meticulous scrutiny, scholarly advice have helped me to a very great extent to accomplish this task.

I owe a deep sense of gratitude to Dr. Vivek Hattangadi for his keen interest at every stage of my research. His prompt inspiration timely suggestion with kindness, enthusiasm and dynamism have enables me to complete my thesis.

I profusely thank all my faculties of School of Pharmaceutical Management and all other faculties of IIHMR University for their coordination and cooperation and for their kind guidance and encouragement.

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ABBREVIATIONS

World Health Organization (WHO)

Millennium Development Goal (MDG)

National Program for Control of Diabetes, Cancer and Stroke (NPCDCS)

National Center for Biotechnology Information (NCBI)

CHAPTER 1- INTRODUCTION

In the global reference list 2020 of 100 core health indicators, the World Health Organization (WHO) included non-communicable disease, especially diabetes and hypertension, as a mortality indicator highlighting the emerging burden of these diseases in post Millennium Development Goal (MDG) agenda. To address the uprising burden of diabetes, it is needed to have a continuum of care model which provides a framework for the delivery of proper health care to population groups that is evidence based, comprehensive, measurable, and patient-centric. Under the National Program for Control of Diabetes, Cancer and Stroke (NPCDCS), a free mass screening of adult population on diabetes and hypertension was launched in the rural and urban areas in 100 districts and 33 cities of India. The response of the screening is encouraging but the statistics on the diseases are alarming.

According to a survey, 1 in 11 Indian adults have diabetes. 73 million cases of diabetes expected to grow 123 million by 2040. Almost 50% of these individuals remains undetected. Half of the people know they have this condition but never received proper treatments and get affected with other related illness. This is because of lack of awareness in the society about Diabetes and not receiving proper patient centric approach to the diabetic treatment.

A high prevalence rate of diabetes in economically and epidemiologically advanced in states such as Tamil Nadu and Kerala, because of high consumption of carbohydrates. One of the major limitations of addressing diabetes is found in linking suspected cases to early disease assessment and treatment. However, it is very important to detect this condition as the latest.

The **overall objective** of the proposed research is to improve early detection, timely diagnosis, and treatment of diabetes with a patient centric approach that would further contribute to improve morbidity and survival.

The **specific objectives** of the study is to:

1- Understand the current treatment pattern followed by the diabetes patients and its efficiency.

2- Understand the scope of patient centric approaches in the diabetes market.

BACKGROUND

Diabetes mellitus is a group of problems that affect your body's ability to use blood sugar (glucose). Because glucose is a good energy supply for the cells that make up muscle tissues and it is vital to your health. It is also the number one source of energy in the brain. The underlying cause of diabetes varies by type. However, no matter what type of diabetes you have, it can cause too much sugar in your blood. Too much sugar in the blood can cause extreme health problems.

Both type 1 diabetes and type 2 diabetes are chronic diabetes. Prediabetes and gestational diabetes are two possible reversible conditions. When your blood sugar level is higher than normal but not high enough to be classified as diabetes, you have prediabetes. It is a condition where the person have the high risk of getting diabetic. Also, unless proper steps are taken to prevent progression, prediabetes is often a precursor to diabetes. Diet, exercise, and non- pharmacological interventions can delay the onset of diabetes. Whereas gestational diabetes occurs during pregnancy but may resolve after the baby is delivered.

The prevalence of diabetes has increased from 108 million in 1980 to 622 million in 2020. The prevalence of diabetes among people over 18 years of age rose from 4.7% in 1980 to 12.5% in 2020. Low to medium level in rental country. Diabetic retinopathy, kidney failure, heart attack, stroke, and lower limb amputation are all common complications of diabetes. In 2020, diabetes directly caused 1.6 million deaths, while high blood sugar levels caused 2.2 million deaths. Almost half of all deaths caused by hyperglycemia occur before age 70. According to the World Health Organization, diabetes is the seventh leading cause of death in 2020.

Since each patient with diabetes has unique needs, a "patient-centered" approach ensures that treatment is tailored to their specific needs. In other words, patient-centered care is a strategy based on personal goals and priorities and how the disease fits into their lives. These findings assist in personalized strategies to help patients manage their disease over time, a crucial step for patients with progressive chronic diseases such as type 2 diabetes. Not only does this approach help treat the problem, but it also helps to improve patient literacy in health care. It is not about handing out a pill bottle, but about helping patients to better understand, analyze, and treat illnesses so they do not get out of hand.

CHAPTER 2 – REVIEW OF LITERATURE

Individualized blood glucose goals and hypoglycemic treatments are needed. Any type 2 diabetes treatment plan must begin with diet, exercise, and education. Combination therapy with 1-2 additional oral or injectable medications is feasible, with the aim of minimizing adverse reactions. When possible, all treatment decisions should be made in consultation with the patient, paying particular attention to their preferences, requirements, and values. An important focus of treatment should be to reduce overall cardiovascular risk says the **NCBI report** [1].

To increase patient participation in self-care activities, **the American Diabetes Association and the European Diabetes Research Association** recommend a people-oriented approach. People-centered diabetes care is associated with higher levels of patient arousal, better diabetes awareness, and small improvements in clinical outcomes. People-centered care can promote patient participation, but patient outcomes are not expected to change significantly in the short term; this is more like a habit. Diabetes patients need enough knowledge, motivation, skills, and confidence about diabetes to achieve this goal. The concept of "patient activation" meets these requirements.[2]

A report by **pharmaphorum** says that, in the next few years, the patient-centered concept is expected to become the mainstream in all aspects of the life science industry, including non-traditional industries such as early drug development and regulatory approval. Clear authorization is required in many patient-centered fields, and each field plays a unique and important role. In addition to big data, it is also critical to ensure that these methods pay attention to and respond to the patient's voice. There is inherent value in interacting with real patients and hearing their unique stories. Patients generally know their health well and have a unique perspective on how it affects their daily life and those around them. This patient listening also avoids the trap of treating patient groups as identical, which can happen even if smaller and smaller subgroups have been identified and classified [3].

The **Diabetes Care in General Practice** analyzed the impact of 6 years of structured self-care compared with conventional type 2 diabetes care. Quarterly patient visits are used to determine and track goals. Personalized treatment plan, in the form of indications, reviews, clinical guidelines and continuing medical education at the doctor. The patient centric approach resulted in low illness and lower risk for all cause mortality, diabetes related death, any diabetes related endpoint [4]

The global market for patient-centered healthcare is the new talk in town driven by new regulations, technological progress, population growth, patient expectations of treatment quality, reimbursement models, improved patient treatment outcomes, and cost-effectiveness. The prevalence of chronic diseases continues to increase whereas the demand life expectancy also

continues to increase. And patient enablement and empowerment also boost the growth of the global patient centric health care market. Therefore, to give attention to everyone in this ever-rising population, patient centric treatment will be the new face of healthcare industry says the research conducted by transparency group [5].

Diagnosing and treating diabetes in young people presents several unique challenges. Although type 1 diabetes is more common in children and adolescents, the incidence of type 2 diabetes is also increasing among young people, especially in certain ethnic groups. However, specific laboratory tests and imaging are required to confirm the diagnosis. In some cases, it is challenging to manage diabetes in children and adolescents due to age-specific issues and the more aggressive nature of the disease. However, with a good collaboration of the doctor and patient, a patient-centered approach that focuses on overall reduction of risk factors can help ensure the best possible level of diabetes control and prevention or delay of long-term complications of diabetes says **Dr. V Mohan** in his recently published research paper [6].

Hyperglycemia in patients with and without diabetes is associated with substantial increases in morbidity, mortality, and medical care costs. Professional societies recommend insulin therapy as the cornerstone of drug management. Intravenous insulin therapy is the treatment of choice in the intensive care unit. In a non-intensive care setting, various insulin regimens have been proposed to treat patients with hyperglycemia; however, a meta-analysis comparing different treatment regimens does not clearly support the benefit of any strategy. To achieve sufficient results, a patient centric approach needs to be followed apart from prescribing many medications to the patient says in **Indian Journal of Diabetes and Endocrinology** [7].

CHAPTER 3 - RESEARCH METHODOLOGY

The **specific objectives** of the study is to:

1- Understand the current treatment pattern followed by the diabetes patients and its efficiency.

2- Understand the scope of patient centric approaches in the diabetes market.

RESEARCH METHODOLGY

This is an exploratory study sought to address the void of treatment line provided to the diabetic patient and how effective is that in curing the condition and to understand how efficient patient centric approach will be in treating this condition in a future perspective, were studied in this research using descriptive statistics. Both qualitative and quantitative aspects have been considered in this research. The methodology used in this research is a self-administered questionnaire was provided to a sample of people who are at a risk of developing diabetes condition (prediabetes) and to another set of people who already have diabetes condition in their lives. This cross-sectional study was conducted from April to June 2021. The primary data was collected using a questionnaire. Google forms were used to disseminate questionnaires to pre-diabetic people and diabetes people across pan India location. There are total items in the questionnaire, which are a mix of Likert scaling techniques, yes/no questions, and descriptive techniques. Questionnaires were content evaluated by an expert academician, and comments were made to make it more objective-driven.

The main outcome metric is to measure how better will it be to take patients into confidence before initiating treatment, especially in lifestyle disease diabetes and how crucial it is to develop a personal rapport with patients/attendant while it is equally important to lay down facts bare on the table and make the patient compactable to react to the treatment line.

- Study type: Descriptive study
- Data source: Primary and secondary research
- Data collection technique: Survey
- Data collection tool: Researcher administered semi structured questionnaire.

Sample design:

- Target Population: people having diabetes and pre-diabetes condition.

- Sampling method: convenient sampling
- Sample size: 30 diabetes and 30 prediabetes
- Study location: PAN India

Data collection:

- Primary research
- Observation

QUESTIONAIRE FOR PREDIABETES

1. Is there a family history of diabetes?
   (A) Yes
   (B) No

2. Are you prone to diabetes?
   (A) Yes
   (B) No
   (C) Don't Know

3. Do you test your blood sugar levels (HbA1c test) regularly?
   (A) Yes
   (B) No

4. If yes, how often?
   (A) Once in a month
   (B) Once in every 6 months
   (C) Once in a year
   (D) Never

5. Do you have any health programs or diet to save you from diabetes in future?
   (A) Yes
   (B) No

6. Do you take any medication to save you from diabetes in future?
   (A) Yes
   (B) No

7. Have you had any awareness programs regarding diabetes diseases before?
   (A) Yes

(B) No

8. Patients with family history of diabetes, they're prone to diabetes. How does this makes you feel?
   (A) Afraid
   (B) Confused
   (C) Depressed
   (D) Sad
   (E) Upset
   (F) None of the above

QUESTIONNAIRE FOR DIABETES

1. How long have you known that you've diabetes?

2. Is there a family history of diabetes?
   (A) Yes
   (B) No

3. How often do you check your HbA1c test (blood sugar levels)?
   (A) Frequently
   (B) Occasionally
   (C) Rarely
   (D) Very rarely

4. What is the range of your HbA1c test?
   (A) 3.5 mmol/L TO 4.0 mmol/L
   (B) 5.0 mmol/L TO 7.0 mmol/L
   (C) 7.8 mmol/L TO 11.0 mmol/L

5. Do you have any-other health problems related to this?
   (A) Yes, please specify.
   (B) No

6. If yes, do you take any medication for this?

7. Do you take pills for your diabetes?
   (A) Yes
   (B) No

8. Do you take insulin?
   (A) Yes
   (B) No

9. If yes, I inject myself by:
   (A) Syringe, dose: _____ , time taken: _____
   (B) Insulin pen: _____, time taken: _____

10. How often do you see doctor?
(A) Once in 3 months
(B) Once in 6 months
(C) Once in 1 year
(D) Very rarely

11. Having diabetes makes me:
(A) Afraid
(B) Confused
(C) Depressed
(D) Sad
(E) Upset
(F) I'm ok with it

CHAPTER 4 – RESULTS

Results from prediabetes respondents:

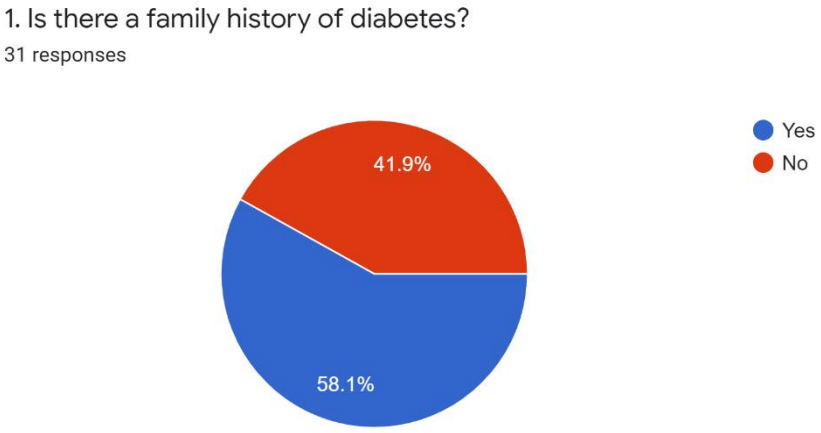

Fig 3.1

It is found that 58.1% of the survey population has got a family history of diabetes whereas the rest 41.9% has not.

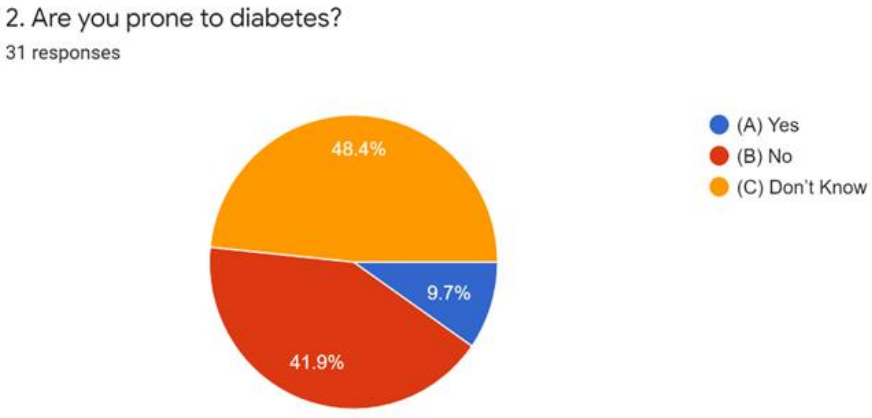

Fig 3.2

48.9% of the survey population do not know whether they are prone to diabetes or not whereas 41.9% of the total population renounced the statement and 9.7% counted on for being prone to diabetes.

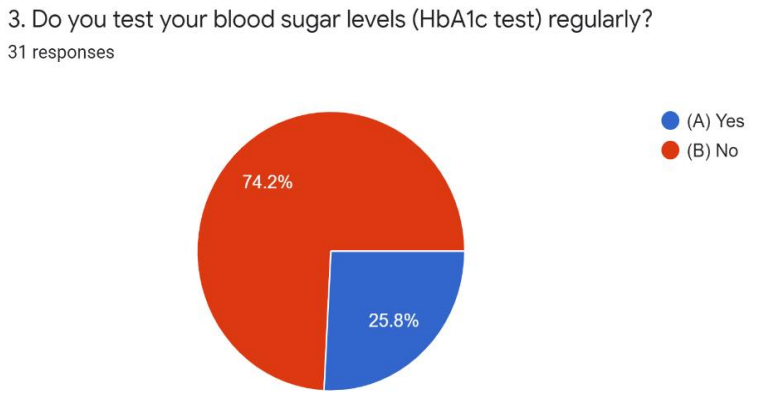

Fig 3.3

25.8% of those polled have been tested on a regular basis, while 74.2 percent have not.

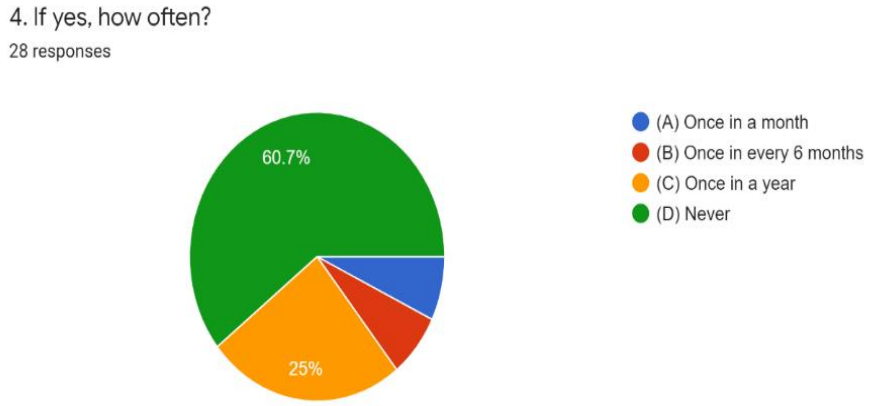

Fig 3.4

Out of the 25.8% population polled, 60.7% within that takes tests irregularly whereas 25% of that test once in a year and very least population follow the tests once in every 6 months or regularly in a month.

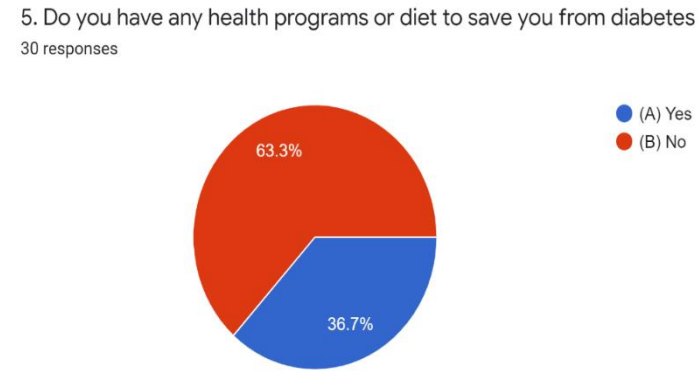

Fig 3.5

It is recorded that, 36.7% of the population follows some health programs to hold off diabetes in future whereas 63.3% of them does not follow any diet chart nor exercise.

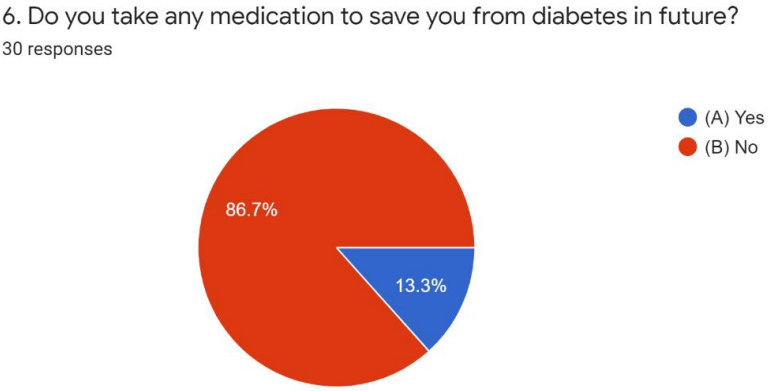

Fig 3.6

From all the survey population, 86.7% does not take any medications but a least population of 13.3% take up medications as a precaution.

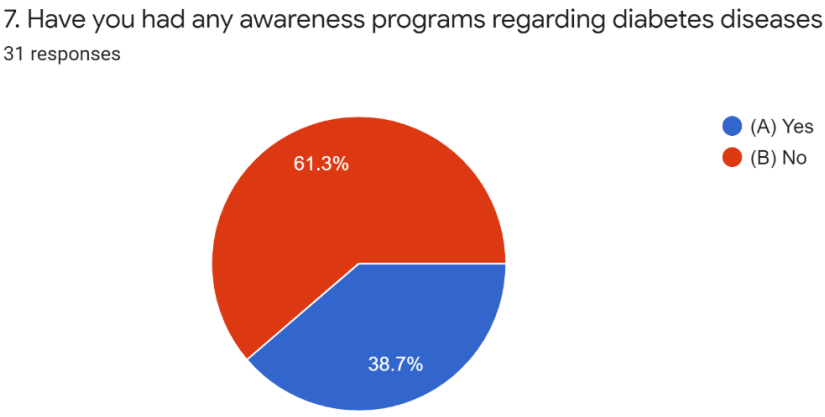

Fig 3.7

It is found that 61.3% of the population surveyed are least aware of the complications and fatefulness of diabetes whereas 38.7% are educated to an extend regarding how to act when they found they are diabetic.

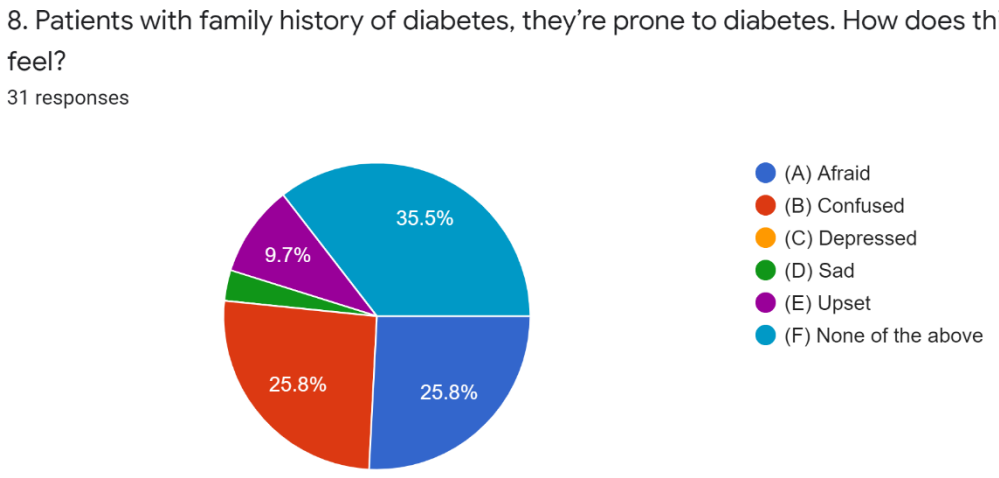

Fig 3.8

35.5% of the population responded they feels normal as it doesn't make any changes to their lives, but 25.8% are afraid by thinking of the complications that are going to follow up with and the rest of the population will feel confused, sad and upset if they get diabetic as anticipated.

Results from people with Diabetes condition:

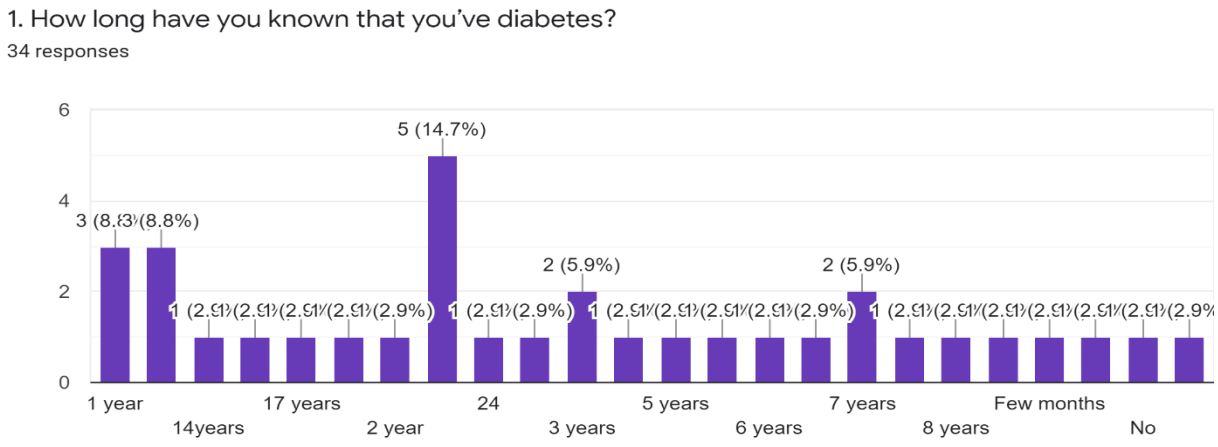

Fig 3.9

This graph variation shows more than half of the population surveyed are suffering from diabetes for more than last 2 years.

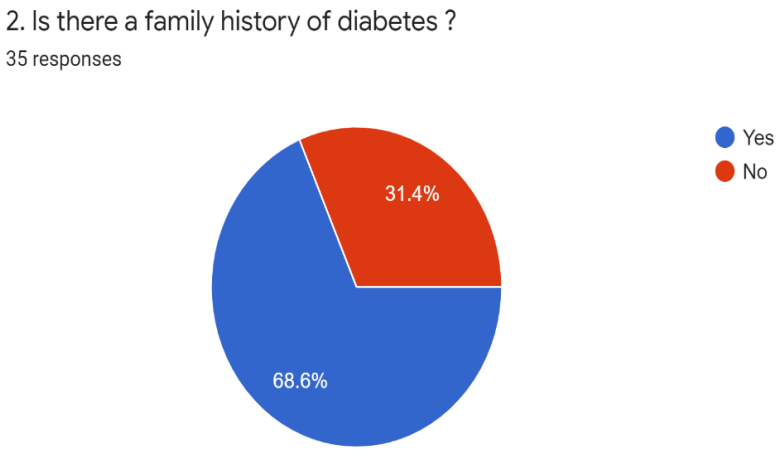

Fig 3.10

From the population surveyed, 68.6% of the respondents has got a family history of diabetes whereas others said its because of their unhealthy eating habits, lack of exercises & other reasons.

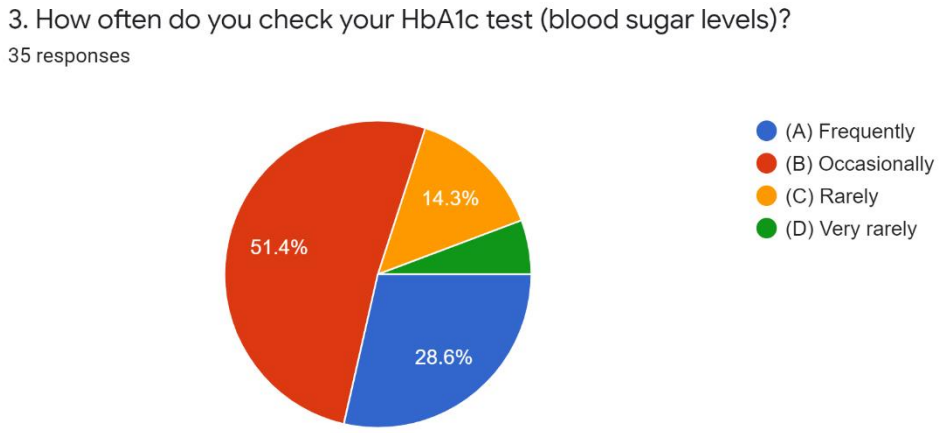

Fig 3.11

As showed in the statistics, 51.4% population go for a Hb1A1c test within a frequent period, 28.6% take tests occasionally and rest of them take it very rarely.

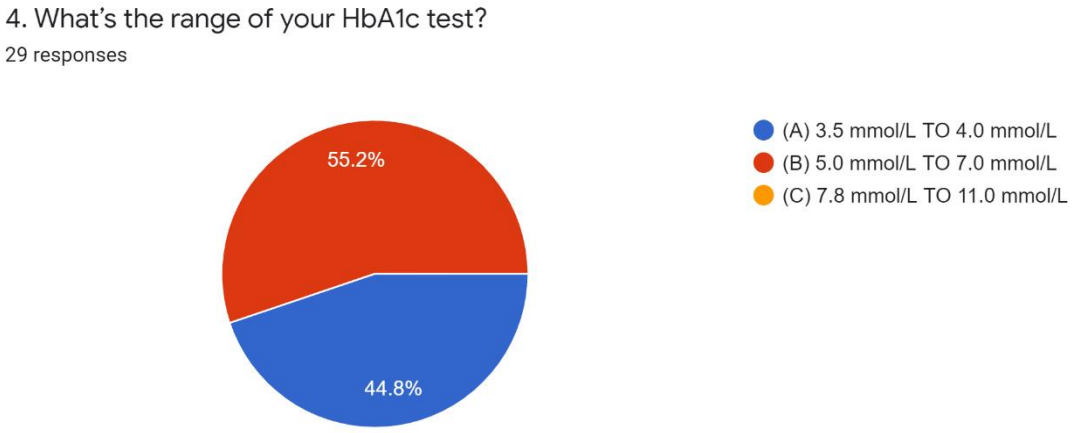

Fig 3.12

The test result of majority of the population ranges between 3.5mmol/L to 4.0mmol/L and rest 44.8% shows a range variation of 5.0mmol/L to 7.0mmol/L.

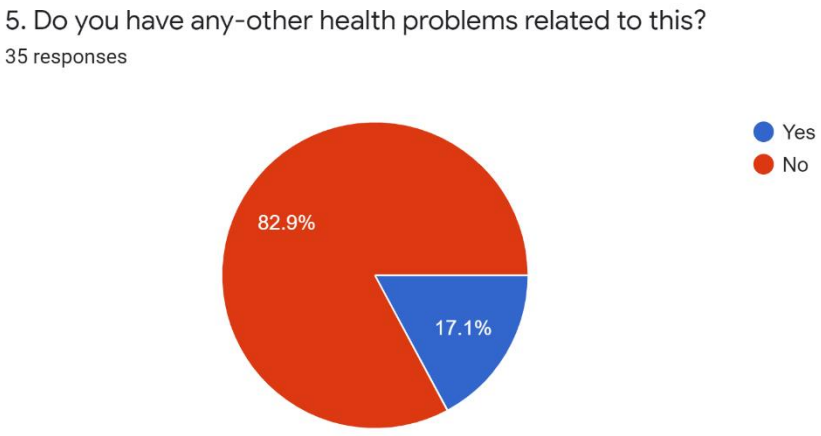

Fig 3.13

More than half of the population, around 82.9% is suffering from other health ailments related to diabetes, most of them stated cardiac problems, eye-sight related problem etc.

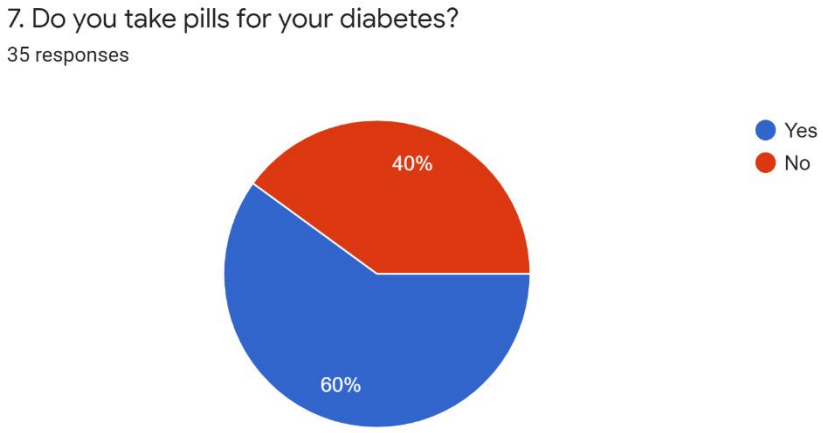

Fig 3.14

60% of the population from the sample size are taking medications as they noticed frequent variations in there glucose level, whereas rest 40% follow a healthy diet and exercises to control diabetes.

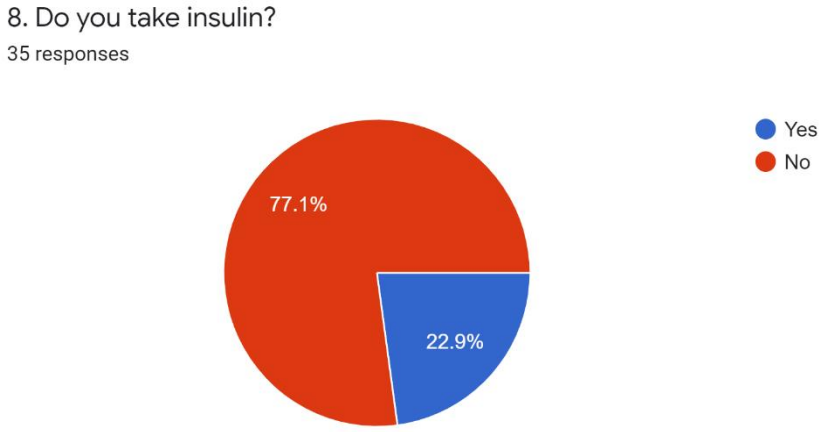

Fig 3.14

77.1% says they take insulin every day, while others follow medications and healthy eatery habit.

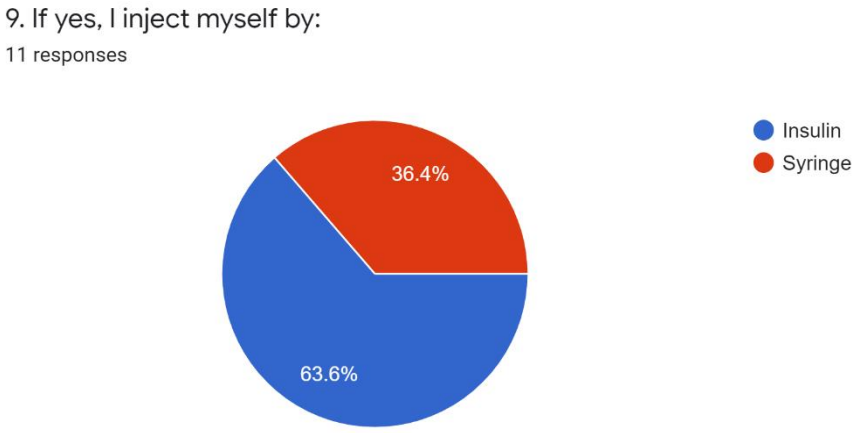

Fig 3.15

For people injecting insulin from the sample size, 63.6% respondents use insulin pen and rest 36.4% use normal syringes.

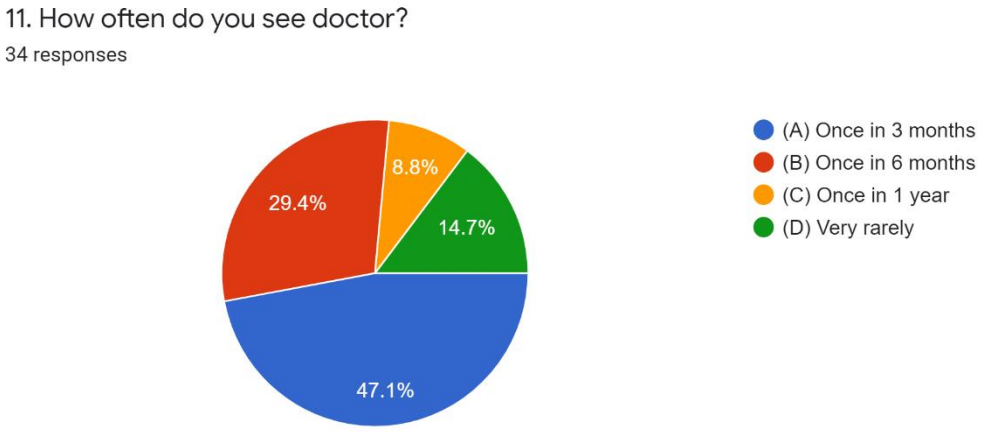

Fig 3.16

47.1% of the population surveyed visit the doctors once in 3 months, while 29.4% consult doctors once in every 6 months and rest of the population pays visits very rarely and rely more on the medications provided.

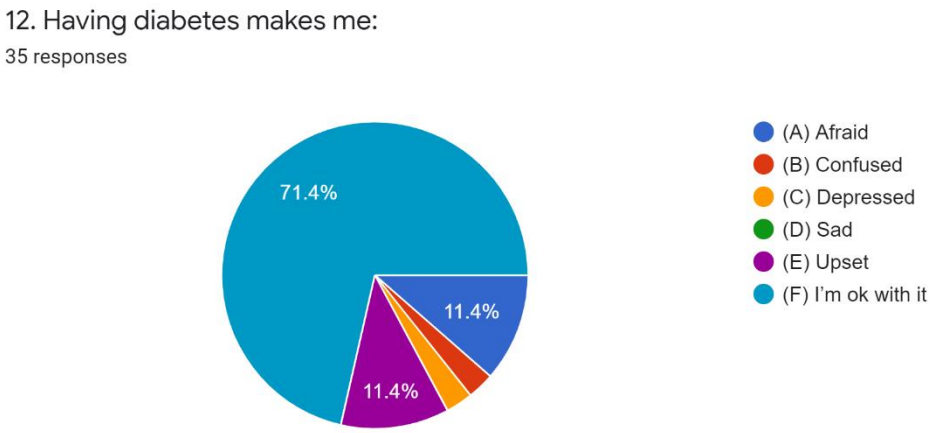

Fig 3.17

71.4% of the respondents having diabetes are very much afraid because of there condition, while others have a state of feeling of depression and confusion.

CHAPTER 5 – DISCUSSION

Diabetes is a condition which we cannot be prevented but, on an onset, it can be delayed more to an extent. But most of the people does not take it seriously which further leads to other severe health troubles. Lack of awareness is the core cause that led this to a dreadful situation. To treat diabetes, one should have a proper understanding with reference to their health condition. The factors for this condition are many. Therefore, before the treatment we need to analyze and understand the situation forehand dealing with it. Though there are many reasons for a person to be diabetic, from the above results, we can clearly say that the main root cause of diabetes is either hereditary or unhealthy living habits. Therefore, it is very crucial to detect the root cause before starting the treatment line. It is very important to have an early detection procedure so that we can fend off diabetes condition to a later stage. As if someone got a family history of diabetes, they could give a HbA1c test once in a certain period, preferably once in every 6 months, so that they can take necessary actions to postpone this condition. Apart from the basic treatment guidelines, diabetes is a disease that requires patient centric approach. As the root cause varies, treatment approaches should be different for different people.

For the people who are prone to or at the risk of getting into this condition should go for a preliminary test to understand their scope of getting affected. If they find the chances are high then they can follow up with a Hb1Ac tests once in a every frequent time and chart up a healthy dietary habit and takes necessary medications if needed, to laten this condition.

Whereas people who already knew they are diabetic, should strictly take up their condition seriously so that they can normalize their glucose level to an extent. If not, this can further lead to severe health conditions such as diabetic heart attacks, diabetic neuropathy, diabetic nephropathy, diabetic retinopathy, diabetic foot syndrome, diabetic dermopathy, maternally inherited diabetes and deafness etc. From the study we have conducted, most of the people are ailing with this condition more than 5 years. And follows a similar routine since the time being they diagnosed with diabetes but still got affected with the other related illness. Therefore, to treat this condition, we need to follow a patient centric approach where everyone should get different priorities based on their health condition. More than a treatment, it is important to create a healthy living routine to treat this condition. The study says people follow a constant routine for years to treat diabetic condition without any consultations in between. This needs to change. A proper diagnose to detect the root cause, regular testing with a frequent interval, healthy diet, exercises, proper dosage of medication with respect to the glucose level need to be followed.

The person undergoing this condition should have a clear idea about his health condition and have insights how to cop up with this. Therefore, it is very necessary to give awareness to people to show how important it is to treat diabetes with a patient centric approach.

CHAPTER 6- CONCLUSION

In this recent time, the healthcare industry is facing big challenges in the day-to-day basis. Therefore, it is very important for our modern world to take modern approaches to compact with the new popping up disease burdens. Since the population rate is increasing rapidly, it is a massive hurdle to endure quality treatment to all the people out there. Therefore, to make things ease and provide a quality and effective healthcare service, it is very necessary to transform our therapy pattern. Patient-Centricity being the new marketing model in the coming years in the healthcare industry, this study is primarily proposed to understand the scope and demand of patient centric approach in the diabetes market segment.

As our way of living shifts to another paradigm, lifestyle diseases, especially diabetes as we discussed in this study, are hitting us to the core with a big bang mortality rate all across the globe. In general, we follow a well-established protocol to treat diabetes since long. But from this study and many other research conducted in prior to states that every individual is different in their way of living therefore it is not fit for all to follow a generalized protocol to treat diabetes as that can sometimes leads to severe problems in the future front. However, at first it is of high priority to make people alert by understanding them the severity of diabetes and other related ailments regard to that. So that people will not backout from getting proper treatment line from this condition. Latening the diagnosis of diabetes can eventually lead to fateful conditions, even to death. Hence an early diagnosis can always pull off this condition to a more later stage of life. People who are diabetic need to understand the fact that this condition is not so dreadful as they are thinking, at the same time it is not as silly as to push off. Proper treatment and follow ups can always ease this condition if done properly. But following a universally accepted treatment is not the way to cure this. As this is a lifestyle disease, we need to focus much more on to our lifestyle while curing this condition. As a result, patient-centric approach needs to be followed, where the patient needs to be aware of the root cause that put him in this condition, on the other hand the doctor needs to provide the person proper medication with least adverse effects. A regular follow ups and testing need to be done with a regular frequency. More healthy diets and exercises that helps the diabetic person need to be included in his daily routine. The mission and goal of the treatment should be aligned with patient goals, transparency and fast delivery model should be followed, patient and family should be included in the discussion, their viewpoints should be respected and valued, physical comfort and emotional well-being should be the prime priorities and principles that need to be considered while following patient centric approach. Morethan a treatment session, this can bring value and evident information to the concerned person on how to deal with this condition properly. Studies claim that this approach can also prevent the person from getting exposed to other related ailments followed by diabetes. Also, for people who are at the risk of developing stage, an early detection can delay the condition for the time being or can lessen up the severity.

As a conclusion, patient centric approach is something the way healthcare industry is taking a shift to where not only the disease, but the cause is treated with a much more customized approach, dedicated for every individual.

LIMITATION OF THE STUDY

- Due to the pandemic and time constraint the present study was restricted to a limited number of samples.

- There is a possibility that the responses offered by the respondents can be biased.

- The study reflects current data, not forecast data.

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