SJIF Impact Factor: 5.464

WORLD JOURNAL OF ADVANCE HEALTHCARE RESEARCH

ISSN: 2457-0400
Volume: 4.
Issue: 5.
Page N. 59-64
Year: 2020

Original Article www.wjahr.com

A SURVEY ON COMMON BELIEFS ON NUTRITION THERAPY AND ITS TREATMENT AMONG PEOPLE WITH DIABETES

Deepthi S.*[1], Shilpa C.[1] and Dr. R Anil Kumar[3]

[1,2]Dietician, Karnataka Institute of Endocrinology and Research, Bangalore.
[3]Associate Professor, Head of Department of Endocrinology, Karnataka Institute of Endocrinology and Research, Bangalore.

Received date: 10 September 2020 **Revised date:** 30 September 2020 **Accepted date:** 20 October 2020

***Corresponding author: Deepthi S.**
Dietician, Karnataka Institute of Endocrinology and Research, Bangalore.

ABSTRACT

Medical nutritional therapy in Diabetes is influenced by many beliefs. The study intended to find out the common beliefs followed by individuals with diabetes and to understand the difference of opinion in belief by urban and rural population. A cross sectional study was conducted in KIER Campus involving 200 randomly selected people aged between 21 to 80 years with Diabetes using questionnaire method. The total number of 21 beliefs were identified and analyzed. The belief related to skipping of prescribed anti-diabetic medication which they take regularly on the day of blood test was significantly higher (P=0.007). The participants expressed highest belief related to consumption fruit juices without adding sugar (Mean = 3.57±1.44). The lowest belief was seen in belief related non vegetarian food consumption (Mean value: 2.16±1.16) The respondents belonging to urban population expressed highest belief related to overconsumption of sugar (percentage =62) and the lowest belief related to non-vegetarian food consumption (percentage = 33) The respondents belonging to rural population expressed highest belief related to non-vegetarian food consumption (percentage = 67) and lowest belief related to overconsumption of sugar (percentage = 33)*:*The study concludes that common beliefs which may not be scientifically proven is wide spread irrespective of education and socio-economic status in the study population which calls for a proper address from medical team by educating people in a right path. Educating common people through counselling and handing over printed materials can be considered.

KEYWORDS: Nutrition Beliefs, Nutritional Myths, Food Preferences, Medical Nutrition Therapy in Diabetes.

INTRODUCTION

Diabetes is one of the fastest growing health challenges of the 21st century. The number of adults living with diabetes has tripled over the past 20 years. In 2000, the global estimate of adults living with diabetes was 151 million. By 2009 it had grown by 88% to 285 million. Today, 463 million people are living with diabetes**.** A further 1.1 million children and adolescents under the age of 20, live with type 1 diabetes.

A decade ago, in 2010, the global projection for diabetes in 2025 was 438 million. With over five years still to go, that prediction has already been surpassed by 25 million. IDF estimates that there will be 578 million adults with diabetes by 2030, and 700 million by 2045.

The increasing prevalence of diabetes worldwide is driven by a complex interplay of socioeconomic, demographic, environmental and genetic factors. The continued rise is largely due to an upsurge in type 2 diabetes and related risk factors, which include rising levels of obesity, unhealthy diets and widespread physical inactivity.

Growing urbanization and changing lifestyle habits (e.g. higher calorie intake, increasing consumption of processed foods, sedentary lifestyles) are contributory factors for the increasing prevalence of type 2 diabetes at a societal level. While global prevalence of diabetes in urban areas is 10.8%, in rural areas it is lower, at 7.2%. However, this gap is closing, with rural prevalence on the rise.[1]

There are different barriers and hurdles in the management of diabetes. Effective management of diabetes not only requires comprehensive medical care

and diabetes education but also the self-care by the patients. A person's self-care practices are influenced by their knowledge of diabetes.[2]

Diet has been the mainstay of therapy in diabetes for centuries. A number of factors influence glycemic response to food, including the amount of carbohydrate,[3] type of sugar (glucose, fructose, sucrose and lactose),[4] nature of the starch (amylose, amylopectin and resistant starch),[5] cooking and food processing (degree of starch gelatinization, particle size, cellular form),[6] and food structure,[7] as well as other food components (fat and natural substances that slow digestion—lectins, phytates, tannins, starch-protein and starch-lipid combinations).[8] The dietary practices are surrounded by many myths and misconceptions.

Myths and misconceptions are part of any culture's identity. These myths and misconceptions have a significant influence on the day-to-day life including the search for treatment in times of illness.[9] A number of studies have reported that misconceptions and inadequate knowledge present significant barriers to effective management of diabetes.[10,11]

Myths are defined as stories shared by a group of people which are part of their cultural identity. They have a strong influence in the life of individuals and their way of living including seeking treatment during illness. Therefore, understanding the myths and misconceptions about the disease, like diabetes mellitus, is important in providing excellent care and health education to both patients and healthy individuals.[12]

There has been little research to understand these beliefs. Not many studies have been done and we do not have much data related to this subject.[13] In the present study, an attempt has been made to find out the prevalence of common myths about diabetes and its treatment.

The Objectives of this study was to find out common beliefs followed by individuals with diabetes and to understand the difference of opinion in belief by urban and rural population.

Review of literature

- A study done on Dietary Beliefs and Management of Older American Indians with Type 2 Diabetes reveals that American Indian older adults face a variety of challenges to dietary management of T2DM. Four themes regarding T2DM dietary beliefs and T2DM dietary management emerged from the analyses: diet changes, portion control, health care professional and family influence, and barriers to healthy eating.[14]
- A cross sectional study done on Anti-diabetic drug use trends in patients with T2DM and chronic kidney disease (CKD) revels that use of particular anti-diabetic medications in patients with CKD changed noticeably over the years, most in accordance with guidelines and regulatory decisions. Gaps in quality of care still exist, which warrants increasing awareness and implementing programs to mitigate inappropriate use.[15]
- A study done on Dietitians experiences and perspectives regarding access to and delivery of dietetic services for people with T2DM concluded that dietetic consultation improves clinical outcomes for T2DM and the Government initiatives should focus on improving the equity of access to dietetic services.[16]
- A study done on Nutrition facts and myths revealed that taking responsibility for one's life, among other factors, means also considering what to eat and which nutrition pattern to follow. Everyone needs to think about what they put on the plate and which ingredients should be avoided. Food, as such, will never be a drug or medication, like a pain-killing tablet relieving pain in a short amount of time, for example. However, proper nutrition is our ally in the prevention of diseases, maintaining balance in our body and our mind. By following the main principles of a healthy diet, the physiological homeostasis can be managed, as well as faster recovery from disease achieved. This review is aimed at summarizing basic principles of nutrition recommendations and at empowering stakeholders to be able to communicate to their patients and customers healthy and sustainable nutrition choices through the personalized advice.[17]
- In the study, Traditional Medicine and Its Role in the Management of Diabetes Mellitus: "Patients' and Herbalists' Perspectives"140 patients questionnaire who were attending diabetic clinics, were interviewed using a structured conducted focus group discussions with an additional 20 diabetic patients, and conducted in-depth interviews with 8 local herbalists. The majority of the diabetic participants believed that diabetes is caused by a high-carbohydrate diet. Of the 140 participants who answered the questionnaire, 67.2% reported using traditional medicines to manage their diabetes, including 58.6% who reported using both conventional medicines and traditional medicines. Some participants believed that combining conventional and traditional medicines improved the effectiveness of treatment. Reasons given for using traditional medicines included the high cost of conventional treatment and the availability and accessibility of the traditional medicines.[18]

METHODS

Study design and Setting

Cross sectional study was conducted in outpatient department of Karnataka Institute of Endocrinology and Research, Bangalore, India to assess the prevalence of beliefs related to diabetes and its treatment.

Sample size and Participants

- About 200 randomly selected people with diabetes aged 21-80 years and without renal or cardiac problems were included in the study.
- The questionnaires were orally asked and responses were recorded in the questionnaire.

Data Sources and Data Collection methods

- Opinion about common beliefs about nutrition therapy and its treatment among people with diabetes was analyzed using questionnaire. The beliefs focused mainly on food selection of people with diabetes. The respondents gave their opinion using "Yes", "No" and "Maybe" options.
- Each study subject was explained the protocol of the study and was asked for consent to participate. A pretested semi structured interview schedule containing 21 questions regarding knowledge and beliefs about diabetes and its treatment was used to get information from the study group.
- A pretest was conducted on 20 random participants to know whether the study questionnaire was appropriate and accepted.
- The interview schedule was prepared in both English and Kannada (the local language) and tested on separate group of patients and validated with the help of language and medical experts.
- Each interview took an average of 15 minutes. Only after completion of data collection from one subject was the next subject enrolled. All the study subjects were new patients to avoid repetition. Each filled interview schedule was rechecked for any missing information.

Statistical methods

The data was collected over a period of 4 months. The collected data was analyzed using statistical package SPSS 11.0. For descriptive analysis, mean and percentages were calculated. Univariate analysis was performed for comparison of beliefs among gender & population and p-value was calculated to determine statistical associations.

RESULTS AND DISCUSSIONS

A total of 200 randomly selected people with diabetes were interviewed with a pretested questionnaire containing 21 questions. In the study about 59%(118) were males and 41%(82) were females. The mean age of the participants was 51.51±13. 52.5%(105) were from rural and 47.5% (95) were from urban.

The details of age, gender and regional distribution is given in table 1.1, 1.2 and 1.3. The majority of the subjects belonged to the age group 51-60 years. About 52.5 % participants belonged to rural regions and 47.5% participants were from urban regions.

Table 1.1: Age distribution of subjects.

Age Group	No. of subjects	Percentage
21-30	13	6.5
31-40	33	16.5
41-50	42	21.0
51-60	54	27.0
61-70	45	22.5
71-80	13	6.5
Total	200	100.0

Mean ± SD: 51.51±13.01

Table 1.2 - Gender distribution of subjects.

Gender	No. of subjects	%
Male	118	59.0
Female	82	41.0
Total	200	100.0

Table 1.3 - Region distribution of subjects.

Region	Gender		Total
	Male	Female	
Rural	61(51.7%)	44(53.7%)	105(52.5%)
Urban	57(48.3%)	38(46.3%)	95(47.5%)
Total	118(100%)	82(100%)	200(100%)

The total number of 21 beliefs were analyzed. The p values ranged from 0.980 to 0.007.

The belief related to skipping of prescribed anti-diabetic medication which they take regularly on the day of blood test was significantly higher (P=0.007, "Regular anti diabetic medicines to be avoided on the day of blood tests"). (Figure1.1)

The participants expressed highest belief in belief related to consumption fruit juices without adding sugar (Mean = 3.57±1.44, "People with diabetes can take fruit juices without adding sugar"). (Figure1.2) The lowest belief was seen in belief related non vegetarian food consumption (Mean value: 2.16±1.16, "People with diabetes can consume non-vegetarian food in larger quantities" (Figure1.3)

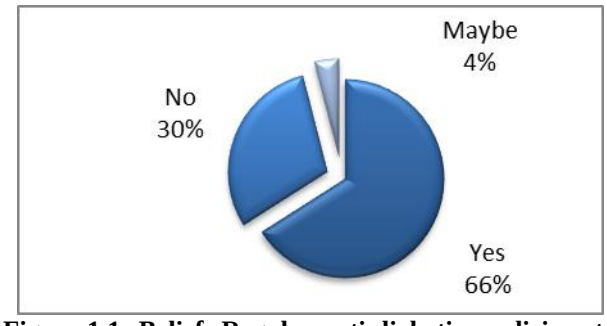

Figure 1.1: Belief: Regular anti diabetic medicines to be avoided on the day of blood tests.

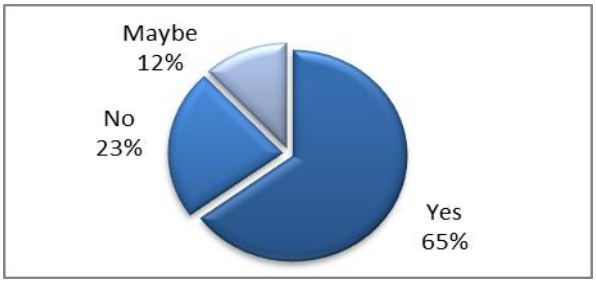

Figure 1.2: Belief: People with diabetes can take fruit juices without adding sugar.

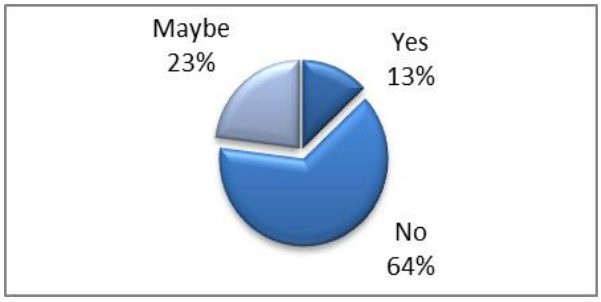

Figure 1.3: Belief: People with diabetes can consume non-vegetarian food in larger quantities.

The male respondents had highest level of belief related to consumption of fruit juices without adding sugar (Mean = 3.60±1.45, "People with diabetes can take fruit juices without adding sugar") and lowest level of belief related to skipping of meal (Mean = 2.08±1.46, "You can skip any meal of the day").

The female respondents had highest level of belief related to consumption of honey and jaggery as alternatives for sugar (Mean =3.62±1.41, "Honey and jaggery are alternatives for sugar") and lowest level belief related to non-vegetarian food consumption (Mean= 2.02±1.03, "People with diabetes can consume non-vegetarian food in larger quantities").

The respondents belonging to urban population expressed highest belief related to overconsumption of sugar (percentage = 62, "Diabetes is caused by over consumption of sugar")(Figure1.4) and lowest belief related to non-vegetarian food consumption (percentage = 33, "People with diabetes can consume non-vegetarian food in larger quantities"). (Figure1.5)

The respondents belonging to rural population expressed highest belief related to non-vegetarian food consumption (percentage = 67, "People with diabetes can consume non-vegetarian food in larger quantities") (Figure1.5) and lowest belief related to overconsumption of sugar (percentage = 33, "Diabetes is caused by over consumption of sugar"). (Figure1.4)

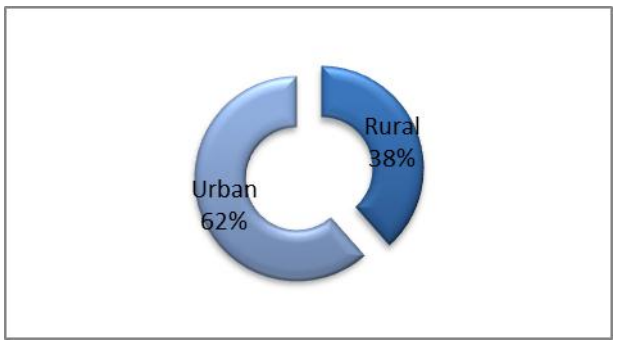

Figure 1.4: Belief: Diabetes is caused by over consumption of sugar.

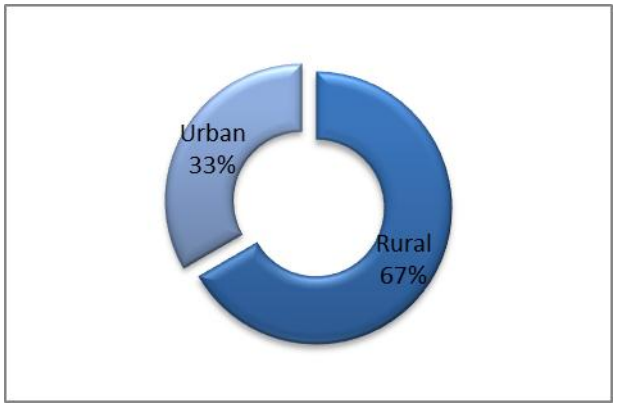

Figure 1.5: Belief: People with diabetes can consume non-vegetarian food in larger quantities.

Table 2.1: Gives the details of mean and p values.

Items	Gender		Total	P value
	Male	Female		
Being overweight will eventually lead to type 2 diabetes	2.95±1.50	2.77±1.48	2.88±1.49	0.400
Diabetes is caused by over-consumption of sugar	2.69±1.39	2.49±1.38	2.61±1.39	0.301
People with diabetes need a special diet	2.82±1.32	2.87±1.34	2.84±1.33	0.819
You can skip any meal of the day	2.08±1.46	2.26±1.44	2.16±1.45	0.412
Fasting keeps blood glucose in control	2.38±1.47	2.63±1.48	2.49±1.47	0.234
Honey and jaggery are alternatives for sugar	3.19±1.52	3.62±1.41	3.37±1.49	0.042+
Avoiding sugar intake is the key for diabetes control	2.60±1.28	2.61±1.33	2.61±1.30	0.966
Sweeteners are the better alternatives for sugar	2.65±1.25	2.59±1.39	2.62±1.31	0.734
People with diabetes can take fruit juices without adding sugar	3.60±1.45	3.51±1.44	3.57±1.44	0.668
Consumption of Ragi ganji is a good option for people with diabetes to control blood glucose levels.	3.36±1.48	3.24±1.50	3.32±1.48	0.573
Avoiding rice is mandatory for people with diabetes	2.43±1.42	2.46±1.40	2.45±1.41	0.878

People with diabetes can consume non-vegetarian food in larger quantities	2.25±1.24	2.02±1.03	2.16±1.16	0.185
People with diabetes can consume fruits in larger quantities	2.26±1.31	2.18±1.17	2.23±1.25	0.658
Salty biscuits and breads have no effect blood glucose levels of people with diabetes	2.83±1.47	2.98±1.36	2.89±1.42	0.480
Deserts and sweets have should be avoided by people with diabetes	2.69±1.32	2.52±1.45	2.63±1.38	0.390
Consuming methi (Fenugreek) cures diabetes	3.11±1.36	3.16±1.44	3.13±1.39	0.809
Bitter food items control blood glucose levels	3.16±1.47	3.34±1.39	3.24±1.44	0.384
Medicine can compensate over/under consumption of food	2.36±1.31	2.24±1.35	2.32±1.32	0.527
Poori made of wheat is a good breakfast option	2.65±1.50	2.54±1.46	2.61±1.48	0.588
All those with diabetes should follow same diet	2.09±1.20	2.10±1.16	2.10±1.18	0.980
Regular anti-diabetic medicines to be avoided on the day of blood tests	3.47±1.77	2.78±1.74	3.19±1.79	0.007**

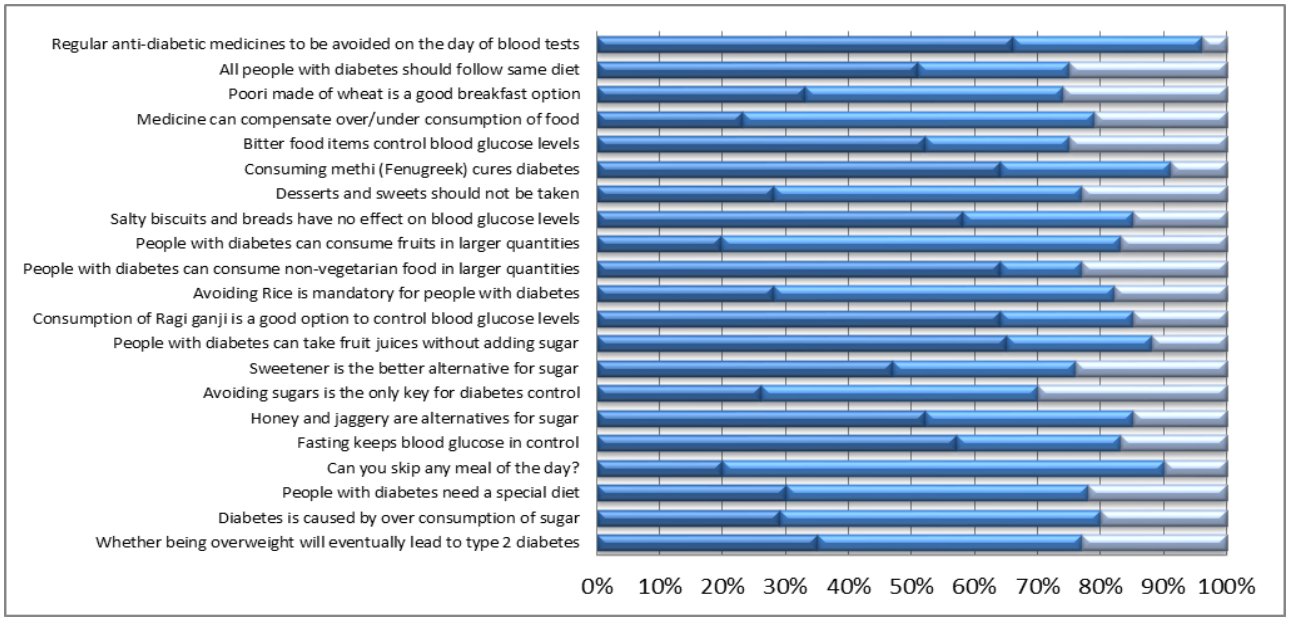

Figure 1.6: Gives the summary of responses from the participants and Figure 1.7 gives the summary belief of urban and rural population.

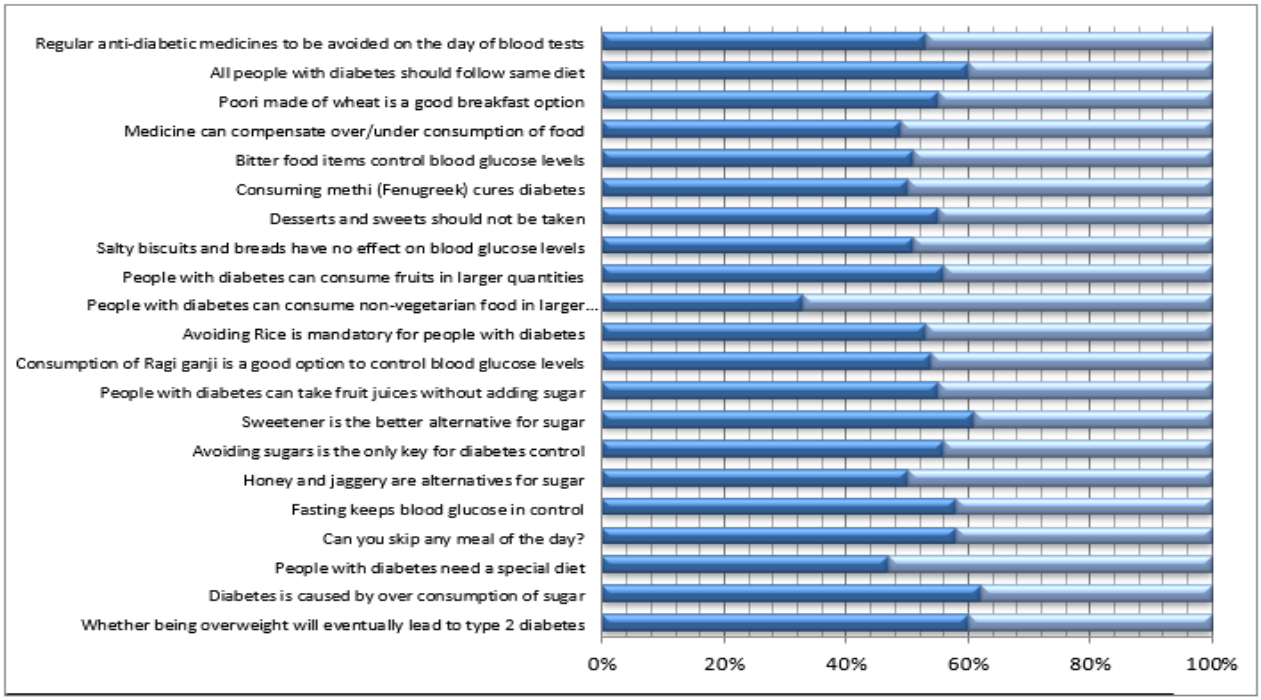

Figure 1.7

CONCLUSION

The common beliefs about nutritional therapy and its treatments among people with diabetes which may not be scientifically proven is wide spread in general population, irrespective of education and socio-economic status. This calls for a proper address from medical team by educating people in a right path. Educating common people through counselling and handing over printed materials can be considered. The mass media like newspapers and television can serve the purpose well. Newspapers can have a separate column for beliefs and truths related to diabetes. The television can advertise the facts which are related to diabetes which will reach every nook and corner. The awareness should be created in such a way that it achieves a state of positive health. Children should be educated about nutrition in schools and a subject on importance of nutrition in obesity, diabetes and other lifestyle diseases should be emphasized.

LIMITATIONS

This study has some limitations due to small sample size. The study was conducted at only one center (Karnataka Institute of Endocrinology and Research). The study did not include duration of diabetes and its importance in level of belief. This study did not include follow-up interviews to know existence of beliefs after completion of the study.

Interpretation

The present survey has attempted to analyze the common beliefs about nutrition therapy and its treatment among people with diabetes. Education about the correct interpretation of the beliefs was given at the end of the interview.

Future research

Further research needs to be done with this regard with more samples and follow-up.

ACKNOWLEDGEMENT

We are gratified to Karnataka Institute of Endocrinology and Research, Bangalore, India for allowing us to conduct the present study. Our sincere thanks to Dr. Shilpa Varma, Mr. Siva Kiran for their guidance and Mr. Suresh KP for statistical analysis.

REFERENCES

1. IDF Diabates Atlas 9th Edition, 2019.
2. Via P, Salyer J. Psychosocial self-efficacy and personal characteristics of veterans attending a diabetes education program. Diabetes Educ, 1999; 25: 727-737.
3. Gannon MC, Nuttall FQ, Westphal SA, Fang S, Ercan-Fang N. Acute metabolic response to high-carbohydrate, high starch meals compared with moderate-carbohydrate, low starch meals in subjects with type 2 diabetes. Diabetes Care, 1998; 21: 1619–1626.
4. Determinants of diet glycemic index calculated retrospectively from diet records of 342 individuals with non-insulin-dependent diabetes mellitus. Am J Clin Nutr, 1994; 59: 1265–1269.
5. Rate of starch hydrolysis in vitro as a predictor of metabolic responses to complex carbohydrate in vivo. Am J Clin Nutr, 1981; 34: 1991.
6. Factors affecting the rate of hydrolysis of starch in food. Am J Clin Nutr, 1981.
7. The influence of food structure on postprandial metabolism in patients with NIDDM. Am J Clin Nutr, 1995; 61: 837–842
8. Hughes TA, Atchison J, Hazelrig JB, Boshell BR. Glycemic responses in insulin-dependent patients with diabetes: Effect of food composition. Am J Clin Nutr, 1989; 49: 658–666 Adler E, Paauw D
9. Medical myths involving diabetes. Prim Care, 2003; 30: 607–18 Searle A, Wetherell MA et al.
10. Do patients' beliefs about type 2 diabetes differ in accordance with complications: An investigation into diabetic foot ulceration and retinopathy. Int J Behav Med., Aikens JE, Piette JD, 2008.
11. Diabetic patients' medication underuse, illness outcomes, and beliefs about anti hyperglycemic and antihypertensive treatments. Diabetes Care. Adler E, Paauw D., 2009.
12. Medical myths involving diabetes. Prim Care. 2003.
13. Myths about diabetes and its treatment in North Indian population Mridula Rai and Jugal Kishore.
14. Dietary beliefs and management of older American Indians with type 2 diabetes RT Goins, J Jones, B Wincheste Journal of nutrition Elsevier, 2019.
15. Antidiabetic drug use trends in patients with type 2 diabetes mellitus and chronic kidney disease: A cross-sectional analysis of the National Health and Nutrition D Gor, BS Gerber, SM Walton, 2020.
16. Dietitians' experiences and perspectives regarding access to and delivery of dietetic services for people with type 2 diabetes mellitus George Siopis StephenColagiur i.
17. Nutrition – facts and myths; University of Zagreb Faculty of Pharmacy and Biochemistry, Department of Medical Biochemistry and Hematology, HR-10000 Zagreb, Croatia.
18. Traditional Medicine and Its Role in the Management of Diabetes Mellitus: "Patients' and Herbalists' Perspectives" Rose Kasole, Haikael D. Martinand Judith Kimiy.