



Knowledge, attitudes and practices (KAP) of diabetic patients and dietitians regarding natural anti diabetic agents

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Abstract: Diabetes mellitus (DM) is a chronic progressive metabolic disorder characterized by hyperglycemia mainly due to absolute (Type 1 DM) or relative (Type 2 DM) deficiency of insulin. The side effects from pharmaceutical agents lead to the promotion of the use of natural therapies as an alternative. The present study assessed the knowledge, attitudes and practices (KAP) of diabetic patients and dietitians regarding non-conventional natural anti-diabetic agents. A survey was conducted on 102 diabetic patients (49 females and 53 males) and 25 practicing dietitians, purposively selected from various clinics. Data was collected on KAP regarding consumption trends of non-conventional anti-diabetic agents, benefits and side effects experienced, dosage and method of consumption etc., using a rapid assessment questionnaire. The data collected was evaluated using Excel 2007. The results shows that around 48% of the diabetes patients especially those with consistently high blood sugar levels preferred non conventional anti-diabetic agents including Fenugreek seeds, *Momordica charantia*, jamun seeds, Insulin leaf etc., in addition to the drugs, out of which, 79% enjoyed the clinical benefits such as relief from complications, reduced drug dosage etc., with around 13% experiencing side effects such as acidity, indigestion etc. Only 15% knew the correct dosage and method of consumption. All the dietitians were well aware of the effective natural anti diabetes remedies. Majority of them preferred to prescribe these agents as an adjunct with pharmaceutical therapies. Using natural approaches to control hyperglycemia is an age-old practice and has been part of Indian culture for many years. Several natural agents have been scientifically proved to be effective in the management of diabetes and hence, there is a need to create awareness about the same among the patients as well as dietitians.

Key words: *Momordica charantia*, jamun seeds, Insulin leaf

Introduction

Diabetes mellitus (DM) is a chronic progressive metabolic disorder characterized by hyperglycemia mainly due to absolute (Type 1 DM) or relative (Type 2 DM) deficiency of insulin. It is also one of the most prevalent health concerns in our country with the prevalence observed across various strata

of society i.e. urban or rural/lower or upper socioeconomic groups, and also persons of different age groups. The side effects from pharmaceutical agents lead to the promotion of the use of natural therapies to handle hyperglycemia as an alternative. The present project studied the consumption trends of the non-conventional anti-diabetic agents among



diabetic patients and dietitians using a rapid assessment questionnaire.

Methodology

A survey was conducted on 102 diabetic patients (49 females and 53 males) and 25 practicing dietitians, purposively selected from various clinics. Data was collected on KAP regarding consumption trends of non-conventional anti-diabetic agents, benefits and side effects experienced, dosage and method of consumption etc., using a rapid

assessment questionnaire. The data collected was evaluated using Excel 2007.

Results & Discussion:

Out of the 102 participants, 49 were females and 53 were males. About 26 participants were diabetic for less than 5 years and 76 participants were diabetic for over five years. The most common line of treatment followed was that of hypoglycemic drugs as depicted in the graph below:

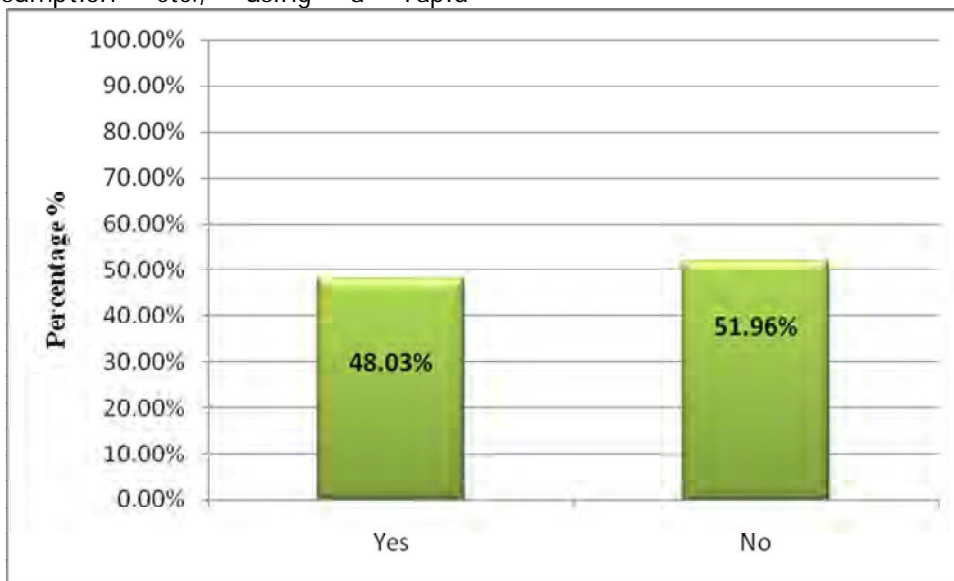


Fig- 1: Consumption of non-conventional anti-diabetic agents among the participants

1. Natural remedies are considered as the safest methods to cure or control an illness. Since the past few years there has been an exponential growth in the field of herbal medicine and natural therapies and they are gaining popularity both in developing and developed countries because of their natural origin and less side effects (<http://www.ncbi.nlm.nih.gov/pmc/arti>

cles/PMC2275761) . However, natural therapeutic agents for diabetes are consumed without the consultation of a medical practitioner (<http://www.ncbi.nlm.nih.gov/books/NBK92755/>). Majority of the participants reported that they were enjoying benefits from the consumption of non-conventional anti-diabetic agents.



Table-1: List of non-conventional anti-diabetic agents consumed by participants

Names of the antidiabetic agents			
Fenugreek seeds	Moringa leaves	Surthi Diab-powder (Aegle mermelos, Gymnema sylvestre, Euginia jambolana, Catharanthus roseus)	Aloe vera
Insulin Leaf	Haldi powder	Methi Leaves	Okra
Cinnamon	Kaali Jeera	Jamun seeds/ juice	Stevia leaves
Kadu (powder/ leaves)	Avla powder	Flaxseeds	Fresh Tumeric
Paneer Phul	Amla Syrup	Jeera	
Karela	Green tea	Garlic	
Kheera/cucumber	Doodhi	Durva	
Ginger	Neem Powder	Dialert	

Relief from complications like burning sensation in feet, excessive thirst, urination and hunger was reported by some participants. Majority of the consumers of non-conventional agents reported overall improvement in the quality of life expressed as feeling of wellness. Reduction in drug dosage was a very positive outcome of the agents followed by relief for complications. Several researchers

reported hypoglycemic potential of various agents such as Moringa oleifera (Tahiliani P., Kar, 2000), cumin extracts (Mutaa et al, 2013), cucumber (Sharmin et al, 2013), turmeric (Arun and Nalini , 2002) and fenugreek seeds (Bordia A, Verma SK, Srivastava KC., 1997; , Sharma RD, Sarkar A, Hazra DK, 1996; Sharma RD, Raghuram TC, Rao NS,1990).

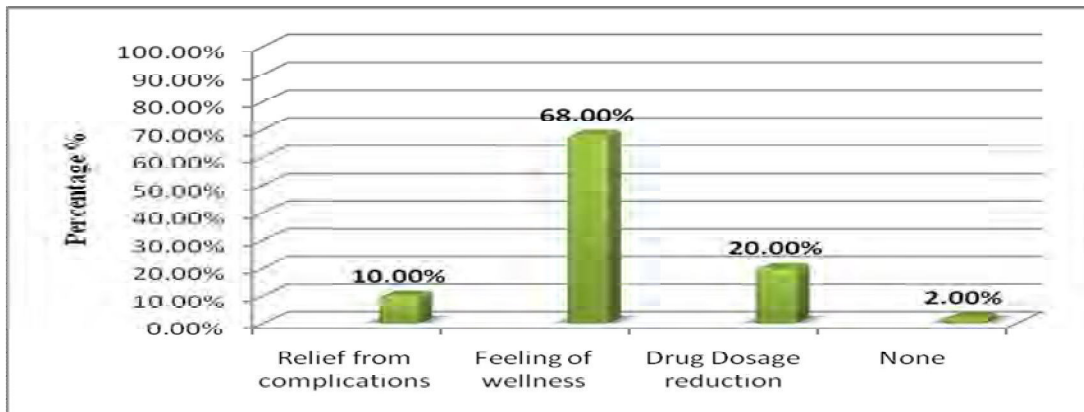


Fig -2: Benefits experienced by the participants



Awareness of dietitians on non conventional anti diabetic agents:

All of the dietitians surveyed were aware of several non-conventional anti-diabetic agents as shown in Table no-2.

Table-2: Recommended dose of nonconventional anti-diabetic agents by the dieticians

S.NO.	Name of the non-conventional anti-diabetic agents	Recommended Dose	Suggested Frequency of consumption
1	Fenugreek seeds	20g	Twice a day
		50g	Once daily
		5g	Before every meal
		10g	Once a day
2	Apple cider vinegar	20ml	Twice a day
3	Phyllium (Isabgul)	20g	Twice a day
		1 tsp	Once daily
4	Cinnamon	2 pinch	Once a day
5	Methi + Ajwain + kaali Jeera	2 tsp	Once daily
6	Oats bran	60g	Once a day
7	Karela Juice	1 tsp	Once a day
		75ml	Once daily
8	Insulin leaves	2 leaves	Once daily
		1 leaf	Once daily
9	Quinoa seed powder	1 tsp	Once daily
10	Fenugreek + cinnamon	½ tsp	Once daily
11	Flax seeds	1 tsp roasted	Once daily
		2 tsp	Once daily
12	Alfa alfa seeds	1 tsp (soaked overnight)	Once daily
13	Bottle gourd juice	1 glass	Once daily
14	Sabja	1 tsp	Once daily
15	Green tea	3 cups	Daily
16	Okra	50g	Once daily
17	Jamun seed powder	5g- 10g	Once daily
18	Oats	30g	Once daily
19	Sunflower/ watermelon seeds	2-3 tsp	Daily
20	Amla Juice	10ml	Once daily

It was observed that the dieticians received information from several sources as given in the Figure No-3.

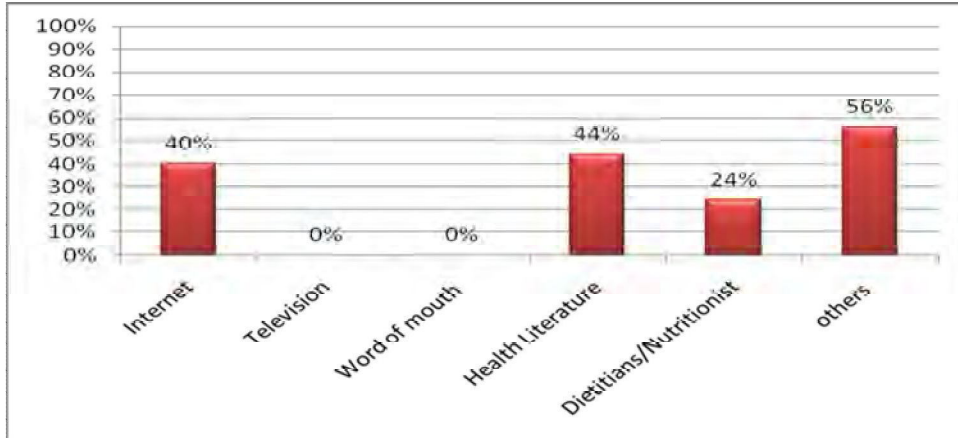


Figure-3: Sources of information on nonconventional antidiabetic agents.

56% of the dietitians were getting their information regarding the recommendation of non-conventional anti-diabetic agents from scientific literature and research. This was followed by the internet, health literature and other dietitians as a source of knowledge about natural anti-diabetic

therapies. This is suggestive that dietitians being healthcare providers get their information regarding the non-conventional anti-diabetic agents through reliable sources. Diabetic patients will thus follow the recommendations and benefit greatly from them.

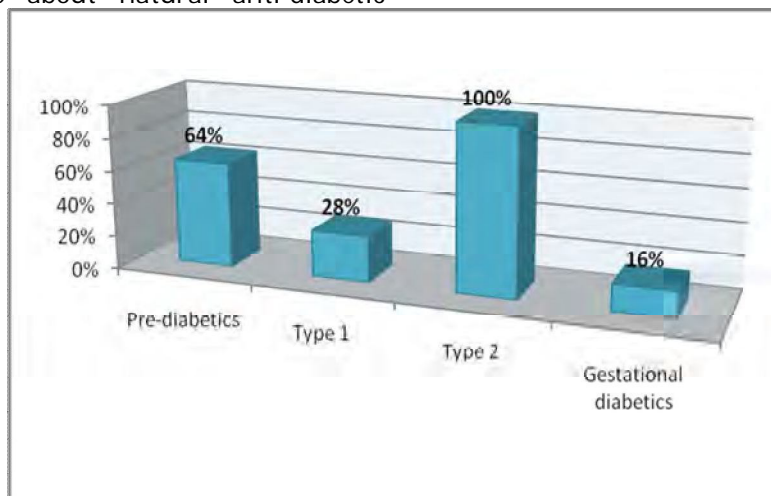


Figure-4: Recommendation of non-conventional anti-diabetic agents to different types of diabetics.

All the dietitians were found to recommend these therapies to all their type 2 diabetic patients, followed by pre-diabetics as a preventive strategy, then type 1 and lastly type 2 diabetics.

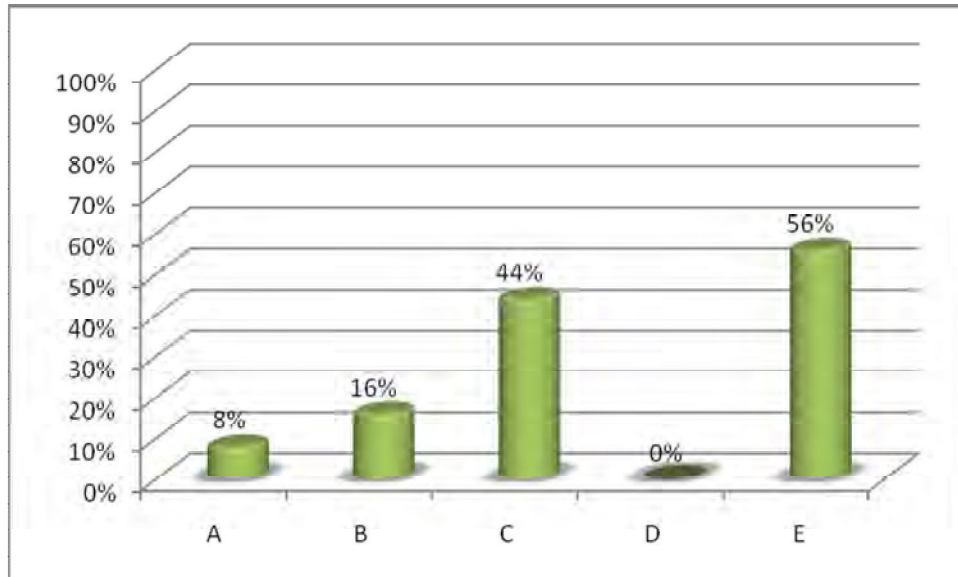


Figure-5:Opinion of dieticians on natural anti-diabetic therapies

Eight percent of the dietitians opined that is non-conventional anti-diabetic therapies alone are not very beneficial, but can be used as an adjunct with pharmaceutical anti-diabetic drug therapy, around 16% of the dietitians chose option (B) which stated that these anti-diabetic therapies are better than pharmaceutical methods of managing diabetes and are safer for consumption as these are natural. 44% were of the opinion that these therapies are excellent/good as a preventive measure. None of the dietitians felt that the natural therapies are not as effective as desired and hence should not be recommended. Along with medical therapy, if consumed, the natural anti-diabetic therapies could control the progression of diabetes. Some strongly agreed with the fact that only evidence

based functional foods must be prescribed. The prescription of these agents is also dependant on the usage, concomitant anti-diabetic therapy and the length of hyperglycemia. Some dietitians stated that the effect of the non-conventional anti-diabetic agents is quite individualistic depending upon how well the patient follows the prescribed dose and type of diet followed. Also patient's choice and his/her acceptability of the agent plays a major role in influencing the choice of consumption by the patients. Some agreed that non-conventional antidiabetic agents are effective preventive strategies for pre-diabetics.

Conclusion: It is an age-old practice to use natural approaches to control hyperglycemia and has been part of



Indian culture for many years. Several natural agents have been scientifically proved to be effective in the management of diabetes and hence, there is a need to create awareness about the same among the patients as well as dietitians.

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