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Role of natural herbs in the management of diabetes mellitus in the village people of Kerala

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Abstract

Diabetes mellitus is one the common metabolic disorder seen commonly in more than 50% of the population. Many common herbs like fenugreek, amla, guava leaves, *Gymnema sylvestre*, neem are claimed to have blood sugar lowering properties that make them useful for people with or at high risk of type 2 diabetes. Number of clinical studies have been carried out in recent years that show potential links between herbal therapies and improved blood glucose control, which has led to an increase in people with diabetes using these more 'natural' ingredients to help manage their condition. Aim of our study was to conduct an online survey on 'Role of herbs in reducing Diabetes mellitus in village people of Kerala' and to find out the most commonly used medicinal herbs and their effectiveness in controlling Diabetes. From this study, we concluded that large number of populations depends on natural medicines for the effective management of Diabetes in which fenugreek was the most commonly used one.

Keywords: Diabetes mellitus, natural herbs, fenugreek, Amla, neem, village people of Kerala

Introduction

Lifestyle diseases or diseases of longevity are diseases which appear to increase in frequency as countries become more industrialized. Diet and lifestyle are major factors thought to influence susceptibility to many diseases. Use of drugs, tobacco smoking, consumption of alcohol, lack of exercise can be certain factors which increases the risk of developing certain diseases. Diabetes mellitus is a group of metabolic diseases characterized by chronic hyperglycaemia resulting from defects in insulin secretion, insulin action, or both ^[1]. High blood sugar produces the symptoms of frequent urination, increased thirst, and increased hunger ^[2]. Hyperglycaemia, or raised blood sugar, is a common effect of uncontrolled diabetes and leads to serious damage to many of the body's systems, especially the nerves and blood vessels. The global prevalence of diabetes is estimated to increase, from 4% in 1995 to 5.4% by the year 2025 ^[3]. The traditional medicines have depicted a bright future in the treatment of many diseases including diabetes. Anti-diabetic activity of medicinal plants is mainly due to their ability to restore the function of pancreatic cells by causing an increase in insulin secretion or by inhibition of intestinal absorption of glucose. The main active constituents of the plants which are responsible for the anti-diabetic action are polyphenols, flavonoids, terpenoids, carotenoids, and coumarins. The Ethnobotanical information revealed that about 800 plants may have anti-diabetic potential and showed beneficial effects in either treatment or prevention of diabetes complications ^[4]. The aim of our study was to find out the common herbs used by the village people of Kerala for curing diabetes mellitus.

Materials and Methods

In our survey, we posted a Standardized online questionnaire on the social networking website; Google forms. The questionnaire was a combination of multiple choice and descriptive types. An online questionnaire was programmed using Google forms, from 21 February 2022 to 17 march 2022. The questionnaire was administered in Malayalam since the survey was mainly focused on village people of Kerala.

These were the questions that we asked in the questionnaire

1. Name
2. Gender
3. Age
4. Residence area
5. Do you / your family members have diabetes?
 - Yes
 - No

6. Do you use any herbs to reduce diabetes?
 - Yes
 - No

7. Have you used any of the following herbs to reduce diabetes?
 - Guava leaf
 - Fenugreek
 - Neem
 - Gooseberry
 - Gymnema sylvestre
 - Tinospora cordifolia
 - Curry leaves
 - Ladies finger
 - None of these

8. If not, which other plant did you use? (Descriptive)
9. How long have you been using this herb?
 - Days
 - Weeks
 - Months
 - Years

10. Have you experienced any side effects due to its use?
 - Yes
 - No

11. Do you have a reduction in your diabetes by following this method?
 - Yes
 - No

12. Are you taking allopathic medicines along with this to reduce diabetes?
 - Yes
 - No

13. Do you think the use of such natural remedies is better than other methods?
 - Yes
 - No

Result and Discussion

A total of 227 responses were analysed, in which 67% were females and 33% were males (figure1).

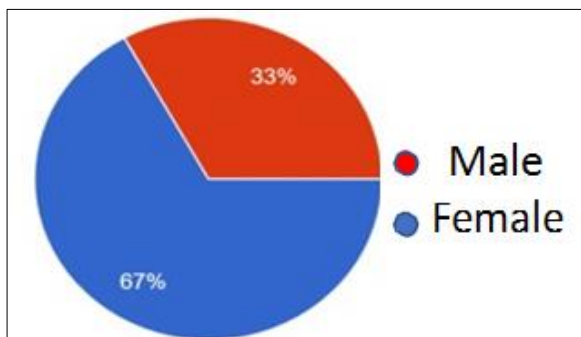


Fig 1: Pie chart showing the percentage of male and female respondents

The participants who responded to the questionnaire belong to the age group of 17 to 65 years (figure 2).

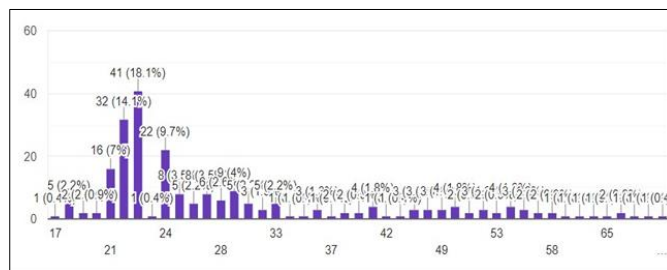


Fig 2: Histogram showing the age group of participants

From the response obtained 61.2% were diabetic (figure 3).

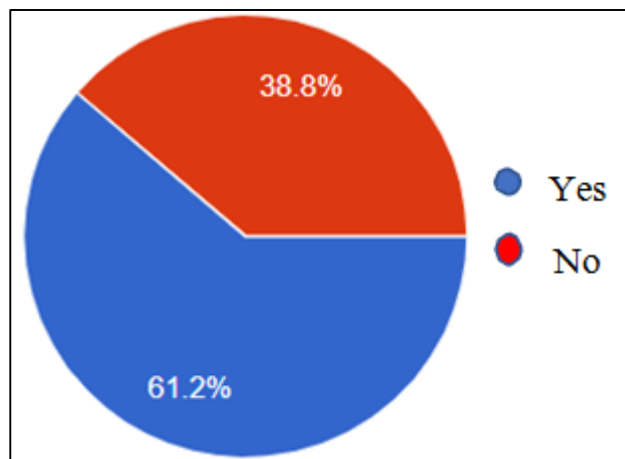


Fig 3: Pie chart depicts the percentage of participants diagnosed with diabetes

Out of the total response, nearly half of the people were using herbs for curing diabetes (figure 4).

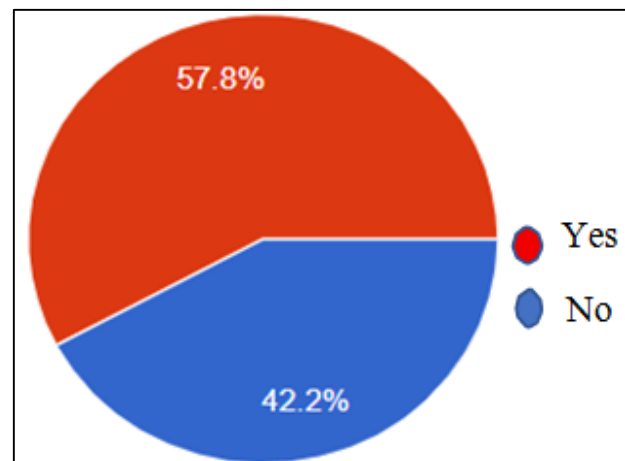


Fig 4: Pie chart showing the percentage of subjects using he

From the survey, we found that the common herbs used by the village people of Kerala for curing diabetes are guava leaf, fenugreek, neem, gooseberry, Gymnema sylvestrea, Tinospora cordifolia, Curry leaves and Ladies finger (figure 5).

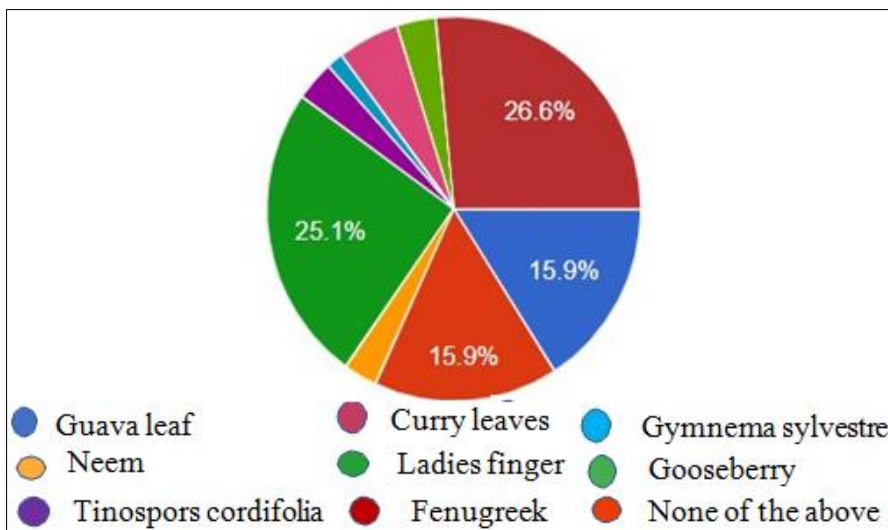


Fig 5: Pie chart showing the percentage of different herbs used as home remedy.

Most of the people who responded were using these herbs for long time (figure6).

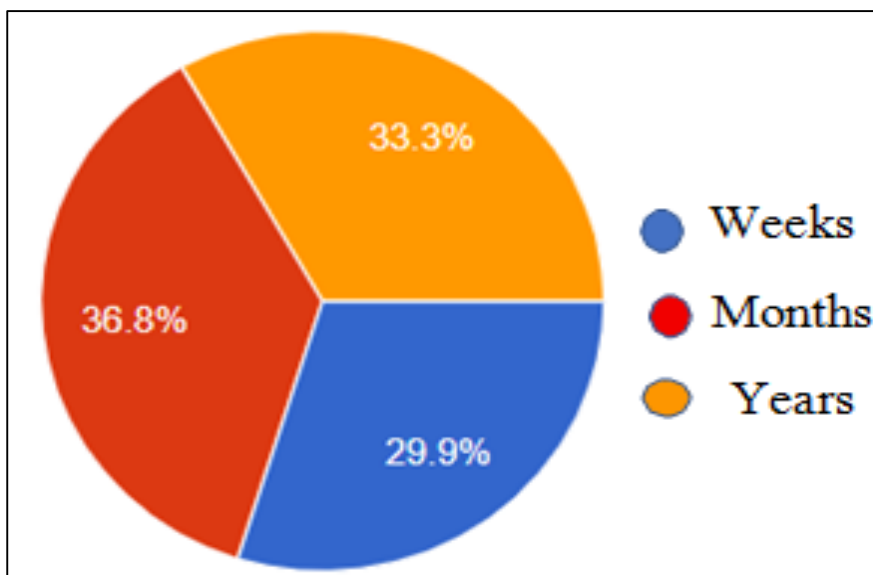


Fig 6: Pie chart showing the duration of usage of herbs as home remedy by the subjects

Among these, majority of people use fenugreek as a natural remedy for curing diabetics (26.6%). Some other herbs like

leaves of passion fruit, turmeric, ginger and spinach have also been used by few people (figure7).

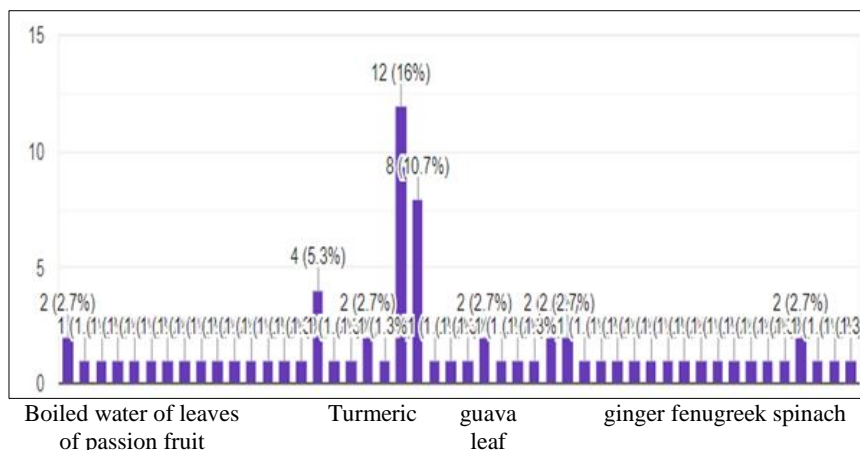


Fig 7: Histogram showing the usage of other herbs for the cure of diabetics

As per the reports obtained, the continuous use of these herbs helps to reduce the diabetics (figure 8) with less side effects (figure 9).

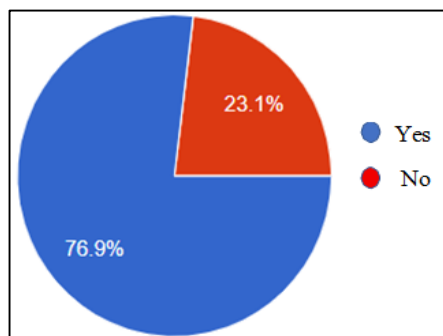


Fig 8: Pie chart showing the percentage of progress of disease condition by following the use of herbs

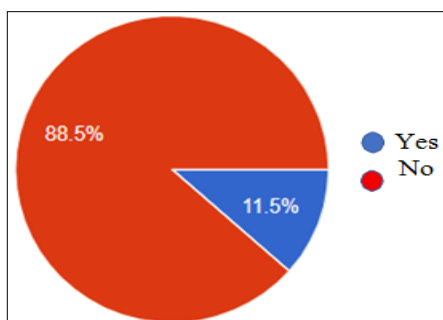


Fig 9: Pie chart showing the percentage of population experiencing side effects

Along with the natural medicines, most of the people use allopathic medicines to reduce diabetics (figure10).

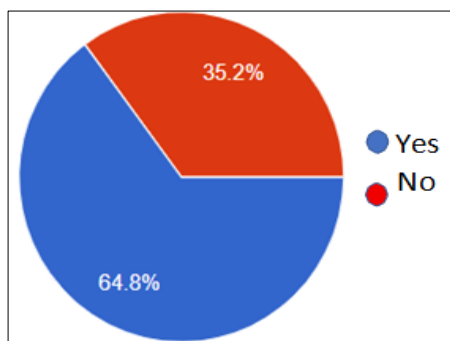


Fig 10: Pie chart showing the usage of allopathic medicine

Most of respondents prefer natural medicines as a better choice (figure11).

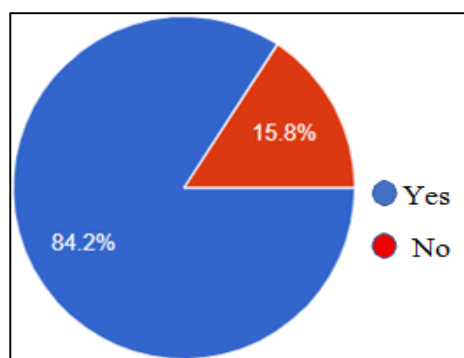


Fig 11: Pie chart showing the preference of natural medicine is a better choice

Conclusion

Nowadays the utilization rate of natural medicine for the control of diabetics is very high and it is preferred over other treatment due to its less side effects. Guava leaf, fenugreek, neem, gooseberry, *Gymnema sylvestrea*, *Tinospora cordifolia*, Curry leaves and Ladies finger are the most common natural herbs used by the village people of Kerala. Among these most preferred one is fenugreek. Further studies in these herbs may help us to reduce Diabetics effectively.

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