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# USES OF FRUITS, VEGETABLES AND HERBS FOR THE TREATMENT OF DIABETES BY THE PEOPLE OF QUETTA CITY

**MISBAH MANZOOR[1]*, MUFAKHIRAH JAN DURRANI[2] AND AYESHA[1]**

[1]*Sardar Bahadur Khan Women's University, Quetta, Pakistan.*
[2]*Department of Biology, Alama Iqbal Open University, Islamabad, Pakistan.*

## Abstract

Present study was conducted to record the ethno medicinal uses of plants to control diabetes mellitus. As a result twenty five (25) medicinal plants, belonging to 17 families, were reported which were being used locally to cure diabetes. The most dominant families were Cucurbitaceae (5 species) followed with Rosaceae (2 species), Lilliaceae (2 species), Lamiaceae (2 species) and Myteraceae (2 species). Other families testified the use of only one species as a cure for diabetes mellitus. About hundred (100) informants were interviewed. Data was recorded with the help of a questionnaire and interviews. It is dire need to conserve such vital resources of knowledge from people and to promote their use in the primary health care system.

**Keywords:** Indigenous, Knowledge, Traditional, Interviews, Quetta.

## Introduction

Diabetes mellitus is the common disease affecting the citizens of both developed and advance countries of the world (Maiti et al., 2004). The local people in the present study treat diabetes through indigenous medicinal plants. They believe that traditional medicines are better for permanent cure of their common ailments. The mode of action of the extracts from these plant parts is uncertain, however, many anti-diabetic herbs, fruits and vegetables act, at least in part, through their vitamin, fiber or mineral contents and some secondary metabolites (Hussain et al., 2011; Manzoor et al., 2013).

Plants often contain wide variety of antioxidants, such as phenolic, carotenoids, tocopherols and ascorbic acid. These compounds are distributed in different parts of the plants, such as, wood, bark, stems, pods, leaves, fruit, roots, flower, pollen and seeds (Chanwitheesuk et al., 2005; Rasool et al., 2010).

Fruits, herbs and vegetables are better from the synthetic drugs which have shown adverse reactions and other undesirable and irreversible side effects. The local recipes consisted of extracts, leaves in fresh or powdered form, flours and seeds of vegetables, fruits and herbal mixtures. Use of herbal medicines is part of ancient civilisations and cultural practices of the people. The indigenous knowledge about healing powers of plants is gathered by many local people from Kharan, Ziarat, Nushki, Quetta, Kalat and Khuzdar (Tareen et al., 2002; Durrani et al., 2003; Durrani and Manzoor, 2006; Durrani et al., 2009; Manzoor et al., 2013).

## Methodology

The present study was focused on the treatment of diabetes through traditional recipes. The study was carried out by interviewing 100 respondents (local inhabitants) from Quetta city. Data was collected by using a questionnaire, semi-structured interviews and included questions that target the local names of plants, parts used, methods of preparation and their practical applications (Durrani and Manzoor, 2006; Manzoor et al., 2013). Plants were identified with the help of Bokhari and Bukhari, 2005. Most plants were obtained directly from interviewers while some was collected during a survey accompanied by traditional healers and herbalists.

## Results and Discussion

As a result, twenty five (25) medicinal plants belonging to 17 families were reported that were being used locally to cure diabetes. The most

***Author for correspondence E-mail: Alfa_botany@yahoo.com**

dominant families were Cucurbitaceae (5 species) and followed with Rosaceae (2 species), Lilliaceae (2 species), Lamiaceae (2 species) and Myteraceae (2 species). Other families testified the use of only one species as a cure for diabetes mellitus. For each plant species, botanical name, family, local name, part used, recipes and applications are given in Table 1. Among 25 species fruit part of the plants were most commonly used and followed by leaves, whole plant, root, seeds and stem (Table 1).

**Table 1. Uses of fruits, vegetables and herbs for the treatment of diabetes**

| Vernacular Name | Scientific Name | Family | Parts used | Recipes |
|---|---|---|---|---|
| Kunwar ghandel | *Aloe barbadensis* L. | Lillaceae | Leaves | Leaves were soaked in water for a night and two teaspoon of this mixture was given to the patient along with meal twice a day for two weeks. |
| (Thoom) Lahsan | *Allium sativum* L. | Lillaceae | Bulb | Bulb was grounded with water and one teaspoon was taken along with meal twice a day for a month. |
| Kadu | *Cucurbitapepo* L. | Cucurbitaceae | Fruit | Fresh fruits were grounded and pulp of the fruit was given to the patient, early in the morning for a month. |
| Lemoo | *Citrus limon* L. Burm.f | Rutaceae | Fruit | Fresh fruit juice was extracted and 50% solution was prepared and given to the patient twice a day for 15 days before meal. |
| Tarbooz | *Citrullus vulgaris* Schrad | Cucurbitaceae | Fruit | Fresh fruits were cut into slices and given to the patient twice a day before meal. |
| Marmoot | *Carallumatuberculata* N.E.Br. | Asclepiadaceae | Whole plant | The fresh plant was chewed thrice a day for a month after meal. |
| Sangtra | *Citrus medica* L. | Tiliaceae | Fruit | Fresh fruit was crushed and juice is extracted and given to the patient thrice a day for two months. |
| Khira | *Cucumissativus* L. | Cucurbitaceae | Fruit | Fresh fruit juice was extracted and given to the patient thrice a day for a month along with meal. |
| Papita | *Carica papaya* L. | Cariaceae | Fruit | Fresh fruit is cut into pieces and given to the patient thrice a day for a month after meal. |
| Gajar | *Daucuscarota* L. | Apiaceae | Fruit | Fresh fruits were cooked and taken or fresh juice of the fruit was extracted and given to the patient early in the morning for a month before meal. |
| Choti ilachi | *Elettariacardamomum* L. | Zingiberaceae | Seeds | Seeds were grounded, half teaspoon of the powder taken along with water thrice a day for a month before meal. |
| Jamun | *Syzygiumcumini (L.) Druce* | Myrtaceae | Fruit | Fresh fruits were cut into slices and taken early in the morning for three weeks. |

***Contd…***

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| Vernacular Name | Scientific Name | Family | Parts used | Recipes |
|---|---|---|---|---|
| Jo | *Hordeumvulgare* L. | Poaceae | Seeds | Seeds were roasted and mixed with *Elettariacardamomum* L., half teaspoon powder was taken with water twice a day for a month along with meal. |
| Kalituri Moongituri | *Luffaacutangula* Roxb. | Cucurbitaceae | Fruit | Fresh fruits were cooked or taken as a paste twice a day for a month. |
| Shatoot | *Morus alba* L. | Moraceae | Fruit | Fresh and dry fruits were eaten twice a day for 15 days. |
| Podina | *Menthapiperita* L. | Lamiaceae | Leaves | Powder of the dried leaves was taken along with meal twice a day for two months. |
| Karela | *Momordica charantia* L. | Cucurbitaceae | Fruit | Juice of the fruit was extracted and given to the patient early in the morning or fruit was cooked and taken twice a day for two weeks before meal. |
| Tulsi | *Ocimum sanctum* L. | Lamiaceae | Leaves | Leaves were dried under shade and grounded to make powder and were taken with water twice a day after meal. |
| Amrood | *Psidiumguajava* L. | Mytraceae | Fruit, leaves | Fresh fruits were eaten or hot water extracts made from dried leaves of plant and taken twice a day after meal. |
| Apple | *Pyrusmalus* L. | Rosaceae | Fruit | Fresh fruit juice was extracted and taken early in the morning for two months. |
| Mooli | *Raphanussativus* L. | Brassicaceae | Root | Fresh roots were cut into pieces and given to the patient twice a day along with meal. |
| Chitta gulab | *Rosa damascena* Mill | Roseaceae | Seeds | Powder of the seeds was prepared and given alongwith water to the patient early in the morning. |
| Methe | *Trigonellafoenumgraceium* L. | Fabaceae | Leaves | Fresh leaves were boiled in water and cooked as vegetable and were taken twice a day alongwith meal. |
| Doddak | *Traxacumofficinale* Weber | Asteraceae | Leaves | Fresh leaves were cooked as vegetable and were given to the patient once a day for two weeks in the morning. |
| Beri | *Zizyphusmauritiana* Ham. | Rahmanaceae | Fruit | Fresh fruits were taken twice a day for a month after meal. |

Most of the plant species were being used in their daily routine by different ways. In all cases mode of application was oral. Depending on the condition of patient, dose of medicine was administered twice or more on daily basis for a week or even for months till the disease is completely cured (Erasto et al., 2005).

It was reported (Khan and Anderson, 2003; Durrani and Manzoor, 2006) that jamun fruit and bitter gourd have good insulin potentiating function. Dried ovary and seeds of jamun fruit and ovary and seeds of bitter gourd in both fresh and dried form were commonly used. Mitra (2007) reported Banyan tree, Currey leaves,

Jamun seeds and leaves, Bitter gourd and gurmur as commonly used plants for diabetes mellitus. Powdered fenugreek was also used as a cure. Extraction of methanolic *Momordica charantia* (MC) fruit soft (semi-solid form) extract act in synergism with oral hypoglycemic and potentiates their hypoglycemia in diabetes mellitus (Tongia et al., 2004)

It was concluded that conservation of traditional knowledge is neglected due to many factors like modernisation of region, lack of interest in traditional healers and hindered transfer of indigenous knowledge to the next generations. If the indigenous knowledge be transferred evenly from older to younger generations, it will help to promote cure of diseases by local recipes.

**Recommendations**

An awareness programme in the area about conservation of valuable indigenous flora having potential medicinal properties and maintenance of a herbarium will be the best source to record data for future.

Local community should be involved in conservation practices. Plant collectors, local staff and local stakeholders should be aware about in situ and ex-situ conservation of medicinal plants. Due to lack of knowledge, many species are becoming extinct so it is important that people should get awareness about their natural wealth and should aware how to conserve useful medicinal resources from their surrounding and share knowledge through print media.

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