IJBPAS, January, 2019, 8(1): 17-27

ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

ETHANOPHARMACOGNISTIC STUDIES ON MEDICINAL PLANTS USED BY HERBAL PRACTITIONERS FOR GIT DISORDERS IN QUETTA, BALOCHISTAN

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Received 12th July 2018; Revised 4th Aug. 2018; Accepted 24th Oct. 2018; Available online 1st Jan. 2019

https://doi.org/10.31032/IJBPAS/2019/8.1.4597

ABSTRACT

In Balochistan, gastrointestinal diseases are one of the most common health related problem due to lack of clean water. In Quetta (the capital city) Balochistan, peoples primarily rely on medicinal plants available in local herbal (Pansar stores) because of economical price and ease of availability for prevention and treatment of various types of GI tract diseases. The aim of study was to obtain information about the crude/herbal drugs used/sold in Quetta city.

Field survey was carried out at different intervals throughout the year. Data was collected from 86 herbal practitioners/pansar of different areas of the city. A total of 23 plant species were listed used for GIT disorders. Most the plants are grown in Balochistan. Organoleptic evaluation was carried out to determine purity and quality. The current study represents the preliminary data in

necessity of future phytochemical studies and also important information for the preservation of these plants.

Keywords: Ethnopharmacognosy; Medicinal plants; GIT disorder; Quetta, Balochistan

INTRODUCTION

Ethnoscience focused on the status of civilizations‟ individual origin of their authenticity fairly than that of the ethnographers. The approaches used in ethnoscience are taken from other directions such as language and folk anthropology and quests to progress knowledge how altered nations identify the world adjoining them over their arrangements and group of their atmosphere. The power of ethnoscience hang on the statement that it helps the researches in accepting how the people think about the atmosphere on which it depends for existing and can also control aspects which are measured significant in their environmental methods. This awareness can be useful for other methods that are used in ecological anthropology.

Indigenous data that is unique to a set culture or civilization which offers pedestal for cultivation, well-being, diet conservation, education, ecological maintenance and other life courses on the indigenous level [1]. Native societies for altered zones of the world have settled their specific knowledge on the plant resources, its usage, natural resource management and conservation [2]. Advanced countries share their knowledge of resources with developing countries to transfer their benefits regarding technology [3].

GIT ailments like vomiting, abdominal pain, nausea, and diarrhea are frequent in north western Balochistan since these areas are deficient in hygienic condition and are malnourished [4]. As well as having inadequate accessibility to clean water [5]. About 103 million citizens In Pakistan with a yearly growth rate of 3% and inhabitants density is documented 151.8/km^2. Communicable diseases, polluted water, and inadequate sewerage system contribute mostly in the health issues of Pakistan [6]. Owing to the rate of many side effects by utilization of allopathic medications for numerous ailments, therapeutic plants are thought to be the major resource of novel medicines as they have fewer or no side effects. Herbal medications are thought to be harmless with slighter unfavorable effects; inexpensive, successful, somewhat less poisonous and wide-ranging in research in terms of search of potent drugs of plant derivation [7]. In Pakistan and other

countries a diverse range of therapeutic plants are utilized for GIT illness such as dysentery, diarrhea, and cholera. Yet, a lot of them have not been tested for their pharmacological action and phyto-chemistry against microorganisms, which may sustain their application in conventional medicine [8]. The basic aim of the current study is to record the uses of various plants for the ailments of gastrointestinal system and to study their customary recipes in Quetta, Balochistan [9] Therefore, ethno medicinal studies become very important in order to preserve already the existing knowledge of the medicinal plants [10].

Balochistan is one of the largest province of Pakistan that covers almost 44% of total land [11]. Balochistan contains second largest medicinal plant forest ecosystem in the world. It is one of the ancient sluggish developing Curative plants trees of the world having trees as old as 700 to 900 years, but development and increased population growth are the basic causes of deforestation [12].

Quetta is largest and Capital city of Balochistan. Quetta also known as fruit garden of Pakistan. Due to semiarid climate of this region Quetta and peripheries are rich source of herbs [13]. Mainly local community of peripheries depends on herbs for the treatment of simple diseases like nausea, flatulence, diarrhea and vomiting. That area is native home of multiple herbs. Herbs from Balochistan are supplied to different areas of Pakistan. Pansar sold herbs in local market. Data collected from pansar enlist the 23 herbs used for common GIT problems [14].

There is a growing demand for plant-based medicines, health products, pharmaceuticals, food supplements, cosmetics etc. in the international market [15]. Keeping in view the importance of medicinal plant, present study was aimed classify and improve medicinally used plants for GIT disorders in Quetta Balochistan, to conserve the ethno medicinal knowledge and to select candidate medicinal plants for specific GIT disorders and to recover record and diffuse local botanical knowledge and traditional wisdom [16].

MATERIALS AND METHODS

The largest city and provincial capital of Balochistan, Quetta was selected for the study, to understand the traditional knowledge of herbs in Quetta used for GIT disorders. The research was conducted in two phases; data collection in field trips and scrutiny/synchronization of collected data [17].

Selection of Sampling Sites

The sampling sites included were different shops and towns of Quetta including masjid road, satellite town, sariab road, najeeb street and surajganj bazar.

Schedule of Sampling in Selected Sites

The plan was finalized in two stages i.e. field tours for data assortment and records of the information obtained [18].

Field Work

The field survey contains interviews; transect walks and observation to obtain the information concerning current ethan-opharmacognisitic practices, frequent use of plants for GIT system and organoleptic evaluation of the collected crude drugs [19].

Observation

Different pansar stores were visited for observation of local communities' practices regarding use of medicinal plants. Survey observation include part used, their family name, common name, and their traditional uses [20].

Interviews

During field work the pansar stores of the area were interviewed. The qualitative data was obtained through Questionnaires regarding different information such as common names, local names; family and their uses for different GIT disorders [21, 22].

Sample Collection

For explaining variety of sample within the Quetta all the available plants used for G.I disorders were collected at different intervals throughout the year.

Collected plants from different pansar stores were stored in air tight glass jars. All the samples were recognized with the aid of existing literature [23, 24, 25]. Organoleptic evaluation of each specimen including color, odor, taste, size and shape enlisted.

Authentication Methods

There are numerous approaches used for verification and evaluation of herbs used as raw material for herbal remedy productions. Best common methods consist of organoleptic [26].

Organoleptic Evaluation

Organoleptic evaluation is the method used to study the herbal medicine by using different organs of senses, that confirmation includes the analysis of color, odor, taste, shape and size etc [27]. Noticeably the original visibility, odor, color, taste, smell of the plant are precise to find itself. Simplest and most common method used by herbal practioners and herbalists for drug analysis is organoleptic. For example herb named as Henna (*Lawsonia inermis*) is most commonly used as beautician product for coloring hair is

commonly identified by organoleptic method [28].

RESULTS AND DISCUSSIONS

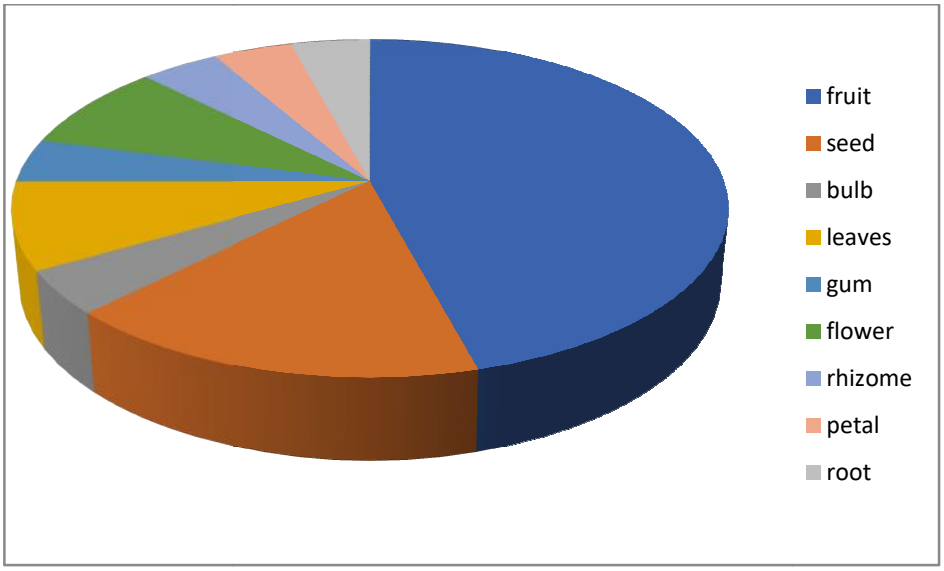
Medicinal plants have been used since man's existence on earth for the curiosity and need of human being. Herbal medicines are usually in the form of its different parts or their extract for the cure, prevention, maintaining diseases and health

Demographic study Results of medicinal plants

A total of86 herbal practitioners/pansar of the area, from different locations were interviewed. Most of the interviewees were among herbal practioners (Hakims) and some were from Herbal stores (pansar). The research led to the identification of 23 plant species (Table 1), distributed over 23 families used for GIT disorders. The most common use of herbs against GIT Ailment reported was vomiting (22%) after that was dyspepsia (13%) and ulcer (13%). Against other GIT Ailment use of herbs reported as per proportion acidity 10%, flatulence 9%, abdominal spasms 9%, diarrhea 6%, abdominal pain6% and hemorrhoids 3%. The most common plant part used was Fruit (43%).

Organoleptic Evaluation Results

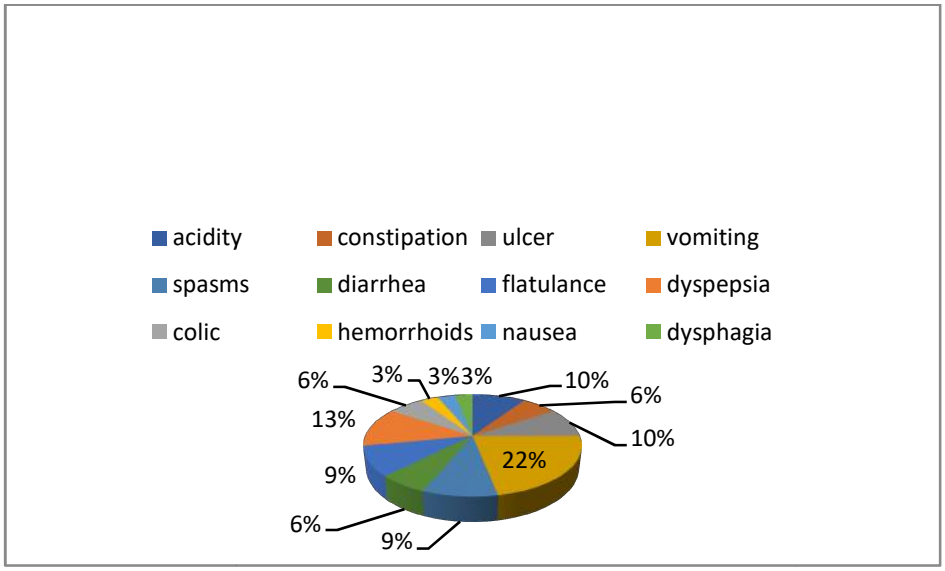
Table no 2 shows the results of organoleptic evaluation. Organoleptic characters were similar to reported characteristics.



Graph: 1. Part Used %age of the plants

Table. No 1: List of Important Medicinal Herbs, local & Botanical names and their customary usage						
No	**Botanical name**	**Common Name**	**Family**	**Vernacular Name**	**Part used**	**Traditional use**
01	***Acacia arabica***	**Gond khanira**	***Fabaceae***	**Gond katirra**	**Gum**	**Ulcer**
02	**Aegle marmelos**	**Bil Gerri**	***Rutacea***	**Khazmag**	**Fruit**	**Diarrhea**
03	***Allium cepa***	**Piyaz**	***Amaryllidaceae***	**Piyaz**	**Bulb**	**Vomiting Anti-spasmodic**
04	***Carumcarvi***	**Zeerah**	***Umbelifereae***	**Zeerah**	**Fruit**	**Acidity**
05	***Cassia senna***	**Sana makki**	***Caesalpiniaceae***	**Sana**	**Petals**	**Constipation**
06	***Citrus limon***	**Limon**	***Rutaceae***	**Limon**	**Fruit**	**Vomiting**
07	***Coriandrum sativum***	**Coriander**	***Umbelliferae***	**Dhania**	**Fruit**	**Carminative Digestive Anti –spasmodic**
08	***Elettariacardemomum***	**Ilaichi**	***Zingiberaceae***	**Bial**	**Seed**	**Acidity**
09	***Eugenia caryophyllus***	**Clove**	***Myrtaceae***	**Laung**	**Flower buds**	**Dyspepsia Flatulence**
10	***Foeniculum vulgare***	**Sonf**	***Umbelifereae***	**Zarfoish**	**Fruit**	**Anti-spasmodic**
11	***Glycyrrhiza glabra***	**Liquorice**	***leguminosae***	**Mulathi**	**Root**	**Laxative**
12	***Hyoscymusniger***	**Ajwain**	***Solanaceae***	**Ispari**	**Leaves**	**Anti-Colic**
13	***Lallemantiaroyleana***	**Balango**	***Labiatae***	**Malanga**	**Fruit**	**Ulcer**
14	***Melia azadirachta***	**Neem**	***Meliaceae***	**Neem**	**Fruit**	**Hemorrhoids**
15	***Mentha piperita***	**Podina**	***Labiatae***	**Podina**	**Leaves**	**Vomiting**
16	***Myristicafragrans***	**Nutmeg**	***Myristicaceae***	**Jaiphal**	**Seed**	**Carminative Nausea Vomiting**
17	***Piper nigrum***	**Black pipper**	***Piperaceae***	**Toor mirch**	**Unripe fruit**	**Stomachic Dyspepsia Flatulence**
18	***Plantago ovata***	**Chilkaisphagol**	***Plantaginaceae***	**Isphagol**	**Husk, seeds**	**Diarrhea**
19	***Prunus domestica***	**Alobukhra**	***Rosaceae***	**Alocha**	**Fruit**	**Dysphagia**
20	***Punicagranatum***	**Anar dana**	***Lythraceae***	**Anar dana**	**Fruit**	**Acidity**
21	***Rosa damascene***	**Gulab**	***Rosaceae***	**Gulab**	**Flowers**	**Constipation**
22	***Tamarindus indicia***	**Imli**	***Laguminosae***	**Imli**	**Fruit**	**Constipation**
23	***Zingiberofficinale***	**Ginger**	***Zingiberaceae***	**Adrak**	**Dried rhizome**	**Carminative Dyspepsia Colic vomiting**

Table. No 2: Organoleptic studies of Medicinal plants used for GIT disorders						
No	**Scientific Name**	**Color**	**Odor**	**Taste**	**Size**	**Shape**
01	***Acacia gum***	**Pale yellow/brown**	**Odorless**	**Mucilaginous bland**	**Irregular**	
02	***Aegle marmelos***	**Yellowish brown**	**Faint and aromatic**	**Mucilaginous and sweet**	**10-20 cm diameter**	**Sub spherical**
03	***Allium cepa***	**Yellow brown**	**Pungent**	**Aromatic**	**Different**	**Globe**
04	***Carumcarvi***	**Brown**	**Characteristics**	**Spicy**	**Mericarps 4-7mm long**	**Slightly curved ,tapering at both ends**
05	***Cassia senna***	**Greyish green**	**Faint**	**Mucilaginous and slightly bitter**	**2-4cm long 1cm wide**	**Curled , apex is acute with sharp spine**
06	***Citrus limon***	**Yellow**	**Strong and aromatic**	**Aromatic and bitter**	**7-12 cm long**	**Oval with nipple**
07	***Coriandrum sativum***	**Straw yellow**	**Aromatic**	**Spicy**	**2.3-4.3 mm diameter cremocarps**	**Sub –spherical**
08	***Elettariacardemomum***	**Yellow green**	**Pungent**	**Aromatic**	**1-2 cm long pod**	**Three sided**
09	***Eugenia caryophyllus***	**Reddish brown**	**Spicy odor**	**Pungent aromatic**	**1-1.7 cm long**	**Stalk with cap**
10	***Foeniculum vulgare***	**Greenish brown**	**Aromatic**	**Distinct Sweet Aromatic**	**0.5-1cm long 2-4mm broad**	**Slightly curved and oval**
11	***Glycyrrhiza glabra***	**Dark, reddish brown**	**Faint**	**Sweet**	**5-30 cm long 1-2 cm diameter**	**Cylindrical branched & unbranched**
12	***Hyoscymusniger***	**Greyish green**	**Odorless**	**Bitter**	**2-4cm long**	**Oblong to ovate**
13	***Lallemantiaroyleana***	**Dark brown to black**	**Mildly spicy**	**Bland**	**1/12 inch length 1/16 inch breadth**	**Three angled**
14	***Melia azadirachta***	**Yellow brown**	**Garlic odor**	**Bitter**	**Small drupe**	**Ovoid, bluntly pointed**
15	***Mentha piperita***	**Bright green**	**Aromatic**	**Aromatic**	**7-10 mm long bracts**	**Sessile**
16	***Myristicafragrans***	**Dark brown with reticulate farrows**	**Strong &aromatic**	**Pungent & slightly bitter**	**2-3cm long 2cm breadth**	**Ovoid**
17	***Piper nigrum***	**Black**	**Characteristic aromatic**	**Bitter ,sharp pungent spicy**	**4-5mm diameter**	**Globular**
18	***Plantago ovata***	**Dull, grey brown**	**Odorless**	**Bland and mucilaginous**	**2-3.3mm long 1-6mm breadth**	**Boat shaped**
19	**Prunus domestica**	**Reddish brown**	**Characteristics**	**Sour**	**Different**	**Round plum**
20	***Punicagranatum***	**Red Purple**	**Aromatic**	**Sour flavor**	**Intermediate 5-12 cm diameter**	**Rounded**
21	***Rosa damascene***	**Red**	**Aromatic**	**Tasteless**	**Vary species to species**	**Oval and round**
22	***Tamarindusindica***	**Reddish brown**	**Bitter sweet**	**Too sour**	**12-15 cm length**	**Irregular legumes**
23	***Zingiberofficinale***	**Buff**	**Agreeable & aromatic**	**Pungent**	**5-15cm long 3-4cm wide 1-5cm thick**	**Horizontally , laterally compressed**



Graph 2: %age of plants used against diseases

CONCLUSIONS

The current study shows that local herbal practioners utilize large number of local plants for treatment of GIT disorders. Current study was carried out in a Quetta city of Balochistan, however further studies are required to obtain the complete knowledge and practices of traditional drugs.

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