

REVIEW ARTICLE

Most Prevalent Diseases in Chambal Region and Available Vegetation useful for Treatment

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Received: 05 March 2022; Revised: 25 March 2022; Accepted: 10 April 2022

ABSTRACT

The prices of medicines and pharmaceuticals are unaffordable for most of the population of developing countries. Rational and effective use of locally available plants may serve a solution. Determination of possible role of native vegetation in the management of prevalent diseases in the studied area was the basic concept. Hence, vegetation, their occurrence and the most prevalent diseases of the region were observed and recorded. The observations supported the hypothesis and it was found that, there are many plants which may be useful in the management of prevalent diseases in studied area.

Keywords: Ayurvedic treatment, diseases, medicinal plants, medicinal use, weeds

INTRODUCTION

Gwalior is a district [Figure 1] of Madhya Pradesh with approx [Figure 2]. 5214 km² area and 2032036 population, comprises of approx. 37% rural and 63% urban population.^[1] The Department of Social Justice and Empowerment, Ministry of Social Justice and Empowerment, Government of India has published a report in 2004–05 comprises a state-wise percentage of population below poverty line and designated 14th rank to M.P. with an average of 38.3% for rural and urban population.^[2] The report of the Reserve Bank of India, published in 2015 mentioned that approx. 31.65% population of M.P. was below poverty line during 2011–12 based on MRP consumption.^[3]

The World Bank Analyzed in 2019 that the poverty is the major reason behind ill health and also is a barrier to get proper health care whenever required.^[6]

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The prices of medicines and pharmaceuticals are unaffordable for most of the population of developing countries. The role of native vegetation in the management of diseases which occur prevalently in that region could be explored to provide an effective, yet affordable alternative.

As per the World Health Organization (2019), approximately 80% of world's population depends on traditional medicines for primary healthcare.^[7] The medicinal plants market in India was about Rs. 4.2 billion (US\$ 56.6 million) in 2019 and is expected to rise to Rs. 14 billion (US\$ 188.6 million) with CAGR 38.5% by 2026.^[8] The study summarizes the prevalent diseases reported in Gwalior and nearby regions and investigates to find out the use of local weeds in their treatment based on the reported pharmacological actions.

METHODOLOGY

Exhaustive literature research was carried out to get thorough the details, geographical and forest



Figure 1: Map of Gwalior division^[5]

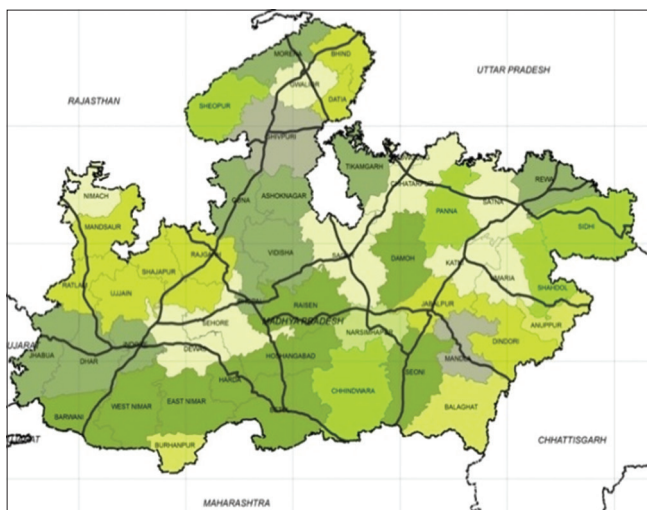
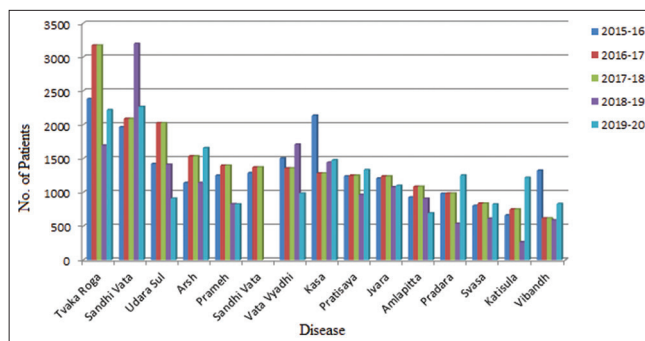


Figure 2: Forest cover map of M.P.^[4]

information and the versatile weeds of Gwalior and nearby regions with the help of search engines like, Google Scholar (<http://scholar.google.com>) and the scientific databases like, Springer (<http://www.springer.com>), Science Direct (<http://www.sciencedirect.com>), PubMed (<http://www.ncbi.nlm.nih.gov/pubmed>), RSC (<http://pubs.rsc.org/en/journals>), ACS (<http://pubs.acs.org/>), and Scopus (<http://www.scopus.com>). Occurrence of plants was recorded as per the available standard methods.^[7]



Graph 1: Disease wise registered patient in the past 5 years

Observations

The vegetation and their occurrence were observed and recorded in the studied area. The most prevalent diseases of the region were studied. The total number of patients registered in a particular year for the treatment of a particular disease at RARI, Gwalior, M.P. was studied and summarized. Based on the number of patients registered *TvakaRoga*, *SandhiVata*, *UdaraSul*, *Arsh*, *Prameh*, *SandhiVata*, *VataVyadhi*, *Kasa*, *Pratisaya*, *Jvara*, *Amlapitta*, *Pradara*, *Svasa*, *Katisula*, and *KosthaBaddhata* were found to be the most prevalent diseases [Graph 1].^[10,11]

In general term, *TvakaRoga* is known as *Kushtha* in Ayurveda, derived from the root “*Kushu*” means that, it comes out from the inner to the outer part and destroys the organs of the body and is the most baneful disease affecting the human beings.^[12,13]

Sandhivata or osteoarthritis is a degenerative disorder affecting mostly weight bearing joints specially knee joint resulting in pain, swelling, and restrictive movement of the affected joint. *VataVyadhi* (Neuro-degenerative diseases) are mostly painful/neurological diseases such as hemiplegia, trigeminal neuralgia, sciatica, paraplegia, and facial paralysis. *Katisula* (Backache) is pain in lumbo sacral region of spine arising due to muscular sprains, trauma, disc prolapse, etc.

Udarashula refers to pain abdomen mostly due to indigestion, gaseous distention, gastritis, etc. *Arsha* or hemorrhoids are swollen and inflamed veins in the rectum or anus which are painful and may cause bleeding too. They arise due to increased pressure on lower rectum. They may be internal or external and bleeding or non-bleeding.

Prameh (Diabetes) refers to *prabhutavilmutrata*, that is, increased urination which is turbid in nature.

Table 1: Plants available in Gwalior and nearby regions with their medicinal uses [Figure 3].^[13-40]

| Common Name | Botanical Name | Family | Part Used | Georeference |
|--|---|----------------|-----------------------|----------------------------------|
| TvakaRoga | | | | |
| <i>Palash</i> | <i>Butea monosperma</i> Lam. Taub. | Fabaceae | Flower, seeds | Dabra |
| <i>Karanj</i> | <i>Pongamia pinnata</i> L. Pierre | Fabaceae | Root, root bark, stem | Lahar |
| <i>Nimb</i> | <i>Azadirachta indica</i> A. Juss. | Meliaceae | Leaves, stem bark | Gwalior |
| <i>Khadir</i> | <i>Acacia catechu</i> L. F. Willd. | Fabaceae | Heart wood | Dabra |
| <i>Chounlayi</i> | <i>Portulaca quadrifida</i> L. | Portulacaceae | Leaves | Gwalior, Dabra |
| <i>Prapunada</i> | <i>Cassia tora</i> L. | Fabaceae | Seeds | Ghateegaon |
| <i>Bakuchi</i> | <i>Psoralea corylifolia</i> Linn. | Leguminoosae | Fruit | Shivpuri, Morena |
| Katisula, SandhiVata and VataVyadhi | | | | |
| <i>Vidang</i> | <i>Emblica ribes</i> Burm. f. | Primulaceae | Fruits | Ghateegaon |
| <i>Gokshur</i> | <i>Tribulus terrestris</i> L. | Zygophyllaceae | Fruits | Datia |
| <i>Amaltas</i> | <i>Cassia fistula</i> L. | Fabaceae | Fruit pulp | Lahar |
| <i>Apamarga</i> | <i>Achyranthes aspera</i> L. | Amaranthaceae | WP | Gwalior, Dabra |
| <i>Chitrak</i> | <i>Plumbagozeylanica</i> L. | Plumbaginaceae | Roots | Bhind |
| <i>Chounlayi</i> | <i>Portulaca quadrifida</i> L. | Portulacaceae | Leaves | Gwalior, Dabra |
| <i>Ashwagandha</i> | <i>Withania somnifera</i> (L.) Dunal | Solanaceae | Roots | Gwalior |
| Arsh | | | | |
| <i>Mahanimba</i> | <i>Melia azedarach</i> Linn. | Meliaceae | Seeds | Gwalior, Shivpuri |
| <i>Changeri</i> | <i>Oxalis corniculata</i> L. | Oxalidaceae | WP | Gwalior |
| <i>Erand</i> | <i>Ricinus communis</i> L. | Euphorbiaceae | Seeds | Lahar |
| Prameh | | | | |
| <i>Beejak, Vijaysar</i> | <i>Pterocarpus marsipium</i> Roxb. | Leguminoosae | Heart wood | Talbehat |
| <i>Nimb</i> | <i>Azadirachta indica</i> A. Juss. | Meliaceae | Leaves | Gwalior, Shivpuri |
| <i>Khadir</i> | <i>Acacia catechu</i> L. F. Willd. | Fabaceae | Heart wood | Dabra |
| <i>Jamun</i> | <i>Syzygium cumini</i> L. Skeels | Myrtaceae | Seeds | Gwalior, Shivpuri |
| <i>Amalaki</i> | <i>Phyllanthus emblica</i> L. | Euphobiaceae | Dried fruits | Gwalior |
| <i>Guduchi</i> | <i>Tinospora cordifolia</i> Willd. Miers. | Menispermaceae | Stem | Gwalior, Shivpuri, Dabra |
| Kasa, Pratishaya and Svasa | | | | |
| <i>Vasaka</i> | <i>Adhatoda vasica</i> Nees. | Apocyanaceae | Leaves, oil | Morena |
| <i>Kasmard</i> | <i>Cassia occidentalis</i> L. | Fabaceae | Leaves | Lahar |
| <i>Makoi</i> | <i>Solanum americanum</i> Mill. | Solanaceae | Leaf, stem | Gwalior, Lahar |
| <i>Tulsi</i> | <i>Occimum sanctum</i> L. | Lamiaceae | Leaves | Gwalior, Shivpuri, Dabra |
| <i>Shirish</i> | <i>Albizia lebbek</i> L. Benth. | Mimosaceae | Stem bark | Gwalior |
| <i>Kantakari</i> | <i>Solanum surattense</i> Burm. f. | Solanaceae | WP | Gwalior, Shivpuri, Dabra, Morena |
| <i>Bhringaraja</i> | <i>Eclipta alba</i> L. Hassk. | Asteraceae | WP | |
| Jvara | | | | |
| <i>Guduchi</i> | <i>Tinospora cordifolia</i> Willd. Miers. | Menispermaceae | Stem | Gwalior, Shivpuri, Dabra |
| <i>Saptaparni</i> | <i>Alstonia scholaris</i> (L.) R. Br. | Apocyanaceae | Bark | Gwalior, Shivpuri |
| <i>Tulsi</i> | <i>Occimum sanctum</i> L. | Lamiaceae | Leaves | Gwalior, Shivpuri, Dabra |
| <i>Junglichoulai</i> | <i>Amaranthus viridis</i> L. | Amaranthaceae | Leaves, stem | Gwalior, Lahar |
| <i>Kantakari</i> | <i>Solanum surattense</i> Burm. f. | Solanaceae | WP | Gwalior, Shivpuri, Dabra, Morena |
| <i>Bakuchi</i> | <i>Psoralea corylifolia</i> Linn. | Leguminoosae | Fruit | Shivpuri, Morena |
| Amlapitta | | | | |
| <i>Amalaki</i> | <i>Phyllanthus emblica</i> L. | Euphobiaceae | Dried fruits | Gwalior |
| <i>Apamarga</i> | <i>Achyranthes aspera</i> L. | Amaranthaceae | WP | Gwalior, Shivpuri, Dabra, Morena |

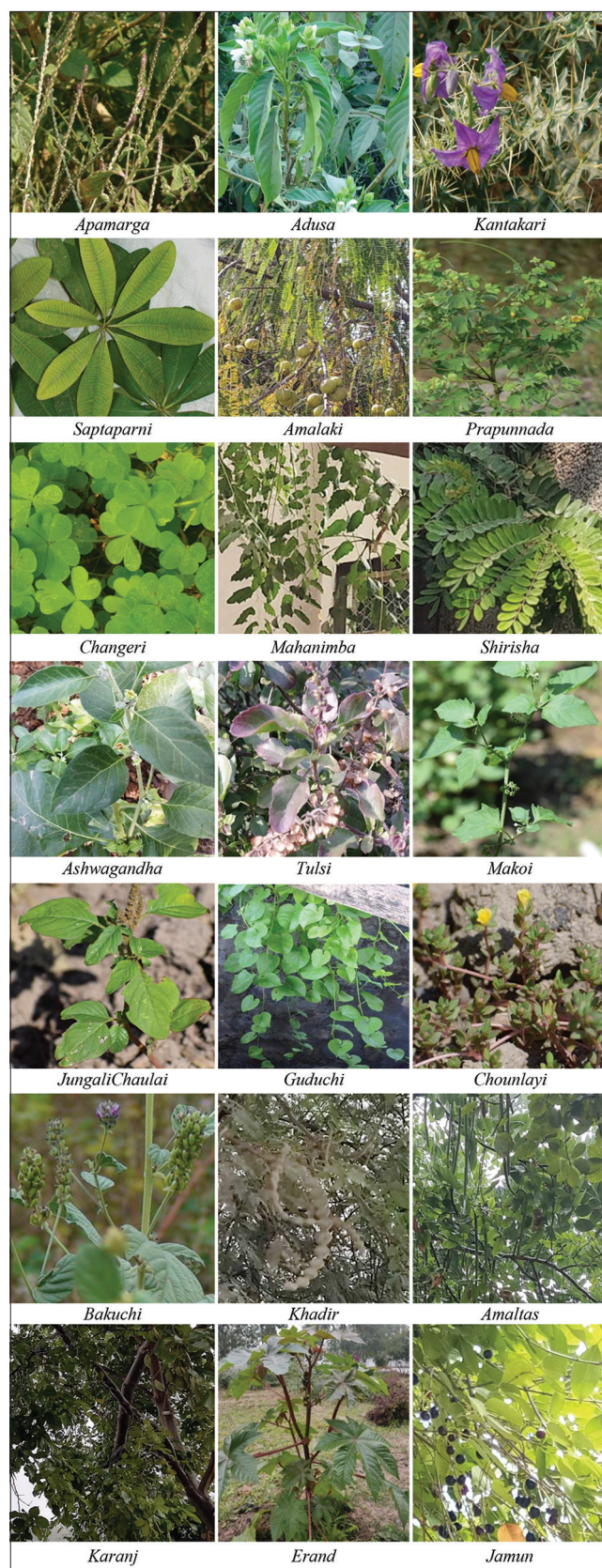


Figure 3: Images of few plants available in Gwalior and nearby regionsG

Kasa (Cough) refers to sound as of a *kansya* (bronze) utensil which may arise due to various

respiratory diseases such as bronchitis, asthma, pneumonia or as a reflex against foreign material. *Pratisaya* (Common Cold) is upper respiratory disease affecting nasal passage resulting in sneezing, heaviness in head, nasal discharge, bodyache, etc.^[9] *Svasa* (Asthma) refers to dyspnea or breathlessness arising due to spasm/restriction in airway passage due to various underlying conditions such as allergy, bronchial asthma, pneumonia, and foreign bodies.

Jvara (Fever) is termed as *santapodehmanasah* meaning discomfort/burning sensation in body and mind. It arises due to various underlying conditions such as viral, bacterial, or traumatic causes.

Amlapitta (Acid peptic disease) is disease of *annavahstrotas* due to hyperacidic condition with common features of *avipaka* (indigestion), *hrut-kanthdaha* (burning sensation in heart and throat), *tiktaamlodgar* (sour-bitter belching). *Pradara* (Leucorrhoea) is thick white or yellowish discharge from vaginal passage in females. *Vibandh/KosthaBaddhata* (Constipation) is bowel movement that is reduced or hard to pass resulting in discomfort, painful defecation, or incomplete defecation.

DISCUSSION AND CONCLUSION

The prices of medicines and pharmaceuticals are unaffordable for most of the population of developing countries. The most prevalent diseases of the region were studied. Most prevalent diseases found during the reported years were *TvakaRoga*, *SandhiVata*, *Udara Shula*, *Arsh*, *Prameh*, *VataVyadhi*, *Kasa*, *Pratisaya*, *Jvara*, *Amlapitta*, *Pradara*, *Katisula*, and *Vibandh (KosthaBanddhata)*. Determination of possible role of native vegetation in the management of prevalent diseases in the studied area was the basic concept. The vegetation and their occurrence was observed and recorded. Local plants useful in above diseases are summarized in Table 1. The observations supported the hypothesis and it was found that, there are many plants which may be useful in the management of prevalent diseases studied area. These are easily available and affordable.

High expenditure over drugs and pharmaceuticals is a problem for developing countries and a rational, cost effective approach for the treatment

could be the solution. Hence, there is need to understand and explore the role of native plants which are available nearby easily to treat the most prevalent diseases. This may also serve as a tool for customized medication for individual problem as well as patient.

ACKNOWLEDGMENT

Expressing sincere thanks to Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of AYUSH, Government of India for huge encouragement.

SOURCES OF FUNDING

None.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

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