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ETHNO-GYNECOLOGICAL KNOWLEDGE OF MEDICINAL PLANTS USED BY RURAL PEOPLE OF VILLAGES OF GURUGRAM DISTRICT, HARYANA INDIA

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ABSTRACT: Ethnogynaecology is a young field of study that emphasize how indigenous people and local healers manage gynecological conditions in females. The goal of the current study was to record in-depth information about Ethnogynaecology in a previously unexplored region of Haryana. In the year 2022, a floristic and ethnomedicinal survey was conducted in Haryana, India in rural areas of Gurugram district. The present study identified forty plant species with twenty-seven families for treatment of various gynecological disorders. The most frequently used plant parts for herbal preparations were roots followed by leaves, fruit, bark, seed, whole plant, stem, buds, and bulb. The ethno-gynecological significance of medicinal plants in India provides a fertile ground for further scientific investigation to assess their potential, isolate bioactive compounds, and subsequently develop medications for the widespread gynecological health problems experienced by women worldwide.

INTRODUCTION: Ethnogynaecology is a new field of ethnobotany that focuses mostly on the use of medicinal plants to treat gynecological conditions such as menstrual issues, abortion, breastfeeding, infertility, gonorrhea, leucorrhea, and delivery disorders [1, 2]. The development of novel crude medicines from alleged native medicinal plants depends on ethnomedical studies. Since its inception, ethnobotany has found or provided several important contemporary medications, with a focus on documenting traditional knowledge of plant medicine [3, 4].

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The rural society and tribal communities rely on medicinal plants as the foundation of their healthcare systems [5]. Over 85 percent of the world's primary medicines come from plants [6]. The World Health Organization (WHO, 2002) estimates that up to 80% of people worldwide relies on traditional medicine for their primary health care [7]. Increasing rates of female infertility, illness and mortality have been linked to the worldwide epidemic of gynecological problems. Diseases affecting the reproductive system of women are collectively referred to as gynecological disorders. They range from manageable to catastrophic in severity.

They reduce a woman's health, fertility, and lifespan. Some of the most common gynecological conditions that affect women in India and around the world include uterine fibroids, amenorrhea, dysmenorrhea, endometriosis, hyperprolactinemia, pelvic inflammatory disease, dyspareunia, lactation

issues, delivery issues, miscarriages, tubal damage, and gynecological cancers [4, 8]. They may originate from physiological, pathological, or pharmaceutical causes. Physical variables, such as age, stress, poor food, lack of exercise, overweight, underweight, and obesity are the causes of reproductive dysfunction in women. Certain gynecological diseases have been linked to pharmaceuticals mainly including reserpine, antipsychotic drugs, risperidone, phenothiazines, metoclopramide, oral contraceptive pills, *etc* [9].

There is virtually little literature on ethno-gynecology, but there are numerous reports on ethnobotanical and ethnomedical expertise [10, 11, 12, 13]. Several ethnomedicinal studies have been undertaken to investigate the role of herbal medicine in women's medical and reproductive health conditions.

Similarly, nothing is known about the medicinal herbs utilized by pastoral women for the treatment of gynecological issues. Moreover, due to modernization and the rapidly diminishing interest of newer generations in indigenous knowledge, ethno ecological information may be lost if not properly documented [14].

Allopathic medications, anti-inflammatory medications, surgery, and non-steroidal analgesics are frequently utilized to treat gynecological diseases in modern society. It's great that conventional medication has been so helpful in treating and managing a wide range of gynecological illnesses, but some of these drugs come with serious risks to the gut, heart, and brain. Furthermore, some medications taken throughout pregnancy can harm the embryo.

In light of this, the present study was designed to explore medicinal plant resources and traditional knowledge of the Gurugram district of Haryana for treating a variety of gynecological disorders. In the present study, a comprehensive record of plant species, parts used, application, and estimated doses in conceivable circumstances, as well as ethnomedicinal values for treating gynecological problems among rural people, has been compiled.

METHODOLOGY:

Data Collection: The present study was carried out during the year 2022. The fieldwork was conducted in various villages of the Gurugram area of Haryana to investigate the potential for ethnomedicine of the local plants.

Semi-structured interviews and household surveys using questionnaires were used to gather the data. Only after explaining the goal of the study and obtaining the interviewee's prior consent did the interviews with residents start. Cross-referencing the data with other data from nearby villages was also done.

Informants were permitted to speak freely and without interruption, and the questionnaire did not contain any strict questions. All of the details about plant species, biological forms, habitat, regional names, and preparation/administration methods were recorded. With the assistance of taxonomists, plant specimens collected at various times of the year were identified by comparison with known herbarium specimens and published works.

For future use, the voucher samples were placed at the Baba Mastnath University Herbarium (BUH). Plants were also identified with the help of ICAR-National Bureau of plant genetic resources, Pusa campus, New Delhi. Some other means of identification such as taxonomic experts, accessible literature, and internet were used.

Study Site: Gurugram is a district in the southeastern section of Haryana and the northern part of India. It is located between the latitudes of 27° 39' and 28° 32' 25" north and the longitudes of 76° 39' 30" and 77° 20' 45" east.

Gurugram is bounded to the north by Delhi and the district of Jhajjar, to the south by Mewat, to the east by Faridabad, and to the west by the state of Rajasthan and the district of Rewari. This emerging neighborhood in Delhi, close to the National Capital Area, is home to many global corporations and, as a result, has lots of malls, hotels, and eateries that are welcoming to tourists.

The Sheetla Mata temple, a well-known pilgrimage destination named for the Indian goddess who had the power to ward against smallpox, is the area's main draw. Gurugram district is divided into five tehsils: Gurugram, Sohna, Pataudi, Farrukh Nagar, and Manesar.

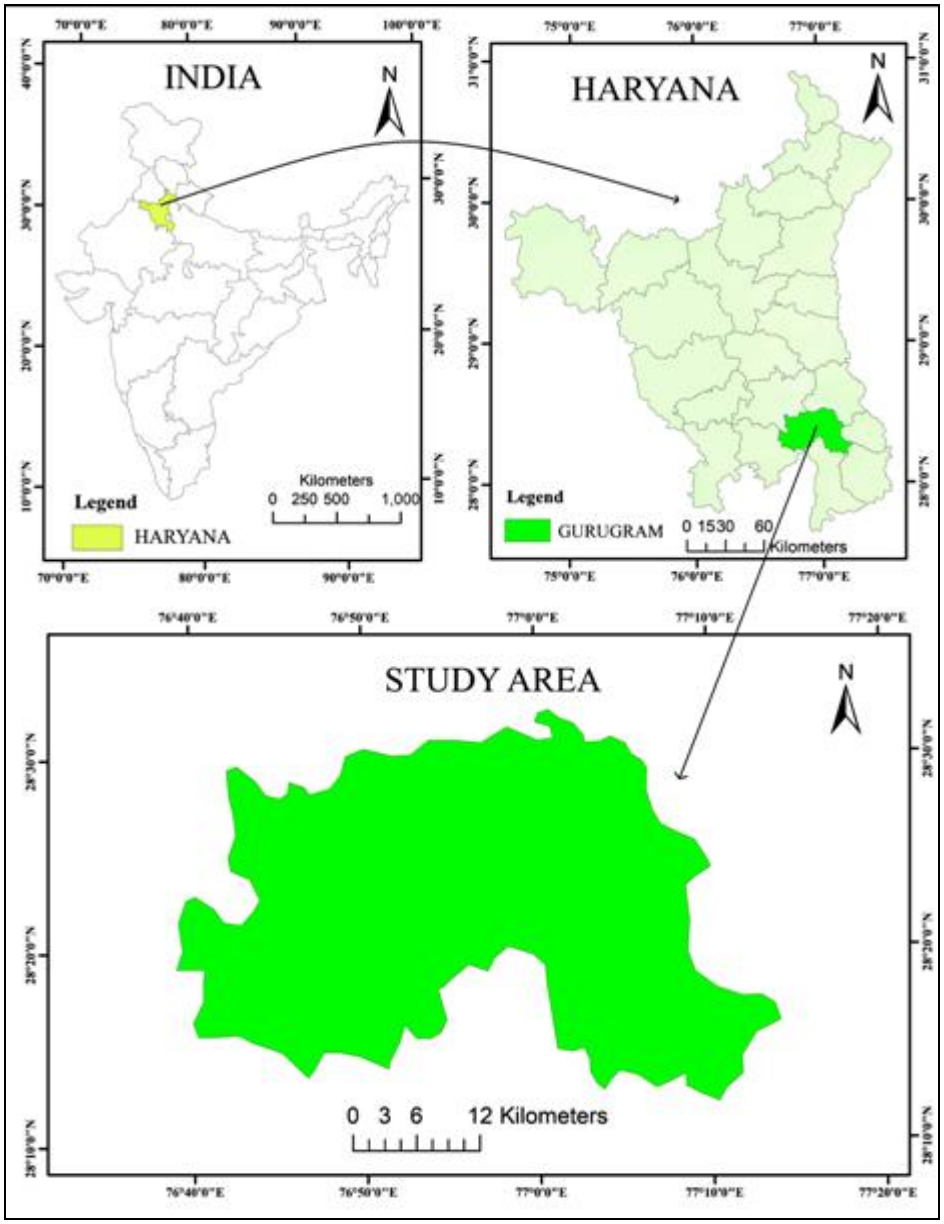


FIG. 1: MAP OF THE STUDY SITE

RESULT AND DISCUSSION: The current survey provides details on the medicinal effects of crude extract used to treat common female diseases. Interviews were conducted with 106 women, and 21 traditional healers overall. The majority of the informants were between the ages of 40 to 50. The present study reported that herbal knowledge is passed down through parents to the younger generation. Due to the high rate of consultation, the respondents, in particular the herb dealers and herbalists indicated that most study area women with gynecological diseases chose traditional medicine over orthodox medicine. Table 1 lists the names of the plant species, their names in the local language, the method of administration, and the methods used to make herbal remedies. An additional benefit in reaching the goal of this study was the informants' openness to sharing information on the regional herbs used for various gynecological problems in the study area. The study demonstrates that indigenous healers learned about the usage of various ethnomedicinal plants, their parts, dosages, and applications through trial and error. This information is only transmitted from one generation to the next orally.

Forty plant species with twenty-seven families were identified for the treatment of various gynecological disorders **Table 1**. The most dominant plant families were Amaranthaceae, Fabaceae, Malvaceae, Apocynaceae, and Solanaceae with three species each followed by

Nyctaginaceae, Cucurbitaceae, and Euphorbiaceae with two species each. There were nineteen families with one species only. The most frequently used plant parts for herbal preparation were roots followed by leaves, fruit, bark, seed, whole plant, stem, buds, and bulb **Fig. 4**. Balamurugan *et al*. [15]; Aziz *et al*. [16] and Surenderan *et al*.[5] also documented leaves and roots as the dominant plant parts used for herbal medicine preparation. The plants documented during the study were mostly herbs followed by trees, shrubs, and climbers **Fig. 3**. Mir *et al*. [17] also reported herb as the dominant vegetation for traditional use. The most common methods of drug preparation were paste (26%) and powder (24%) followed by Juice (20%), decoction (13%), extract (11%), and latex (4%) **Fig. 5**. Balamurgan *et al*.[15] also reported paste and powder as the most common methods of herbal drug preparation.

Overall, the Ethno-gynecological study of plants is a relatively new subject of study, and if it is explored extensively and methodically, it will provide valuable information for ethnologists, archaeologists, anthropologists, plant geographers, and other academics. The social and cultural demands of the populace are also met by herbal medicine, which also affects the patient's physical, mental, and emotional states. The natural components of herbal medicines created using conventional procedures are preserved in their "naturally balanced form," without any vital component being lost, and the drugs activity and purity are maintained. Herbal medicines probably have extremely few side effects because of their naturally balanced form, which includes many essential components. They have been tested for a long time and have been shown to have side effects that are beneficial in place of the negative effects typically caused by dangerous synthetic and chemical-based items. Various plants might also be used in the production of cosmetics, which are highly valuable both in India and abroad. You can find knowledge on Ethno-gynecological plants in our ancient literature. The tribal and destitute people in India are thought to use close to one-third of the country's 15,000 higher plant species [18]. Therefore, Indian folk life has seen the image of God in trees, plants, and flowers since the very beginning and has included them in their family as well. However, increased activity brought on by urbanization and industrialization poses a threat not only to the indigenous flora but also to species that the locals employ as medicines. To encourage the sustainable use of medicinal plants, it is vital to raise knowledge among the local population by encouraging methods like regulated grazing, reforestation, and correct land management.

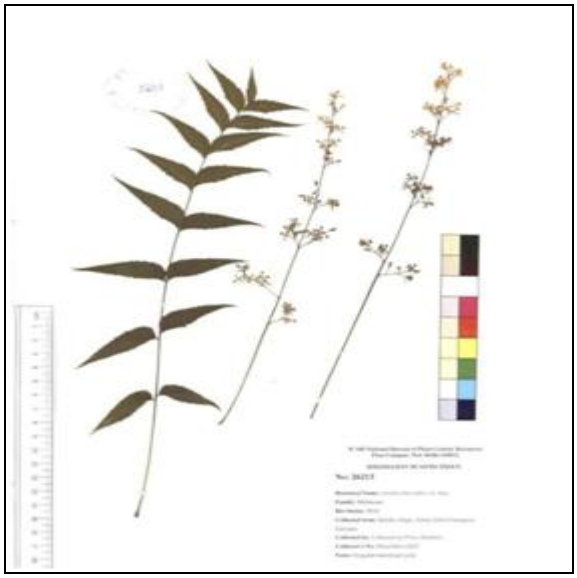
The information provided in this paper on the therapeutic applications of plant pharmaceuticals may offer new sources of herbal medicines and raise public awareness of their potential value as a complement to conventional medicine. These studies may also provide opportunities for putative herbal medicines to undergo thorough photochemical and pharmacological testing in order to comprehend the molecular underpinnings of their actions.

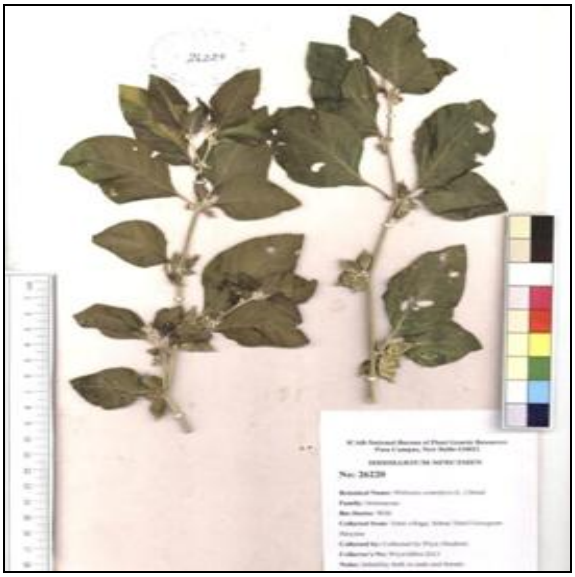
TABLE 1: ETHNO-GYNECOLOGICAL USES OF SOME IMPORTANT MEDICINAL PLANTS

S. no.	Botanical name	Local name	Family	Habit	Status	Plant part used	Diseases treated	Method of drug preparation	Dosage
1.	*Achyranthes aspera L.*	Ultakanta	Amaranthaceae	Herb	Wild	Roots	Abortion	Decoction of root is prepared	Juice of the root is given orally in case of abort of child
						Leaves and root	Pain during delivery	Powder is prepared by grinding the seeds	Powder mixed with some water and given orally before delivery
2	Allium cepa L.	Pyaj	Liliaceae	Herb	Cultivated	Bulb	Menstrual disorder	Peel the onion extract the juice and also add sangha salts in it	Given two spoons daily for a few days
3	*Aloe barbadensis Mill.*	Aloe vera	Asphodelaceae	Herb	Wild/ cultivated	Leaves	Menstrual disorder	Juice is extracted from leaves	Given orally Half a teacup for few days
4	*Bauhinia variegata L.*	Kachnar	Fabaceae	Tree	Ornamental	Floral buds	To induce lactation	Powder is prepared from dried floral buds	Given with cow milk for a few days
5	*Bombax ceiba L.*	Shimul	Bombaceae	Tree	Ornamental / Cultivated	Roots, Bark	Excessive menstrual discharge and increased	Juice is prepared from the bark of the tree	Fresh and young roots are eaten raw to increase sexual potential and

							sexual potential		Menstrual disorders treated by the juice of bark
6	*Boerhaavia repens L.*	Punarnava	Nyctaginaceae	Herb	Wild	Whole plants	Leucorrhoea	The whole plant is crushed and the extract is prepared	Given orally 1-3 spoon for one week
7	*Tamarindus indica L.*	Imli	Cesalpiniaceae	Tree	Cultivated	Fruit	Contraceptive	Raw	Fresh fruit is eaten directly
8	*Cissus quadrangularis L.*	Hadjod	Vitaceae	Climber	Wild	Stem	Excessive bleeding during menstruation	Skin-removed stem juice mixed with Sandalwood, honey, and glue is given orally	3-6 days in the morning with an empty stomach
						Stem	Irregular menstrual cycle	Juice is prepared from the stem	Juice given orally for two weeks
9	*Euphorbia hirta L.*	Dudhi	Euphorbiaceae	Herb	Wild	Latex	To increase Brest milk secretion	Latex is obtained	Latex is given orally
10	*Ricinus communis L.*	Arand	Euphorbiaceae	Shrub	Wild	Seed	Contraceptive	Removal of the seed coat and endosperm is taken out	Chewed orally for seven days before and after menstruation
11	*Terminalia arjuna* (Roxb. Ex DC.) Wight & Arn	Arjun	Combretaceae	Tree	Ornamental	Bark	Leucorrhoea and menstrual disorder	Juice is prepared from bark	Given orally
12	*Tinospora cordifolia (Wild.)*	Giloy	Menispermaceae	Climber	Wild	Root	Irregular Menstrual Cycle	Paste is prepared from the root	2-3 gm of root paste given orally with an empty stomach
13	*Madhuca latifolia (Roxb.) J.F. Macbr.*	Mahua	Sapotaceae	Tree	Wild/ Ornamental	Root bark	Over bleeding after delivery	Paste is prepared from root bark	Given twice a day, 3-4 days for
14	*Abutilon indicum(L) Sweet*	Kanghi	Malvaceae	Herb	Wild	Seed	During reproductive age, there is no menstrual cycle	Powder is prepared by grinding the seeds	Power is mixed with some water and given orally for 3-4 days
15	*Amaranthus viridis L.*	Chaulai	Amaranthaceae	Herb	Wild	Leaves	Leucorrhoea	Paste of leaves is prepared by grinding of leaves	3-5 gm given orally for 10 days
16	*Azadirachta indica A. Juss.,*	Neem	Meliaceae	Tree	Wild	Fruit and bark	Irregular menstrual cycle	The powder is prepared from fruit and then mix with water to form a paste	Given orally for a few days
17	*Boerhavia diffusa L.*	Punarnava	Nyctaginaceae	Shrub	Wild	Leaves	Leucorrhoea	A decoction is prepared by boiling leaves	Given 15 ml Decoction early in the morning, orally for a few days
						Roots	Leucorrhoea	Fresh roots are ground and paste is prepared	Given orally
18	*Calotropis gigantea (L.) R. Br.ex Schult*	Aakta/Aakda	Apocynaceae	Shrub	Wild	Roots	Induce uterine contraction during childbirth	A decoction is prepared by boiling the dried roots	Given orally before delivery
						Roots	To induce abortion	Root washed and dried and paste is prepared	5 gm root paste is given orally to a pregnant woman
19	*Catheranthus roseus (L.) G .Don.*	Sadabhar	Apocynaceae	Herb	Wild	Leaves	Leucorrhoea	Fresh leaves crushed and mixed with honey	Given orally
20	*Cynodon dactylon Pers.,*	Doob grass	Poaceae	Tuber	Wild	Fruit	Induce sexual desire	Powder is prepared from fruit	50 gm fruit powder given with honey
21	*Butea monosperma (Lam.) Taub.*	Dhak	Fabaceae	Tree	Ornamental	Whole plant	Leucorrhoea	The extract is prepared from root, stem, and seed	Given orally for one week
22	*Embalica officinalis Gaerten. (T)*	Anwala	Phyllanthaceae	Tree	Cultivated	Fruit	Gonorrhea	Raw	Eaten
23	*Withania somnifera (L) Dunal*	Ashwagandha	Solanaceae	Herb	Wild	Roots	Infertility both in male and female	Roots paste	2-3 gm of root paste is given orally on empty stomach for 10-15 days
24	*Hibisicus rosa-sinensis L.*	China rose	Malvaceae	Shrub	Ornamental	Flower and root	Absence of menstrual period	Paste is prepared by grinding flower and root	Eaten

25	*Lawsonia inermis L.*	Hina	Lythraceae	Tree	Cultivated	Leaves	Gonorrhea	Dried leaves are grinded and powder is prepared	Powder of leaves given orally with milk
26	*Leucus aspera Link.*	Thumbai	Lamiaceae	Herb	Wild	Leaves	Painful periods	Fresh leaves are crushed and juice is extracted	Juice is Given orally
27	*Mangifera indica L.*	Aam	Anacardiaceae	Tree	Wild	Seed	Stop bleeding from uterus	The outer covering of the seed is removed and the remaining part crushed to form a powder	Powder mixed with cow ghee and given orally
28	*Momordica charantia L.*	Karela	Cucurbitaceae	Climber	Cultivated	Leaves and stem	To increase Brest milk secretion	Paste is prepared from fresh leaves and stem	Applied externally to the breast
						Roots	Induce abortion	Dried leaves are grinded and powder is prepared	Given orally with water
29	*Physalis minima L.*	Pilpotan	Solanaceae	Herb	Wild	Leaves	To increase Brest milk secretion	A decoction is prepared with water	Taken orally for 7-10 days
30	*Saraca asoca (Roxb.) Wilde*	Ashok	Fabaceae	Tree	Wild	Root and bark	Leucorrhoea	Dried leaves and fruit are ground and powder is formed	5-10 gm powder is taken with water orally
31	*Sida cordifolia L.*	Khrenti	Malvaceae	Herb	Wild	Root	Leucorrhoea	Powder is prepared from dried roots	Spoonful powder is given orally with water
32	*Tribulus terrestris L.*	Bhankhdi	Zygophylaceae	Herb	Wild	Root	To treat sexually transmitted diseases	Juice is prepared by grinding fresh leaves	Given orally for a few days
33	*Amaranthus spinosus L.*	Kanta chauli	Amaranthaceae	Herb	Wild	Root	Leucorrhoea	Root washed and dried and paste is prepared	4-5gm of root paste mixed with molasses is given orally for 10-15 days
34	*Calotropis procera (Aiton) Dryand.*	Aakta	Apocynaceae	Shrub	Wild	Leaves	Leucorrhoea	A decoction is prepared from dried leaves	Given orally for a few days
35	*Citrullus colocynthis (L.) Schard.*	Gudumba/Kakora	Cucurbitaceae	Herb	Wild	Fruit	Induce uterine contraction during childbirth	Juice is prepared	Given orally before childbirth
36	*Cuscuta reflexa Roxb.*	Amar bael	Cuscutaceae	Herb	Wild	Whole plant	Sterility	Decoction is prepared	Given orally
37	*Datura stramonium L.*	Dhtura	Solanaceae	Herb	Wild	leaves	Brest inflammation	Paste is prepared	Applied externally to the breast
38	*Eclipta alba (L.) Hassk.*	Bhringraj	Asteraceae	Herb	Wild	Whole plant	Prevent miscarriage	Infusion is prepared from the whole plant	Given orally
39	*Foeniculum vulgare Mill.*	Saunf	Apiaceae	Herb	Wild	Seeds	Painful menstruation	Powder is prepared	Taken with water until get rid of pain
40	*Justicia adhatoda L.*	Bekar/Bansa	Acanthaceae	Herb	Wild	Roots	Leucorrhoea	Paste is prepared	Taken orally for a few days





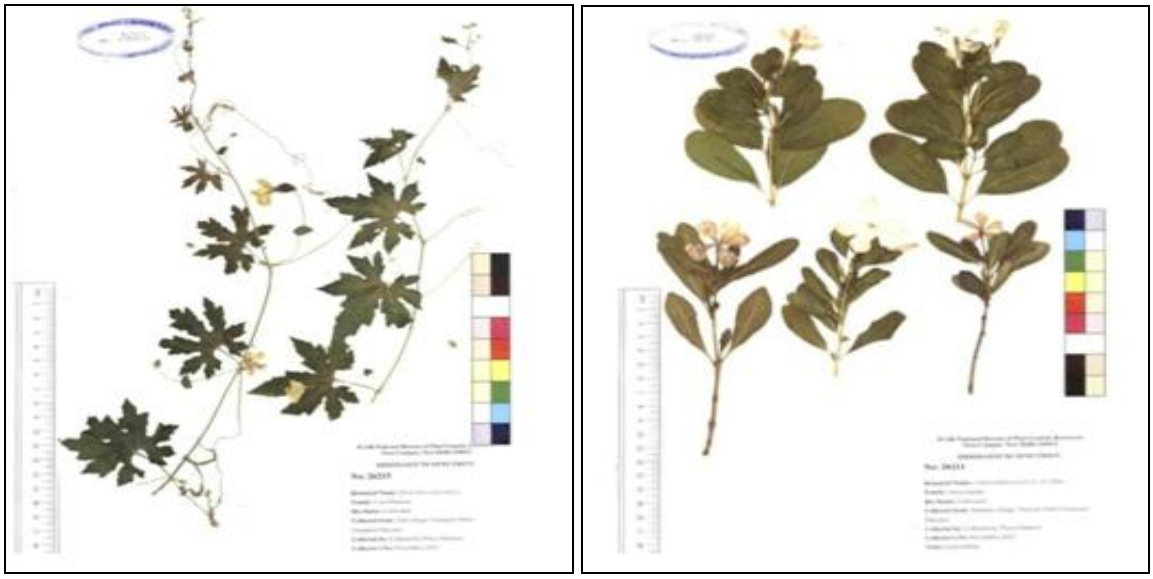


FIG. 2: SOME COMMON PLANTS REPORT FOR ETHNO-GYNECOLOGICAL PURPOSE

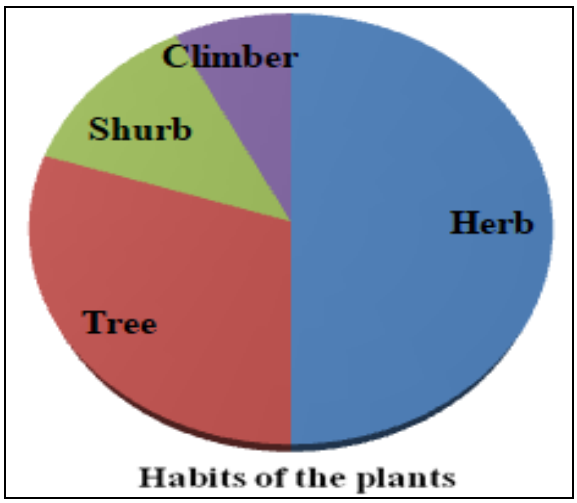


FIG. 3: HABIT OF THE PLANTS USED TO TREAT VARIOUS DISEASES

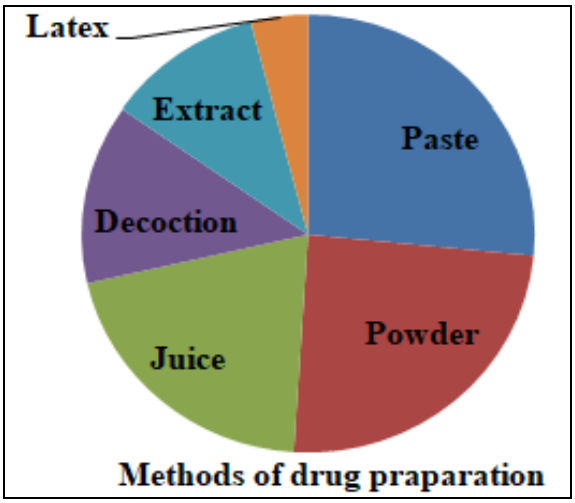


FIG. 4: MOST COMMON METHODS OF HERBAL DRUG PREPARATION

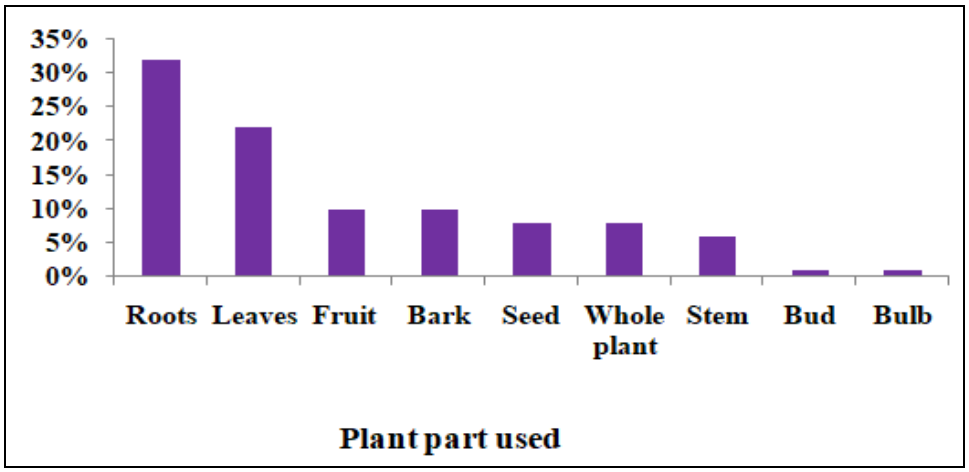


FIG. 5: PARTS OF THE PLANTS MOST COMMONLY USED TO MAKE HERBAL MEDICINES

CONCLUSION: The health and medical care of rural women was the primary focus of the current investigation. In places where conventional medical care is either unavailable or inadequate, herbal remedies can be very helpful to cure diseases. The diversity and effectiveness of medicinal plants in

the research area, as well as the openness of locals to the use of herbal remedies for the treatment of gynecological issues, lent support to the goals of this study documenting this treasure. Historically, older women have had more contact with local flora and may know more about the plants medical properties. Newer generation closer ties to allopathic medicine have contributed to the erosion of traditional healing practices. Other future applications of this study include the protection of medicinal plants.

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CONFLICT OF INTEREST: The authors state that they do not have any conflicts of interest.

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