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Ethnobotanical Survey of Medicinal Plants Used by Traditional Healers in the Al-Qassim Region, Saudi Arabia

Noorah Saleh Al-Sowayan*, Shahad AlSaawi, Rawan AlHarbi, Ghada AlHarbi

Department of Biology, College of Science, Qassim University, Buraydah, Saudi Arabia
Email: *nsaoiean@qu.edu.sa

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Abstract

Background: The use of medicinal plants in traditional healing is deeply rooted in Saudi culture. Despite the botanical diversity of the Al-Qassim region, ethnobotanical documentation of this area remains limited. This study aimed to document medicinal plants used by traditional healers in Al-Qassim to treat various ailments and to compare these uses with the available scientific literature. **Methods:** A structured questionnaire was administered through face-to-face interviews with 20 traditional healers (16 women and 4 men) conducted in the local Arabic dialect between 14 March and 25 April 2026. Data collected included local plant names, medicinal uses, and preparation methods. The Frequency Index (FI) and Use Value (UV) were calculated for each plant species. **Results:** A total of 33 medicinal plant species belonging to 17 families were documented. The Asteraceae family was the most represented (15.15%, 5 species), followed by Apiaceae and Fabaceae (15.15% each, 5 species each) and Lamiaceae (12.12%, 4 species). Cumin (Cuminum cyminum) and myrrh (*Commiphora myrrha*) recorded the highest frequency of use (75% each). Seeds were the most commonly used plant part (30.3%), and herbs were the predominant growth form (57.6%). *Pimpinella anisum* recorded the highest Use Value (UV = 1.55). Documented species were grouped into six therapeutic categories, with gastrointestinal disorders representing the largest group (10 species). **Conclusion:** The Al-Qassim region harbours substantial traditional knowledge about medicinal plants. This survey provides baseline data to guide future pharmacological and phytochemical research, and underscores the importance of documenting traditional knowledge before it is lost.

Keywords

Ethnobotany, Medicinal Plants, Traditional Medicine, Traditional Healers,

Al-Qassim, Saudi Arabia

1. Introduction

Traditional medicine is defined by the World Health Organization (WHO) as the sum of knowledge, skills, and practices based on indigenous cultural beliefs and experiences, used to maintain health and to prevent, diagnose, and treat illness [1]. Globally, up to 80% of the population relies on herbal medicine as a primary or complementary source of healthcare [2], and traditional remedies continue to contribute to the development of modern pharmaceuticals [3].

In Saudi Arabia, the use of medicinal plants for therapeutic purposes is widespread, with prevalence estimates ranging from 21.6% to 90.5% across different regions [4]. Several factors drive this reliance, including cultural familiarity, the perception that plant-based remedies are safe, long appointment wait times, and the high cost of formal healthcare consultations [4]. Saudi Arabia's ecological heterogeneity—encompassing desert plateaus, mountainous terrain, valleys, and grasslands—supports a rich flora estimated at 471 species used in traditional medicine across 89 families, with Asteraceae and Fabaceae being the most prominent [5] [6].

At the national level, Saudi Arabia has enacted regulatory frameworks for traditional medicine practice and established the Medicinal, Aromatic, and Poisonous Plants Research Center (MAPPRC) at King Saud University to coordinate research in this field [7]. Nevertheless, the transmission of traditional therapeutic knowledge remains largely oral, rendering it vulnerable to irreversible loss [7]. Ethnobotanical surveys are therefore critical for preserving this knowledge and providing a foundation for botanical, chemical, and pharmacological investigation [8].

Despite the ecological distinctiveness of the Al-Qassim region in central Saudi Arabia, no published ethnobotanical survey has systematically documented the medicinal plants used by its traditional healers. This study addresses that gap. The primary objectives were to: 1) document the medicinal plant species used by traditional healers in Al-Qassim; 2) quantify their relative importance using the Frequency Index (FI) and Use Value (UV); and 3) compare reported traditional uses with evidence from the scientific literature.

2. Materials and Methods

2.1. Study Area

The study was conducted in the Al-Qassim region, located in the central plateau of the Kingdom of Saudi Arabia (approximately 25˚N-27˚N, 42˚E-44˚E). The region is characterised by an arid desert climate, with distinctive wild vegetation and a documented tradition of herbal healing practice. The geographical location of the study area is illustrated in **Figure 1**.

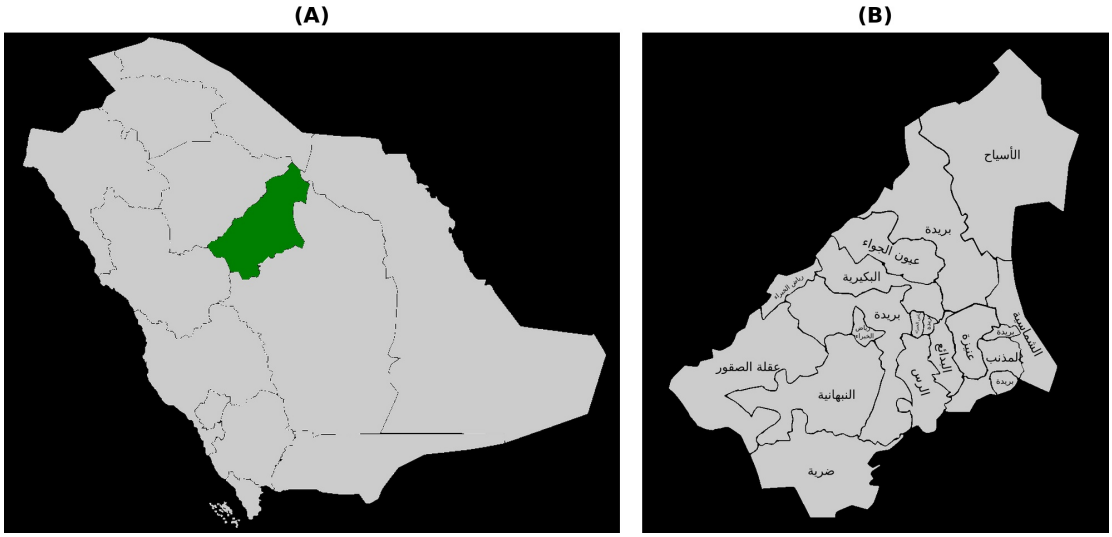


Figure 1. Location of the study area. (A) Map of the Kingdom of Saudi Arabia showing the position of Al-Qassim Province (highlighted in green). (B) Administrative districts of Al-Qassim Province, central Saudi Arabia. Maps adapted from Wikimedia Commons (public domain).

2.2. Participant Recruitment and Ethical Considerations

More than 40 traditional healers and herbal practitioners in the Al-Qassim region were contacted and invited to participate using purposive recruitment based on active practice and experience in the use of medicinal plants within the study area. Twenty individuals (16 women and 4 men) agreed to participate and completed the questionnaire; the remaining individuals did not respond or declined participation. Participants from outside the region, those with limited experience, and those who returned incomplete questionnaires were excluded. Participation was voluntary and written informed consent was obtained from all participants before data collection. No personal identifiers, biological samples, clinical procedures, or sensitive personal information were collected, and all information was analysed anonymously. In accordance with applicable local regulations for this type of non-interventional interview-based research, National Committee of Bioethics (NCBE), Kingdom of Saudi Arabia, Version 3, 2025, formal ethical approval was not required.

2.3. Recruitment Outcome and Final Sample

The final sample comprised the 20 eligible healers who responded to the invitation, agreed to participate, and completed the questionnaire. Because more than 40 potential participants were approached, the final sample reflects the response and availability of eligible traditional healers during the study period rather than a predetermined target of 20 participants. The exact response rate was not calculated because the total number of individuals successfully reached and eligible among all initial contacts was not recorded separately.

2.4. Data Collection

A structured questionnaire was developed on Google Forms and administered via

face-to-face interviews in the local Arabic dialect between 14 March and 25 April 2026. The questionnaire captured the local names of plants, their reported medicinal uses, and the methods of preparation administered to patients.

2.5. Ethnobotanical Indices

Two quantitative indices were calculated. The Frequency Index (FI) expresses the proportion of informants who cited each plant species [9]:

$$FI = FC/N \times 100$$

where FC is the number of informants citing the species and N is the total number of informants (N = 20). For Use Value (UV), one use report was defined as one distinct therapeutic indication for a given plant species reported by one informant. Synonymous descriptions referring to the same indication were consolidated, and repeated mentions of the same indication by the same informant were counted once. UV was calculated as [9]:

$$UV = \Sigma U/N$$

where ΣU is the total number of coded use reports for that species across all informants and N is the total number of informants (N = 20).

2.6. Taxonomic Identification

Vernacular plant names reported by the healers were matched to scientific names by the research team and cross-checked using relevant botanical literature, Plants of the World Online (Kew Gardens, accessed 2026), and World Flora Online. No plant material was collected and no voucher specimens were deposited; therefore, species assignments based on vernacular names should be interpreted with this limitation in mind. Plant growth forms were classified as follows: trees (perennial woody plants ≥ 6 m at maturity) [10]; shrubs (woody perennials < 2 m with basal branching) [11]; herbs (non-woody plants whose aerial parts die at the end of the growing season) [11].

3. Results

3.1. Participant Characteristics

Table 1 summarises the demographic and practice characteristics of the 20 participating healers. The majority were women (80%) and aged over 50 years (55%). Nearly half (45%) reported more than 20 years of experience in herbal healing. Family tradition was the most commonly cited source of therapeutic knowledge (50%), followed by learning from other therapists (25%). The largest monthly-caseload category was more than 20 cases per month (35%).

3.2. Documented Plant Species and Therapeutic Categories

A total of 33 medicinal plant species were documented, distributed across 17 families (**Table 2**). Asteraceae, Apiaceae, and Fabaceae were the most represented families (15.15% each, 5 species each), followed by Lamiaceae (12.12%, 4 species).

Table 1. Characteristics of traditional healers participating in the study (n = 20).

Category	Variable	N	%
Sex	Female	16	80
	Male	4	20
Age group (years)	<30	2	10
	30 - 40	2	10
	41 - 50	5	25
	>50	11	55
Years of experience	<5 years	3	15
	5 - 10 years	4	20
	11 - 20 years	4	20
	>20 years	9	45
Source of knowledge	Family tradition	10	50
	Learning from other therapists	5	25
	Personal practice	3	15
	Books and references	1	5
	Training courses	1	5
Monthly caseload	<5 cases/month	6	30
	5 - 10 cases/month	5	25
	11 - 20 cases/month	2	10
	>20 cases/month	7	35

Table 2. Ethnobotanical information of medicinal plants used to treat various ailments in Al-Qassim region, Kingdom of Saudi Arabia.

Family	Scientific Name	Vernacular Name	Plant Form	Plant Part Used	Forms of Preparation	FI (%)	UV
Apiaceae	*Cuminum cyminum*	Cumin الكمون	Herb	Seeds	The seeds are boiled and the mixture is drunk for abdominal gases, nausea, improving digestion, enhancing iron absorption, and supporting the immune system. They are used for colon irritation, calming the nerves, relieving congestion, and reducing menstrual pain. The seeds are also used as a powdered spice in food for postpartum use or mixed with other herbs and applied to infants to assist teething.	75	1.25
	Ferula assa-foetida	Asafoetida الحلتيت	Herb	Resin	The resin is soaked in water and drunk to relieve gas and act as an anti-inflammatory. It may help with women's health issues. It can also be placed in a piece of cloth and inhaled to help with irritation from strong smells.	30	0.45

Continued

	Foeniculum vulgare	Fennel الشمر	Herb	Seeds/ leaves	The seeds are boiled and the mixture is drunk to improve digestion, relieve stomach problems and gases, and reduce menstrual pain and nausea.	40	0.55
	Pimpinella anisum	Anise اليانسون	Herb	Seeds	The seeds are boiled and the mixture is drunk for calming the nerves, promoting relaxation and good sleep, relieving digestive problems and gases, and relieving cough. It is also used to increase breast milk production in breastfeeding mothers, and for infant colic, and is beneficial for chest problems.	55	1.55
	Trachyspermum ammi	Ajwain/Carom seed النانخه	Herb	Seeds	The seeds are boiled with water and drunk to relieve headaches and gas.	10	0.1
Asphodelaceae	*Aloe vera*	Aloe الصبره	Herb	Gel	The gel is mixed with water until it forms a paste and is used to treat acne, eczema, hemorrhoids, boils, and wounds, and to help heal a newborn's umbilical area. It can also be mixed with water and drunk to relieve constipation and inflammation.	15	0.45
Asteraceae	*Achillea fragrantissima*	Desert yarrow القيصوم	Shrub	Aerial parts	The aerial parts are boiled and drunk. They may help with stomach problems, gas, constipation, colon health, and blood sugar levels.	10	0.3
	Artemisia herba-alba	White wormwood الشيح	Shrub	Aerial parts	The aerial parts are boiled and the mixture is drunk for relieving colds, menstrual pain, and stomach disorders such as intestinal worms and gases.	60	0.85
	Artemisia judaica	Desert wormwood البعيثران	Shrub	Aerial parts	The aerial parts are boiled and drunk. They may help with digestive problems, stomach cramps, gas, stomach infection (Helicobacter pylori), and appetite stimulation.	15	0.2
	Carthamus tinctorius	Safflower العصفر	Herb	Flowers/ Seeds	seeds and flowers are soaked in water and drunk. They may help calm the nerves, reduce anxiety, stress, and fear, act as an antidepressant, and support heart health.	25	0.45
	Saussurea costus	Costus القسط الهندي	Herb	Roots	The roots are dried and ground, and the powder is mixed with water. It may act as an antibacterial, strengthen the immune system, support respiratory health, improve digestion, help with hormone balance, support fat metabolism, support liver function, and help lower blood sugar levels.	20	0.35
Boraginaceae	*Alkanna tinctoria*	Dyer's alkanet/Alkanet الخواجوا	Herb	Roots	The roots are boiled with olive oil until it turns red. It is used to treat wounds and burns and reduce scarring, relieve menstrual pain, support respiratory health, soothe cough, strengthen immunity, reduce irritation from strong smells, and help with hemorrhoids.	40	0.8

Continued

Brassicaceae	*Lepidium sativum*	Garden cress الرشاد	Herb	Seeds	The seeds are soaked in water and drunk. They may help with stomach pain in gastroenteritis, stop diarrhea, relieve menstrual pain, support uterine health, ease difficult labor, improve bone and joint health, help with anemia and nerves, and are used for asthma. They may also reduce irritation from strong smells, act as a blood thinner, and help remove foreign objects like splinters or glass from the skin.	55	1.05
	Anastatica hierochuntica	Rose of Jericho كف مريم	Herb	Fruits	The fruits are boiled and drunk. They may help stimulate the ovaries, treat polycystic ovary syndrome, relieve premenstrual symptoms such as stress and breast pain, support pregnancy, and ease childbirth.	25	0.3
Burseraceae	*Commiphora myrrha*	Myrrh المره	Shrub/ small tree	Resin	The resin is soaked in water, and the infusion is used for its antibacterial and anti-inflammatory properties. It may help with sore throat, wound cleansing and healing, gum health, and digestion. It is also traditionally used for uterine inflammation. The dried resin can be placed in a piece of cloth and inhaled to help reduce irritation from strong perfumes, as well as relieve postpartum discomfort and toothache.	75	1.2
Fabaceae	*Acacia senegal*	Gum arabic tree الصمغ العربي	Tree	Gum	The gum is soaked in water and drunk. It may help support kidney and urinary tract health, support colon health, relieve sore throat, strengthen the immune system, and support bone health.	20	0.35
	Astragalus sarcocolla	Sarcocolla العنزروت	Subshrub	Gum	The gum is soaked in water and drunk. It may help relieve stomach pain and nausea, support digestive health and the colon, stop diarrhea, and relieve menstrual pain and uterine cleansing. It may also support immunity during colds, be used for children, help wound healing, and support hernia relief.	40	0.8
	Senna alexandrina	Senna السنامكي	Shrub	Leaves/ Pods	Leaves and pods are boiled and drunk to relieve constipation and cleanse the intestines.	10	0.1
	Trigonella foenum-graecum	Fenugreek الحلبه	Herb	Seed	seeds are boiled and drunk. They may help regulate blood sugar levels, improve digestion, support weight gain, relieve constipation, and help with anemia. They also support bone health, contain vitamins that strengthen the body, and are used for women's health, including hormone balance, milk production, and postpartum period.	70	1.45

Continued

	Vigna radiata	Mung bean الماش	Herb	Seeds	seeds are boiled and consumed as a drink or soup. They may help strengthen back bones after childbirth, support recovery from fractures and bruises, improve overall body health, prevent constipation, support weight gain, and help protect against colds.	45	0.75
Lamiaceae	*Origanum majorana*	Marjoram البردقوش	Herb	Leave	leaves are boiled and drunk. They may help regulate female hormones, support menstrual cycle health, improve digestive health, and help reduce insulin resistance.	30	0.3
	Salvia officinalis	Sage المراميه	Shrub	Leaves	leaves are boiled and drunk. They may help with stomach pain and nausea, improve digestion, support menstrual cycle and ovarian health, regulate female hormones, support heart health. They may also help lower blood cholesterol levels.	55	0.8
	Vitex agnus-castus	Chaste tree/Vitex عشبة المدينه	Shrub	Fruits/ Leaves	The leaves and fruits are boiled and drunk to stimulate the ovaries, help with pregnancy, support pregnancy maintenance, support uterine cleansing, and assist childbirth.	35	0.4
	Teucrium polium	Felty germander الجعده	Herb	Aerial parts	The aerial parts are boiled and the mixture is drunk to help maintain normal blood sugar levels, support bone healing, and support liver detoxification.	15	0.2
Lythraceae	*Punica granatum*	Pomegranate الرمان	Small tree	Fruit husk (peel)	Powdered pomegranate peel is mixed with boiling water and drunk. It may support digestive health, help with diarrhea, support stomach health (including stomach infections), act as a strong antioxidant, and support gum health.	10	0.25
Poaceae	*Cymbopogon schoenanthus*	Lemon grass الاذخر	Herb	Aerial parts	The aerial parts are boiled and drunk. They may help relieve headache, improve digestion, support kidney health and urinary tract cleansing, reduce fluid retention, and relieve pain. The aerial parts are also used for inhalation to help with headaches, irritation from strong smells, and sinus inflammation.	55	0.85
Ranunculaceae	*Nigella sativa*	Black seed الحبه السوداء	Herb	Seeds	seeds are boiled with milk and drunk. They may help strengthen the immune system, support resistance to illnesses and colds, act as an anti-inflammatory, support respiratory health, regulate blood sugar levels, and help relieve bone pain and strengthen bones.	30	0.6
Rosaceae	*Prunus mahaleb*	St Lucie cherry المحلب	Tree	Seeds	seeds are soaked and drunk during postpartum and for menstrual support and uterine cleansing. They are also used for inflammation caused by strong smells. The seeds can be ground and mixed with other herbs for traditional use in teething care for children, and with henna to help soften hair.	15	0.45

Continued

Rubiaceae	*Coffea arabica*	Coffee cascara قشر القهوه	Small tree	Fruit husk (peel)	Coffee husk is boiled in water and drunk. It is used to help with menstrual flow and regulate periods. It may also help with weight loss and cleaning the intestines.	5	0.25
Rutaceae	*Haplophyllum tuberculatum*	Desert rue الحزاء	Shrub	Aerial parts	The aerial parts are boiled and drunk. They may help reduce irritation caused by strong smells, support menstrual regulation, uterine cleansing, digestive problems, and bone pain.	15	0.3
Tamaricaceae	*Tamarix aphylla*	Athel tree الاثل	Tree	Aerial parts	The aerial parts are used for inhalation. They may help reduce irritation caused by strong smells, support and stimulate labor, help with wound healing, and relieve headache.	20	0.35
Urticaceae	*Urtica dioica*	Stinging nettle القراص	Herb	Leaves	Leaf powder is mixed with boiling water and drunk. It may help with urinary tract problems, joint pain, and lowering blood sugar levels.	10	0.15
Zingiberaceae	*Curcuma longa*	Turmeric الكركم	Herb	Rhizome	The rhizome is ground and mixed with water or milk. It acts as an anti-inflammatory, helps relieve joint pain, supports body cleansing from toxins and fats, supports liver function, and strengthens the immune system.	25	0.55

FI = Frequency Index, the percentage of informants who cited each plant species (FI = FC/N × 100, where FC = number of informants citing the species, N = total informants = 20); UV = Use Value, the average number of coded use reports per species per informant (UV = ΣU/N, where ΣU = total coded use reports for that species).

All remaining families contributed fewer species.

The documented species were grouped into six major therapeutic categories based on reported traditional uses (Table 3). Gastrointestinal and digestive disorders represented the largest category (10 species), followed by women's health and reproductive conditions (8 species), anti-inflammatory, analgesic, and immune-support applications (7 species), metabolic and endocrine conditions (6 species), and respiratory and neurological conditions and skin and wound-healing applications (5 species each). Several species appeared in more than one category, reflecting the breadth of their reported traditional uses; the total number of category assignments (41) therefore exceeds the number of documented species (33).

3.3. Frequency Index and Use Value

Cuminum cyminum (cumin) and *Commiphora myrrha* (myrrh) recorded the highest FI (75% each), followed by *Trigonella foenum-graecum* (fenugreek, 70%). The lowest FI was recorded for *Coffea arabica* husk (5%). *Pimpinella anisum* (anise) recorded the highest UV (1.55), indicating the greatest average number of coded use reports per informant among the documented species. Full FI and UV data are presented in Table 2.

Table 3. Medicinal plant species documented in the Al-Qassim region grouped by primary therapeutic category, with frequency index (FI) of the most cited species per category (n = 33 species, total = 41 category assignments).

Therapeutic Category	Medicinal Plant Species	n	Most Cited Species	FI (%)
Gastrointestinal & Digestive Disorders	*Cuminum cyminum*; *Foeniculum vulgare*; *Pimpinella anisum*; *Trachyspermum ammi*; *Achillea fragrantissima*; *Artemisia herba-alba*; *Artemisia judaica*; *Senna alexandrina*; *Aloe vera*; *Punica granatum*	10	*Cuminum cyminum*	75
Women's Health & Reproductive Conditions	*Anastatica hierochuntica*; *Vitex agnus-castus*; *Trigonella foenum-graecum*; *Origanum majorana*; *Salvia officinalis*; *Commiphora myrrha*; *Prunus mahaleb*; *Lepidium sativum*	8	*Commiphora myrrha*	75
Anti-inflammatory, Analgesic & Immune Support	*Curcuma longa*; *Acacia senegal*; *Astragalus sarcocolla*; *Alkanna tinctoria*; *Commiphora myrrha*; *Nigella sativa*; *Haplophyllum tuberculatum*	7	*Commiphora myrrha*	75
Metabolic & Endocrine Conditions	*Teucrium polium*; *Nigella sativa*; *Urtica dioica*; *Trigonella foenum-graecum*; *Artemisia herba-alba*; *Saussurea costus*	6	*Trigonella foenum-graecum*	70
Respiratory & Neurological Conditions	*Pimpinella anisum*; *Cymbopogon schoenanthus*; *Carthamus tinctorius*; *Saussurea costus*; *Nigella sativa*	5	*Cymbopogon schoenanthus*	55
Skin & Wound Healing	*Aloe vera*; *Alkanna tinctoria*; *Commiphora myrrha*; *Tamarix aphylla*; *Astragalus sarcocolla*	5	*Commiphora myrrha*	75

Note: Species with multiple therapeutic applications appear in more than one category. FI = frequency index (percentage of informants who cited each species).

3.4. Plant Growth Forms and Parts Used

Herbs were the predominant growth form (57.6%), followed by shrubs (24.2%), trees (15.2%), and subshrubs (3.0%) (Figure 2). Seeds were the most frequently used plant part (30.3%), followed by aerial parts (21.2%) and leaves (18.2%).

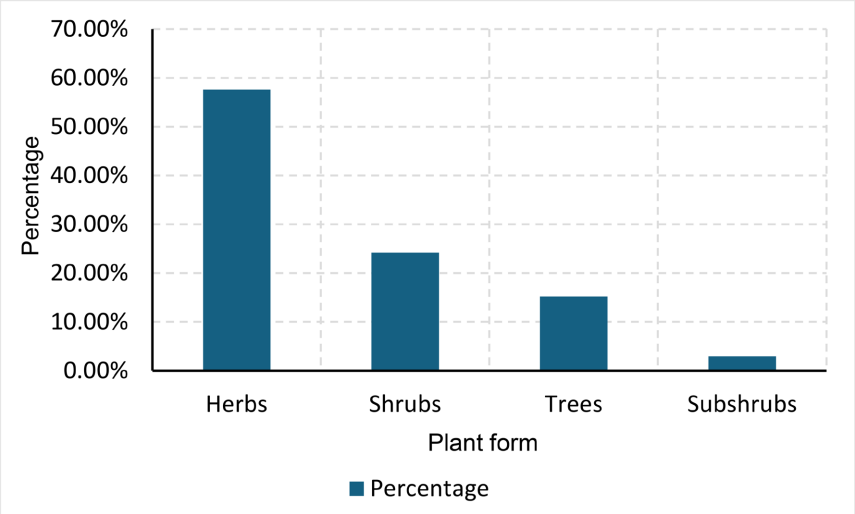


Figure 2. Plant form representation of plants used in Ethnobotany in Al-Qassim region, Saudi Arabia.

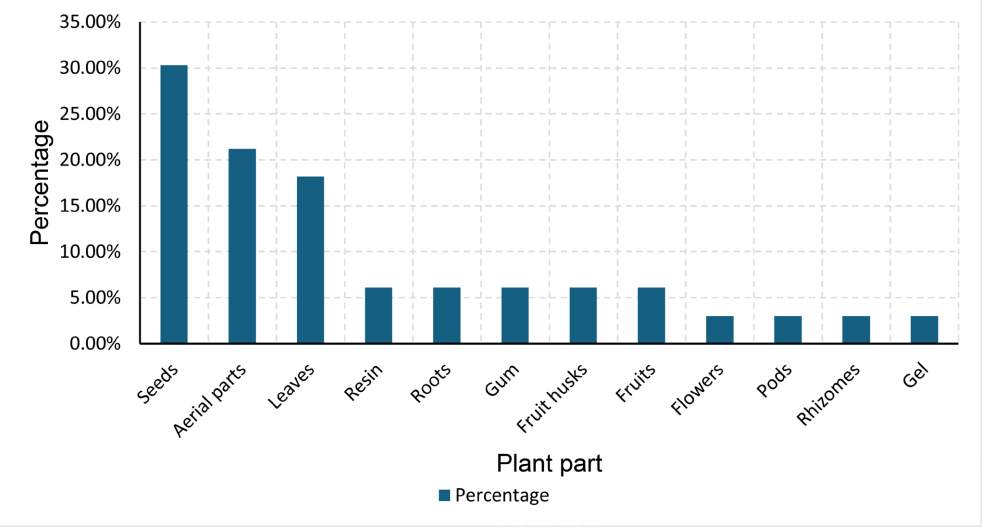


Figure 3. Percentage use of plant parts used in Ethnobotany in Al-Qassim region, Saudi Arabia.

Resin, roots, gum, fruit husks, and fruits each accounted for 6.1%. Flowers, pods, rhizomes, and gel were the least cited parts (3.0% each) (**Figure 3**).

4. Discussion

This study documents 33 medicinal plant species used by traditional healers in Al-Qassim, Saudi Arabia. The findings demonstrate partial to strong concordance with the scientific literature for most plants, while identifying specific areas requiring further investigation. The discussion is organised by therapeutic category.

4.1. Gastrointestinal and Digestive Disorders

Gastrointestinal complaints were the most frequently treated condition. Several Apiaceae species—*Cuminum cyminum*, *Foeniculum vulgare*, *Pimpinella anisum*, and *Trachyspermum ammi*—were used for digestive disorders, gases, and nausea. These uses are well-supported: *C. cyminum* demonstrates antioxidant and digestive effects [12] [13]; *F. vulgare* has antispasmodic and gastroprotective properties [14]; *P. anisum* exerts antispasmodic and sedative effects [15] [16]; and *T. ammi* has established gastroprotective activity [17]. Use of *T. ammi* for headache, however, lacks direct evidence and represents a research gap.

Among Asteraceae, *Achillea fragrantissima*, *Artemisia herba-alba*, and *Artemisia judaica* were all used for gastrointestinal conditions. Their antispasmodic, anti-inflammatory, and antimicrobial properties are documented [18]-[20], and *A. herba-alba* additionally shows glucose metabolism-modulating effects [21]. The reported use of *A. judaica* for *Helicobacter pylori* infection and appetite stimulation has not been directly confirmed in the literature. *Senna alexandrina* was used exclusively as a laxative, consistent with its well-established pharmacological activity [22]. *Aloe vera* was used for constipation and gastrointestinal inflammation, in line with its documented laxative and antimicrobial effects [23] [24].

4.2. Women's Health and Reproductive Conditions

Women's health was a prominent theme, reflecting the predominantly female healer cohort. Multiple species were used for menstrual regulation, labour support, and postpartum recovery. *Anastatica hierochuntica* was used to facilitate childbirth and stimulate ovarian function. Experimental evidence has reported effects on myometrial histology and prostaglandin levels [25], whereas reference [26] is a prenatal-toxicity study and does not support a cervical-ripening claim. Vitex agnus-castus was used to regulate the menstrual cycle and support pregnancy, consistent with its documented effects on menstrual disorders and its anti-inflammatory properties [27]. Origanum majorana was cited for hormonal regulation and reduction of insulin resistance, and clinical evidence supports its efficacy in polycystic ovary syndrome (PCOS) [28].

Trigonella foenum-graecum was used for lactation support, hormonal balance, and postpartum recovery—all well-supported uses [29]. *Prunus mahaleb* was used for postpartum support and menstrual cleansing; while antimicrobial and anti-inflammatory properties have been described [30], direct evidence for these specific uses is limited. *Commiphora myrrha* was used for uterine inflammation and postpartum discomfort; its broad anti-inflammatory, antimicrobial, and analgesic properties support these applications [31].

4.3. Metabolic and Endocrine Conditions

Several plants were used to regulate blood glucose and lipid levels. *Teucrium polium* was cited for blood glucose control, consistent with published evidence [32]. *Nigella sativa* was used for immune support and blood glucose regulation; robust evidence exists for its anti-inflammatory and antimicrobial effects, though glucose-lowering evidence remains insufficient [33]. *Urtica dioica* was used for blood glucose regulation and urinary tract health, in good agreement with its documented antidiabetic and analgesic properties [34]. *Saussurea costus* was used for glucose and lipid regulation, but direct evidence for these specific effects is lacking and warrants further study [35].

4.4. Anti-Inflammatory, Analgesic, and Immune Support

Curcuma longa (turmeric) was used as an anti-inflammatory and immune support agent. Its primary active compound, curcumin, has extensively documented antioxidant, anti-inflammatory, and immunomodulatory properties [36], and the traditional uses reported here are well-supported. *Astragalus sarcocolla* was used for wound healing and immune support; anti-inflammatory, antioxidant, and wound-healing effects are described in the literature [37] [38]. *Alkanna tinctoria* was used for wound healing and burn scar treatment, consistent with documented anti-inflammatory and antimicrobial properties [39] [40]. Its reported use for menstrual pain and respiratory conditions requires further investigation.

Acacia senegal (gum arabic) was used for kidney, urinary tract, and immune support; anti-inflammatory and prebiotic effects are documented [41]. *Hap-*

lophyllum tuberculatum was cited for pain relief and digestive support, and analgesic, anti-inflammatory, and antioxidant properties have been reported [42]. Its use for menstrual regulation requires further study. *Tamarix aphylla* was used for headache relief and wound healing; antibacterial, anti-inflammatory, and wound-healing properties have been demonstrated [43], but its reported use to stimulate labour is not documented and requires safety evaluation.

4.5. Respiratory and Neurological Conditions

Pimpinella anisum was used for respiratory complaints and infantile colic; antispasmodic and respiratory-protective effects are well established [15], though evidence for its use in infantile colic is lacking. *Cymbopogon schoenanthus* was used for headache, sinus congestion, and kidney health; antioxidant, antimicrobial, and anti-inflammatory properties are documented [44], and its analgesic effects may account for reported headache relief. *Lepidium sativum* was used for asthma, anaemia, and bone health; bronchodilatory effects, high iron content, and anti-inflammatory properties are documented [45]. *Carthamus tinctorius* was cited for depression and cardiovascular support; neuroinflammatory inhibitory and cardioprotective effects have been reported [46] [47], though direct evidence for these traditional uses remains limited.

4.6. Safety Considerations

Several healer-reported uses require explicit safety caution. *Teucrium polium* has been associated with clinically significant herb-induced hepatitis, including reports after sustained oral use [48]; therefore, its traditional use for metabolic or gastrointestinal purposes should not be interpreted as evidence of safety. For Aloe vera, the inner leaf gel should be distinguished from the latex-containing outer leaf material: laxative effects are primarily associated with anthraquinone-containing latex, whereas the gel has a different composition and safety profile [23]. Particular caution is also required for remedies used during pregnancy, labour, postpartum periods, breastfeeding, and infancy because evidence on maternal, fetal, and infant safety is limited for many medicinal plants, and some herbal products have demonstrated uterotonic, embryotoxic, or teratogenic potential [26] [49]. Accordingly, the present study documents reported traditional practices and does not endorse clinical use, dosage, or safety in these vulnerable groups.

4.7. Limitations

Several limitations should be noted. The reliance on self-reported information from traditional healers introduces the possibility of recall bias. Although more than 40 potential participants were contacted, only 20 eligible healers agreed to participate and completed the questionnaire; this non-response and the restricted study period limit generalisability to the broader Al-Qassim healer population. The predominantly female healer cohort may have introduced a reporting bias towards women's health conditions. Botanical identification relied on vernacular

names matched to scientific names without collection of voucher specimens, creating uncertainty in species identity for some reports. Some reported uses are supported only by in vitro or animal studies, and extrapolation to human populations should be made cautiously. Notably, four species—*Astragalus sarcocolla*, *Prunus mahaleb*, *Haplophyllum tuberculatum*, and *Tamarix aphylla*—are supported by particularly limited evidence and represent priority targets for future clinical research.

5. Conclusion

This ethnobotanical survey documented 33 medicinal plant species used by traditional healers in the Al-Qassim region of Saudi Arabia. The findings reveal substantial concordance between traditional practices and published pharmacological evidence across multiple therapeutic categories, including gastrointestinal disorders, women's health, metabolic conditions, and anti-inflammatory applications. At the same time, several plants—particularly *A. sarcocolla*, *P. mahaleb*, *H. tuberculatum*, and *T. aphylla*—are supported by limited scientific evidence and warrant prioritised investigation. This study provides baseline data for future phytochemical, pharmacological, and clinical research, and highlights the urgency of preserving orally transmitted traditional knowledge before it is irretrievably lost.

Author Contributions

Conceptualization, N.S.A., S.A., R.A. and G.A.; Methodology, N.S.A., S.A., R.A. and G.A.; Validation, N.S.A.; Formal analysis, N.S.A.; Investigation, S.A., R.A. and G.A.; Data curation, N.S.A., S.A., R.A. and G.A.; Writing—original draft, N.S.A.; Writing—review & editing, N.S.A.; Visualization, N.S.A.; Supervision, N.S.A.; Project administration, N.S.A. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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