

# 1 **Cultural Perspectives on Healing: A Study of Traditional Medicinal** 2 **Practices**

3 Ammara Afzal<sup>1</sup>, Kashif Iqbal<sup>1\*</sup>, Aisha Tanveer<sup>1</sup>, Adnan Saeed<sup>2</sup>, Hafsa Gul<sup>2</sup>, Aqsa Rashid<sup>1</sup>,  
4 Summra Naz<sup>3</sup>, Safa Sarwar Maqbool<sup>4</sup>

5 1= Institute of Physiology and Pharmacology, Faculty of Veterinary Sciences, University of  
6 Agriculture, Faisalabad, Pakistan.

7 2= Department of Allied Health Professionals, Government College University, Faisalabad,  
8 Pakistan.

9 3= Institute of Microbiology, Government College University, Faisalabad, Pakistan.

10 4= Department of Pharmacy, The University of Faisalabad, Pakistan.

11 \*= Corresponding Author: [kashifiqbal711@gmail.com](mailto:kashifiqbal711@gmail.com)

## 12 **Abstract**

13 Throughout history, many anthropologists and ancient Greek scholars including Hippocrates  
14 and Aristotle recognized and studied the medicinal characteristics of plants. The study of  
15 healing practices in various cultures blends traditional healing methods with modern  
16 techniques. Traditional medical procedures have always included using indigenous materials,  
17 such as plants, minerals, and animals. In addition to developed countries like China, South  
18 Asia, America, and Canada, traditional medical methods have long been practiced in all  
19 developing countries such as Ethiopia, Bangladesh, Afghanistan, Iran, etc. Each country has  
20 distinct conventional medical practices incorporating cultural beliefs and historical  
21 background into their therapeutic methods. The use of herbal medicines, acupuncture,  
22 moxibustion, and other holistic methods is popular in traditional healing systems.  
23 Understanding the cultural dimensions of healing is crucial not only for developing nations to  
24 meet healthcare needs and enhance health outcomes but also for developed nations as a part  
25 of their cultural heritage. Considering the subjective experience and objective causes of  
26 disorders, the collaboration of different traditional medical systems among themselves and  
27 with modern medicine is necessary to provide a comprehensive healthcare system for people.

## 28 **Keywords:**

29 Traditional medicinal practices, cultural medicine, health practitioners, remedies, plants

30

31 **1. Introduction**

32 The fundamental approach to any system of medicine is healing. Anthropologists have  
33 researched and published the healing practices categorically from ancient times to the present  
34 era according to cultural traditions in various areas of the world. Ancient Greek people,  
35 including Hippocrates and Aristotle, were knowledgeable about the medicinal properties of  
36 various plants (Zhu et al., 2012). The correlative approach in the study of healing practices  
37 not only broadens our horizons by shedding light on the different perspectives of healing as  
38 per various cultures (Kirmayer, 2004). The immigrants from various countries in the US  
39 move towards the urban areas carrying their cultural legacies and traditional healing practices  
40 with them. As a result, they blend their cultural practices with advanced healing techniques  
41 and form an exceptional healing plan. Many scientists in the late previous century worked on  
42 the various connotations of illness and healing from cultural perspectives. For instance, some  
43 cultures take certain kinds of illness as nature's punishment for the wrongdoings of the  
44 patient; and they assume healing is based on the affected one's redemption towards his  
45 misdemeanors thus taking it as a source of catharsis and providing him mental or spiritual  
46 harmony. Another Psychiatrist from 2001 studied healing practices from the evolutionary  
47 standpoint in his papers on the theme of cultural evolution (Coulehan, 2005). The use of  
48 natural products including raw materials from both animals and crude plants can be done to  
49 form various forms of medicines including Ayurveda, Traditional Korean Medicine,  
50 Traditional Chinese medicine, and Unani medicines, etc. around the globe since old times,  
51 eventually evolving into configured traditional medicinal systems (Zhao et al., 2010).

52 The use of aboriginal plants for traditional medicines is studied constantly by  
53 researchers throughout the world, and advancements are made in the formulas for the  
54 betterment of therapeutic effects in many developing countries such as Ethiopia, Afghanistan,  
55 and Iran as well as developed countries such as Canada, America, China, and South Asian  
56 regions (Zemedede et al., 2024). The study of traditional plants can be recognized as one of the  
57 oldest and most advanced sciences simultaneously; which developed since the ancient times,  
58 when humans used plants for food, fuel, shelter, and all other needs (Shakya et al., 2012). The  
59 interactions among various species of medicinal flora can cause advantageous, harmful, or  
60 neutral consequences. Compounds derived from plants have the potential to greatly enhance  
61 the treatment of challenging diseases such as cancer, and they can also aid in the prevention  
62 of specific illnesses (Yuan et al., 2016). The harmful effects and toxicity associated with  
63 traditional medicines have contributed to a rise in the demand for herbal drugs and a decrease  
64 in the use of chemical medications. The use of medicinal plants to treat illnesses has been

65 around for a very long time, since the beginning of human history. When people got sick and  
66 needed something to help them get better, they turned to the plants around them because that  
67 was their only option at the time. So, using plants as medicine is not a new idea (Halberstein,  
68 2005). For instance, in ancient Persia, plants extracted drugs and used them as aromatic  
69 agents and disinfectants (Hamilton, 2004). In light of the area-specified cultural practices, we  
70 have discussed the traditional medicinal practices in Canada, Africa, Ethiopia, India, Russia,  
71 Australia, and China in this chapter.

## 72 **2. Use of Medicinal Herbs-A Historical Overview**

73 Herbal species and various parts of plants are used for healing, preventive, and  
74 curative purposes, with the earliest evidence reported more than 55,000 years ago in Northern  
75 Iraq at an entombment site. Where, the corpse of the deceased was surrounded by a minimum  
76 of seven plants carrying therapeutic properties, e.g. Ephedra. The evidence of vast knowledge  
77 of the medicinal properties of various plants was found in the holy book of Zoroastrianism  
78 i.e. Avesta by some historians (Jamshidi-Kia et al., 2018). Since ancient times, people have  
79 used nature to cure illnesses, starting with the instinctive use of animals and later extending to  
80 plants. Initially, the utilization of plants for therapeutic purposes was empirical due to a lack  
81 of information about diseases, treatment plants, and their application methods. However, over  
82 time, the reasons behind using specific herbal plants for various ailments were discovered,  
83 leading to a shift from empirical to factual use (Qiu, 2007). The formerly inscribed evidence  
84 of the therapeutic use of plants was found on a clay slab of Nagpur from some 5000 years  
85 ago. Over 12 herbal preparations were made and used by various ancient civilizations in  
86 Mesopotamia (Guidi & Landi 2016). Cuneiform inscriptions from around 2500 BCE on clay  
87 tablets mention the use of 1000 plants for treating different ailments. Even many fragrant  
88 plants are considered sacred in Christianity (e.g. poppy, marjoram, frankincense, saffron,  
89 anise, etc.) referring to their mentions in the holy Bible (Hassan, 2015).

90 In forgone Persian culture, many herbal plants were utilized for both medicinal and  
91 culinary purposes. The translation of Greek physicians' manuscripts into Arabic contributed  
92 to the advancement of knowledge. Poppy extracts were employed as medicine by the  
93 Sumerians and Greeks, with Arabs recognizing the addictive properties of opium. Iranian  
94 medicine saw progress through the contributions of Avicenna and Razi in the 8th and 9th  
95 centuries (Cragg & Newman 2013). In the 8<sup>th</sup> century, some Arabs opened privately owned  
96 pharmacies for the first time thus setting precedence in the history (Solomou et al., 2016).  
97 During the 13th century, Ibn al-Baitar documented 1400 plants in his encyclopedia titled  
98 "Corpus of Simples." In India, plants and spices have been used for medicinal purposes since

99 ancient times, and are mentioned in sacred texts such as the Atharva and Rig Veda. Sanskrit  
100 writings date back to around 1500 BCE. Snakeroot, for instance, has been a widely used plant  
101 for sedation and the treatment of snakebites or mental illnesses for centuries (Guidi & Landi  
102 2016).

103 Herbal medicine in China dates back to 16 century, with over 3000 medicinal herbs  
104 available. These herbs are often combined into formulas to treat diseases, with over 60,000  
105 herbal prescriptions recorded in the early Ming dynasty. Li Shizhen, an influential Chinese  
106 herbalist, compiled "Pen t'sao kang mu," detailing over 1800 plants and their medicinal  
107 properties, including 365 dried medicinal plants like Rhei rhizoma, ginseng, and cinnamon  
108 bark. Afterward, Carl Linnaeus, in the 18<sup>th</sup> century, developed the system of naming and  
109 classification of living organisms. His book Species Plantarum categorized and named  
110 numerous plants, including medicinal herbs, in Latin. This text remains a valuable reference  
111 for plant identification (Cragg & Newman 2013).

112 In the 19th century, a famous botanist Asa Gray authored a pronounced book on the  
113 indigenous botanical species belonging to Northeast America. Another renowned religious  
114 community i.e. Shakers meticulously grew and gathered medicinal plants individually to  
115 prevent perplexity, prepared herbal products (using about 200 species of plants) precisely, and  
116 eventually offered them to health practitioners and pharmacists for selling purposes. For  
117 instance, they made American bee balm and Oswego tea to boost the efficacy of the digestive  
118 system (Sile et al., 2020).

119 In the late 19th century, natural compounds were isolated from medicinal plants by  
120 using advanced techniques such as maceration, decoction, etc. for plants like quinine,  
121 morphine, opium, cocaine, and digitoxin. For instance, foxglove is utilized to extract  
122 important cardiac glycosides such as digoxin, etc., to treat cardiac diseases including  
123 myocardial infarction. The continuous advancements in chemical and mechanical engineering  
124 setups and industries in the late 20th century opened doors that led to the successful  
125 production and use of many synthetic and semi-synthetic drugs (Tu, 2011).

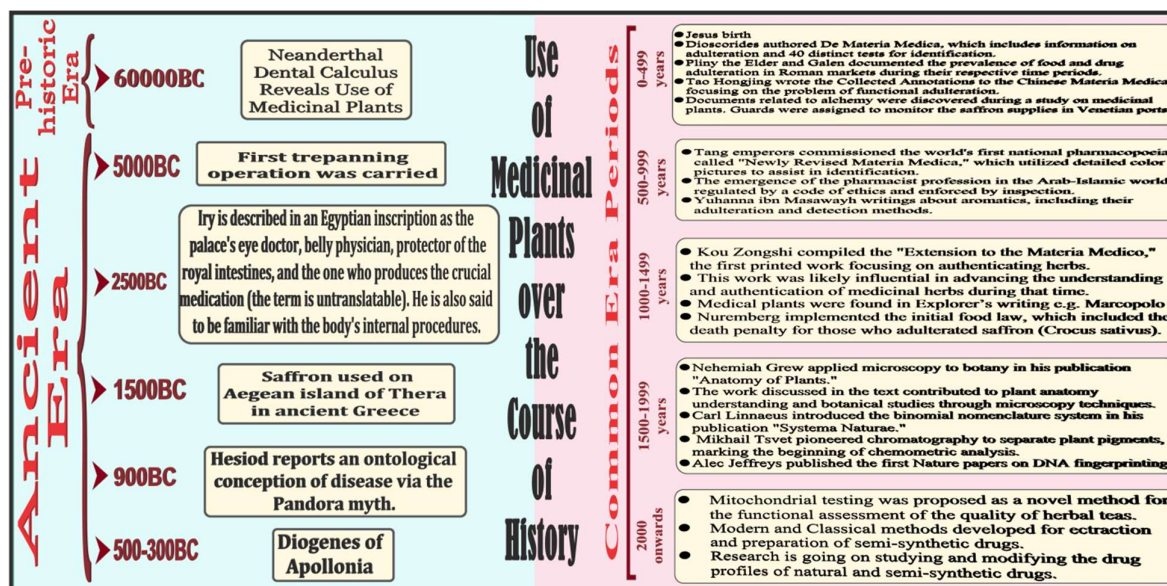


Figure 1: Advancement in use of medicinal plants throughout history

### 3. Traditional Medicines

#### 3.1 Unani Medicine

Unani medicine is a historic medical system that was formed during Arab culture and is derived from Greco-Arabic medicinal traditions that date back over 2,500 years. It considers the body, mind, and soul of a person to be one integrated entity (Jabin, 2011). Based on the idea that the human body is made up of four basic components, each with a unique temperament, Unani medicine was developed. Many diseases can result from an imbalance between these temperaments (Lone et al., 2012). The Indian government acknowledges Unani as a workable healthcare system that can satisfy the demands of the populace. Furthermore, it is recognized as an alternative and most important healthcare technique by the World Health Organisation (WHO) (Govindasamy & Kannan 2012). Researchers have found numerous bioactive substances from mangrove plants that are used in Unani medicine. (Hongal et al., 2014).

149 **Table 1:** Popular Unani Remedies and their therapeutic effects

| Country of Origin                          | Popular Remedies                   | Therapeutic Effects                                    | Therapeutic indication  | References            |
|--|------------------------------------|--|---|-----------------------|
| Greece, Persia, and India (Unani Medicine) | Majoon Suranjan                    | Relieves joint pain, anti-arthritic, anti-inflammatory | Rheumatoid arthritis and Osteoarthritis   | Afsahul & Anjum, 2020 |
|  | Kohl-Chikni Daw                    | anti-cataract activity                                 | Delay progression of Cataracts, treat blindness                                       | Ansari et al., 2017   |
|  | Khamira Abresham Hakim Arshad Wala | Anti-aging, anti-oxidant,                              | Cognitive Impairment  |                       |
|  | Satawar                            | Aphrodisiac activity                                   | Premature ejaculation in men, Decoction of its root powder treats dysentery, Diarrhea |                       |

150 **3.2 Ayurvedic Medicine (India)**

151 Ayurveda focuses on restoring balance by treating the underlying cause of sickness  
 152 using natural components. The Ayurvedic philosophy focuses on maintaining a healthy  
 153 lifestyle is crucial to preventing imbalances and avoiding needless suffering (Patwardhan,  
 154 2014). Herbs are typically used in specified ratios in Ayurvedic therapies to minimize toxicity  
 155 and maximize therapeutic effects. Ayurveda dates back to between 4000 and 1500 BC in pre-  
 156 Vedic India. The Indian government maintains an official authority that oversees the training,  
 157 standards, and use of Ayurveda, and there are over 400,000 registered Ayurvedic  
 158 practitioners (Parasuraman et al., 2014). In various regions of India, where Ayurvedic  
 159 medicine is practiced, more than 30 foods are considered to have potential characteristics of  
 160 cooling or heating as referred to in humoral pathology (Jain & Singh 2010). Utilizing  
 161 bioactive chemicals from mangrove plants, Unani medicine is a prominent system of  
 162 traditional medicine. Numerous such substances have been found by researchers and might  
 163 be used in Ayurvedic medicinal procedures. Herbs and meals that are balanced in terms of  
 164 heat and cold, according to Unani and Ayurvedic medicine, can help reset the body's internal  
 165 equilibrium (Parasuraman et al., 2014). The body is said to be warmed by hot meals like eggs,  
 166 beef, and lentils and cooled by cold foods like yogurt and fruits. The body may achieve  
 167 balance and maintain health by consuming a variety of hot and cold meals. For instance,

168 eating foods that cool you down, such as yogurt and fruits, may help you relax if you're  
 169 feeling overheated and irritated (Leslie, 1969). Conversely, consuming some warming meals,  
 170 such as meat and lentils, may assist energize you if you're feeling chilly and lethargic. Sri  
 171 Lanka and South India are considered to be the provenance of the Ayurvedic Medicinal  
 172 system (Parasuraman et al., 2014).

173 **Table 2:** Popular Ayurvedic Remedies and their therapeutic effects

| Country of Origin                     | Popular Remedies                                       | Therapeutic Effects  | Therapeutic indication  | References              |
|---------------------------------------|--|--|---|-------------------------|
| India, Sri Lanka (Ayurvedic Medicine) | Abhyanga or Ayurvedic Massages followed by a warm bath | Improves blood flow, muscle rigidity, pain, emaciation, and skin conditions                      | Arthritis, fibromyalgia, headache, sinus problems, muscle spasms, and neuropathy.   | Chopra & Doiphode, 2002 |
|                                       | Panchkarma   | Immunity booster, anti-aging, detoxification, improved metabolism and digestion, balanced doshas | Digestive disorders, stress, and chronic health issues.   |                         |
|                                       | Nasyam   | Detoxifies all the body cavities and channels (brain, neck, eyes, throat, nose, and ear          | Congestion, sinusitis, bronchitis, depression, anxiety, migraine  |                         |
|                                       | Tharpanam  | Strengthens optic nerves, prevents dark circles, treats eye inflammation, reduces eye stress     | Cataracts, Dry Eye Syndrome, Eyes pain, myasthenia gravis, computer eye strain, eyelid drooping, macular degeneration, conjunctivitis |                         |

174 Recently, the Sri Lankan government has recognized the importance of Ayurvedic  
 175 medicine in correspondence with Western Medicine (Jones & Liyanage, 2018). The system is  
 176 based on the concept of the whole world that comprises four basic elements which are Earth,  
 177 water, air, Fire, and another unique element called ether. The founders of the Ayurvedic  
 178 system believed that the balanced geometry of the cosmos is imitated by the human body's  
 179 balance considering the 4 basic elements. Bile, phlegm, and flatulence are three basic signs of  
 180 "Doshas" which are balanced for steady regulation of the body's metabolism. For instance, if

181 the patient suffers from the symptoms of respiratory ailments such as cough, sneezing,  
182 congestion, or sore throat; practitioners evaluate it as an excess of phlegm in the body and  
183 provide remedies, and consultation on lifestyle modifications is given to patients to normalize  
184 its concentration in the body. Ayurvedic practitioners suggest aiming to preserve the  
185 equilibrium between the body's Doshas (vital elements) to ensure the well-being of the  
186 human body. Similarly, bile is associated with patients of middle age, and related problems  
187 appear mostly in the rainy season. Phlegm can be associated with the youth and growth  
188 season, while flatulence-like issues are mostly treated in patients of old age relatively (Jones  
189 & Liyanage, 2018). In this way, we can say that all three components (bile, flatulence, and  
190 phlegm) correlate with various life phases and ages. Seasons and different life stages are  
191 correlated with the three Doshas of Ayurvedic medicine: phlegm, bile, and wind/flatulence.  
192 Phlegm and youth are connected to the growing season and bile, respectively, whereas wind  
193 and flatulence are linked to the aging process and dry, cold weather (Ibeneme et al., 2017).

### 194 **3.3 Traditional Medicinal Practices in Bangladesh**

195 Bangladesh provides accommodation to more than 30 native communities,  
196 comprising almost 2% of its entire population, inhabiting mostly in distant, hilly areas. These  
197 indigenous communities belong to diversified cultural backgrounds and utilize traditional  
198 medicinal practices for common ailments (Kabir et al., 2014). Over 80% of Bangladeshis use  
199 herbal medicines, with ethnomedicinal plants being a significant part of this practice.  
200 Documenting this knowledge is crucial due to the long-standing expertise of ethnomedicinal  
201 healers in herbs and their medicinal properties (Khan et al., 2015). The most commonly used  
202 plants for traditional medicines include *Zingiber officinale* (Ginger), *Congea tomentosa*  
203 (Woolly congea), *Engelhardtia spicata* (Great Malay Beam), *Duabanga grandiflora*  
204 (Bermah), and *Matricaria chamomilla* (Chamomile) being the frequently used medicinal  
205 plants (Haque et al., 2009). These plants were utilized for various purposes such as treating  
206 colic, allergy, boils, flatulence, and skin diseases; acting as anti-cancer agents, and  
207 performing carminative and sedative activity. On the other hand, *Senna alata* (Candle Bush)  
208 can treat common skin allergies such as eczema while *Senna hirsute* (Woolly senna) was  
209 particularly used for its anti-dandruff effect (Sadat-Hosseini et al., 2017).

210 The specific uses of each plant species for different ailments underscored the rich  
211 history and cultural significance of these plants in indigenous healing practices. For instance,  
212 the people of Bangladesh commonly use plant materials like *Azadirachta indica* (Neem),  
213 *Ricinus communis* (Castor Oil Bean), *Scoparia dulcis* (licorice weed), *Leucas aspera*



214 (Thumbai) and *Clitoria ternatea* (Butterfly Pea) for various disorders (Singh et al., 2014).  
 215 These plants also treat eczema, allergy, chicken pox, measles, high blood pressure, gastritis,  
 216 flatulence, jaundice, pain, wounds, smallpox, cough, skin diseases, diarrhea, dysentery, and  
 217 fever. Some plants like *Z. officinale* are used for sore throat and vomiting relief (Jelliffe,  
 218 1957). A survey revealed that many medicinal plants are combined with other ingredients,  
 219 with 59 mixtures recorded (Islam et al., 2014). Common additions include table common  
 220 culinary items such as cow's milk, sugar, honey, salt, black seed i.e. *Nigella sativa*, rice-  
 221 washed water, and various other constituents like crabs, birds (pigeons, etc.), lime juice, oils  
 222 (fish oil, for instance) and chicken fat (Schmaltz, etc.) (Faruque & Uddin, 2014). The natural  
 223 mixtures form in specific combinations of some plants (garlic, neem, bilimbi, common beans,  
 224 etc.). They can treat common disorders related to the gut, alongside boosting the therapeutic  
 225 activities of other medicinal plants (Faruque et al., 2018).

226 **Table 3:** Popular Traditional Medicinal Practices in Bangladesh

| Country of Origin | Popular Remedies | Therapeutic Effects   | Therapeutic indication  | References             |
|-------------------|------------------|---|---|------------------------|
| Bangladesh        | Kabiraji healing | It uses local herbs and plants to treat various ailments            | Remedies made in different combinations to treat different metabolic disorders  | Siddique et al., 2021. |
|                   | Kalami healing   | Improves profounding state of mind, betterment of daily-life issues | Treats problems having no apparent symptoms (e.g abolishing black magic, the embodiment of evil entities, complexity in going abroad, infertility, etc) |                        |

### 227 3.4 Traditional Medicinal Practices in Ethiopia

228 In Ethiopia, more than 75% of the population relies on cultural perspectives of healing  
 229 which involve traditional medicinal practices using plants with therapeutic potential. This  
 230 preference is attributed to the common people's trust in the herbalists and their local  
 231 remedies, the affordability of medicinal products, and challenges in accessing provisions of  
 232 advanced healthcare techniques (Yirga et al., 2011). Since the major proportion of Ethiopia's  
 233 population resides in villages or undeveloped areas with limited healthcare coverage. Public  
 234 sector resources in these areas are strained due to the high demand for healthcare services  
 235 (Kefalew et al., 2022). Traditional practitioners in Ethiopia encompass a variety of roles,  
 236 including bonesetters, tooth extractors, midwives, herbalists, witch doctors ('tenquay'), and

237 mystical healers like 'weqaby' and 'kalicha'. Spiritualists particularly suggest practices, such  
238 as praying and attending church, as integral parts of the healing practices for Ethiopians  
239 (Kassaye et al., 2006). Likewise, holy water, alias 'rebel' for Orthodox Christians and 'zam-  
240 zam' for Muslims, is commonly used to treat a range of illnesses, with Ethiopians believing in  
241 its healing properties when consumed or used for bathing. Ethiopia has a rich history of  
242 traditional medicine, with diverse methods to combat diseases. Healing in Ethiopian  
243 traditional medicine focuses on overall well-being, not just curing diseases. Traditional health  
244 practitioners are believed to have skills given by the Deity, and knowledge is transferred  
245 orally or acquired through spiritual means in the supervision of discrete families or particular  
246 social groups (Teklay, 2015).

247 Healers in Ethiopia primarily use natural substances for drugs, with plants, animals,  
248 and minerals being the most common sources (Tewelde et al., 2017). Drug preparations are  
249 done in several dosage forms like liquids (syrups, decoctions, etc.), ointments, gels, powders,  
250 capsules, and pills. Different routes of administration are adopted for the appropriate dose of  
251 drugs to the body of the patient, for instance, topical, vaginal, oral, nasal, ophthalmic,  
252 respiratory, etc. However, certain preparations made by the practitioners claimed as antidotes  
253 are for dealing with adverse effects, and restrictions are imposed on certain drugs  
254 (Tesfahuneygn & Gebreegziabher, 2019). Drug storage is done in containers, cloths, bottles,  
255 leaves, papers, and horns, kept at some suitable place in homes. In Ethiopian culture, health is  
256 viewed holistically, encompassing physical, mental, and spiritual well-being (Tuasha et al.,  
257 2018). Ethiopians believe that their religion plays a significant role in maintaining their  
258 health. Supernatural forces are believed to cause and cure diseases, with the devil blamed for  
259 illnesses and God providing healing. Traditional spiritual healers, known by various names  
260 like debtera and kalicha, use prayer and rituals to treat conditions, especially mental illnesses  
261 and obscure ailments (Kindie, 2023). Deberas, associated with the Orthodox Christian  
262 clergy, treat mental disorders as possession by evil spirits, using prayer, holy water, and  
263 amulets. Many Caliphs from the Muslim Empires perform customary rites to find the cause  
264 of ailments and provide consultation to the patients on the use of protective amulets,  
265 talismans, kitabs, and burning incense (Chekole, 2017). Furthermore, the Caliphs,  
266 Spiritualists, and Alchemists from different backgrounds utilize various methods including  
267 prayers, rituals, sacred water (Zam Zam, etc), and protective items like amulets to treat  
268 various diseases. Moreover, mental disorders are accredited to feeble and unhealthy  
269 relationships between humans and Gods, leading to particular protocols and treatment  
270 ceremonies by the practitioners. Additionally, some Spiritualists and Caliphs declare that they

271 are capable of doing miracles, refining the spiritual relationships of patients with the Deity,  
 272 and preventing individuals from evil spirits or negative impacts via their practices (Kindie,  
 273 2023).

274 **Table 4:** Popular Traditional Medicinal Practices in Ethiopia

| Country of Origin | Popular Remedies                                    | Therapeutic Effects   | Therapeutic indication   | References   |
|-------------------|---|---|--|--------------|
| Ethiopia          | Honey (Ma'ar)                                       | Anti-inflammatory, anti-oxidant, anti-bacterial                       | Relieves irritation caused by allergic rhinitis, asthma, and cough; Helps with gastric ulcers from <i>H.pylori</i> & can treat wounds, burns, sunburn, cataracts, diabetic foot ulcers, & corneal opacities. | Kindie, 2023 |
|                   | Frankincense (Boswellia and Commiphora combination) | Antiseptic, anxiolytic, anti-inflammatory, expectorant, anti-neurotic | Respiratory illness, arthritis, cancer, leprosy, and syphilis. It can also help with issues such as ulcers, gingivitis, hemorrhoids, furunculosis, and bad breath.   |              |
|                   | Pumpkin seeds (Duba)                                | Anti-oxidant, anti-hypertensive, anti-inflammatory                    | Bladder irritation, nephron inflammation, prostate complaints  |              |

275 **3.5 Traditional Medicinal Practices in China**

276 Traditional Chinese Medicine (TCM) has not only consolidated into the Chinese  
 277 public health system but also gained recognition in Western countries as a complementary or  
 278 alternative medicine (CAM). According to a rough estimate, almost 1.5 billion people are  
 279 treated with TCM across the world (Qi et al., 2013). Chinese herbal medicines are used to  
 280 treat a wide range of illnesses, including gastrointestinal, dermatological, neurological,  
 281 cardiovascular, musculoskeletal, and psychiatric disorders (Chae et al., 2003). It can be  
 282 declared as the central control of Chinese cosmology, encompassing the binary forces of yin  
 283 (negative) energy and yang (positive) energy, the integral elements used in the creation of the  
 284 Universe. These forces interact continually and underlie and uphold nature's balance,

285 including the maintenance and regulation of the organ systems of humans (Nestler, 2002).  
286 Yang energy stands in for all the positive principles such as heart, warmth, sun, fire, light,  
287 masculinity, righteousness, liveliness, beauty, pleasure, exterior, wealth, uprightness, and  
288 organization. On the contrary, Yin energy stands in for all negative principles encompassing  
289 the moon, feminism, darkness, water, coldness, crooked, left side, low, death, interior,  
290 hideous, poverty, and uncertainty (Mao et al., 2021).

291 According to the Chinese cultural perspective, every human being who has equal or  
292 balanced yin and yang forces can be declared healthy (Stephen-Victor et al., 2017). It impacts  
293 human health, for instance, enormous yang energy can cause fever (since it represents heat)  
294 and deficiency of yang energy or excess of yin energy can cause chills. In this way, diseases  
295 can be classified based on excess or deficiency of yin or yang forces (Dobos et al., 2005).  
296 Different cultural settings have an impact on non-Western and Western medical systems,  
297 leading to differing viewpoints on health, sickness, and treatment. While biomedicine  
298 predominates in the West, traditional healthcare methods are popular in Eastern countries.  
299 Individuals who receive care often use more than one system, based on availability,  
300 expectations, and beliefs (Qi et al., 2013). In contrast to biomedicine, which focuses on  
301 objective illnesses, ethnomedicine emphasizes the individual's experience with illness. Social  
302 networks, cultural ideas, intuition, and prior experiences all influence healthcare decisions,  
303 making collaboration amongst medical systems essential. Up until the 16th century, when  
304 Western medicine was introduced, traditional Chinese medicine (TCM) served as the main  
305 form of healthcare in China. But it wasn't until the 19th century that Western medicine saw  
306 any real advancement (Soni et al., 2012). TCM continues to develop and is still an essential  
307 part of the Chinese healthcare system. With an emphasis on herb preparation, timing, and  
308 dose, Traditional Chinese Medicine (TCM) has its roots in 5,000 years of clinical experience.  
309 Growth in technology and our improving understanding of the active ingredients in TCM are  
310 contributing to the confluence of TCM and contemporary medicine (Dobos et al., 2005). One  
311 of the numerous advantages of Traditional Chinese Medicine (TCM) is its ability to discover  
312 and evaluate novel therapeutic candidates. It aids in the study of many characteristics of these  
313 medications by researchers as well. TCM has the potential to assist develop new medications  
314 and lower their production costs if applied properly. Recognized as an alternative or  
315 supplementary therapy in Western countries, traditional Chinese medicine (TCM) has grown  
316 to be an essential part of China's public health system (Dobos et al., 2005).

317  
318

319 **Table 5:** Popular Traditional Medicinal Practices in China

| Country of Origin | Popular Remedies       | Therapeutic Effects  | Therapeutic indication  | References         |
|-------------------|------------------------|--|---|--------------------|
| China             | Jade windscreen powder | Immunity booster, anti-viral, anti-bacterial                         | Chronic nephritis, hepatic diseases, spleen disorders                                   | Matos et al., 2021 |
|                   | Gui Zhi Tang           | Analgesic, decongestant,   | Chills, fever, neck stiffness, skin allergies, constipation, wind-cold-damp bi syndrome |                    |
|                   | Yin Qiao San           | Immunity booster, anti-inflammatory, expel extra mucus from the body | Febrile diseases, sore throat, headaches, exterior heat syndrome, tonsillitis           |                    |

320 **3.6 Traditional Medicinal Practices in Africa**

321 Many African tribes have the belief that there are various causes of sickness,  
 322 including purposeful poisoning, ghosts, supernatural forces, and disruptions in social  
 323 connections. In certain African regions, grieving relatives may aid in the healing process  
 324 (Setka, 2016). A healthy finger may be amputated in an attempt to extend the life of a kid  
 325 whose parents believe they are reincarnated humans with peculiar behavioral features who  
 326 may not live long (Osanyinbi & Falana 2016). Traditional healers, sometimes called "native  
 327 doctors," are experts in the diagnosis, treatment, and prognosis of ailments via traditional  
 328 practices such as divination, incantations, and herbal remedies (Olagunju, 2012). Even in  
 329 regions where contemporary biomedicine is accessible, traditional or alternative healthcare is  
 330 the norm across Asia, Africa, and Latin America when it comes to treating health concerns in  
 331 rural populations (Chung et al., 2016). For millennia, these traditional healers have been a  
 332 source of healthcare for non-Western communities; to ignore their contribution would be to  
 333 ignore the cultural context in which they function. In undeveloped nations, even in cases  
 334 when biomedicine is available, most people, regardless of socioeconomic class or literacy  
 335 level, still receive their healthcare from traditional or culturally based practices (Osanyinbi &  
 336 Falana 2016)

337

338 **Table 6:** Popular Traditional Medicinal Practices in Africa

| Country of Origin | Popular Remedies                           | Therapeutic Effects                             | Therapeutic indication  | References            |
|-------------------|--|---|---|-----------------------|
| Africa            | Rooibos (Aspalathus linearis)              | Antioxidant properties, cardiovascular benefits | Digestive disorders, skin disorders, various common allergies | Ozioma & Chinwe, 2019 |
|                   | African Ginger (Siphonochilus aethiopicus) | Anti-pyretic, anti-viral, anti-rheumatic        | Fever, flu, rheumatism  |                       |
|                   | African Wormwood (Artemisia afra)          | Anti-malarial, antipyretic                      | Fever, cold, malaria  |                       |
|                   | Shea Butter (Vitellaria paradox)           | Anti-inflammatory,                              | Skin moisturizer, sun-block, skin swelling                    |                       |

339 **3.7 Traditional Medicinal Practices in Korea**

340 Complementary to traditional Chinese medicine (TCM), traditional Korean medicine  
 341 (TKM) has a lengthy history (Baek, 2005). TKM has played a vital role in the national  
 342 healthcare system of Korea since its establishment on February 1, 1987. Korea employs over  
 343 a thousand herbal compounds for therapeutic reasons. These applications include the usage of  
 344 the substances as food (11.27%), medicinal herbs (70.52%), materials for cosmetics and  
 345 market sales (8.52%), and the creation of herbal medicines (9.69%) (Cho et al., 2017). There  
 346 are between 400 and 500 different kinds of plants utilized in herbal prescriptions and  
 347 manufacturing; 514 of them are medicinal herbs that are included in the Korean Herbal  
 348 Pharmacopoeia and Korean Pharmacopoeia. For therapeutic purposes, 68 plant extracts that  
 349 comply with GMP guidelines are approved by the Korean Ministry of Health and Welfare. In  
 350 the government medical insurance system, 56 herbal mixes that comply with GMP  
 351 Guidelines have been certified for use as medications (Hong, 2001). By the Korean national  
 352 health insurance system's ethical drug classification and diagnostic requirement, TKM—  
 353 which is backed by Sasang constitutional medicine—recommends 23 distinct products for  
 354 prescription. According to national health insurance data, Traditional Korean Medicine  
 355 (TKM) is insured for 5.6% of the population in Korea, with an estimated 20% of people using  
 356 it altogether. The safety and purity of herbal substances are regulated by the Korean Food and  
 357 Drug Administration (KFDA), although there is a dearth of information on their safety. There  
 358 is little research on these drugs' toxicity in the treatment of liver, renal, urinary tract, skin, and

359 cardiovascular illnesses (Ahn, 2005). This emphasizes how critical it is to evaluate the quality,  
 360 safety, and affordability of the herbal materials utilized in Korea (Han et al., 2006).

361 **Table 7:** Popular Traditional Medicinal Practices in Korea

| Country of Origin | Popular Remedies | Therapeutic Effects   | Therapeutic indication   | References                        |
|-------------------|------------------|---|--|-----------------------------------|
| Korea             | Acupuncture      | Balancing energies and substances in the body and boosts metabolism   | Restore balance, relieve pain, and treat various health conditions                       | Dong-won, 2019; Das et al., 2021; |
|                   | Cupping          | Smooth fluid flow, anti-allergic, relieves pain, and promotes healing, though its specific therapeutic benefits | Improve blood circulation, reduce inflammation, and analgesic effect                     |                                   |
|                   | Herbal remedies  | Various anti-microbial, anti-fungal, anti-inflammatory, and other pharmacological effects                       | To treat metabolic disorders, skin conditions, CNS diseases, and cardiovascular problems |                                   |

362 **3.8 Traditional Medicine in Russia**

363 Traditional medicinal practices have played an important role in the Russian  
 364 Healthcare system, and great advancements have been made by blending them with Western  
 365 and Asian medicines, dating back to the 10<sup>th</sup> century (Shikov et al., 2014). The State  
 366 Pharmacopoeia of the USSR has included individual monographs of more than 30 plant  
 367 species in it. And few decades ago, herbal therapy gained independent status in the Russian  
 368 Healthcare system, thus recognizing herbal remedies as authorized medicinal products  
 369 (Shikov et al., 2021). According to recent surveys, 15% of the Russian population depends on  
 370 the administration of herbal remedies for therapeutic purposes regularly, while more than  
 371 40% of people use the products from time to time. Currently, the Russian state has focused on  
 372 providing resources to conduct extensive research on plant-acquired adaptogenic substances.  
 373 Soviet and Russian researchers have focused extensively on the development of plant-derived  
 374 adaptogenic (that regulate stress, anxiety, and metabolism of the body) substances.

375 Furthermore, vast research is being conducted in Russia to explore the therapeutic potential  
 376 of rare herbal plants (Shikov et al., 2017).

377 **Table 8:** Popular Traditional Medicinal Practices in Russia

| Country of Origin | Popular Remedies  | Therapeutic Effects       | Therapeutic indication             | References                             |
|-------------------|---|---------------------------|------------------------------------|--|
| Russia            | Bark of <i>Frangula alnus</i> Mill. And Roots of <i>Taraxacum campylodes</i> G.E.Haglund in ratio 10:03 | Reduces fats              | Obesity, adipogenesis              | Shikov et al., 2021; Sile et al., 2020 |
|                   | Roots of <i>Inula helenium</i> L. and <i>Arctium lappa</i> L. (1:1) ratio                               | Anti-diabetic effect      | Diabetes                           |  |
|                   | mustard plasters  | Anti-inflammatory         | Bronchitis, Bronchiectasis, asthma |  |
|                   | sage and calendula  | Expectorant, decongestant | Sore throat                        |  |

378 **4. Conclusion**

379 Different cultural contexts have shaped the medical systems of non-Western and Western  
 380 societies, which have different conceptions of health, illness, and treatment. While traditional  
 381 healthcare systems are common in underdeveloped nations, biomedicine is the dominant field  
 382 in the West. Both fields are highly skilled in certain areas of healthcare. Patients frequently  
 383 employ many systems depending on what is available, what they believe, and what they  
 384 expect, which makes switching between systems difficult.  
 385 While ethnomedicine concentrates on the individual's subjective experience of sickness,  
 386 biomedicine is useful for objective disorders. Given that judgments are impacted by social  
 387 networks, cultural ideas, intuition, and prior experiences, cooperation between various  
 388 medical systems is essential for improving patient outcomes.

389 **References:**

390 Afsahul KM & F Anjum, 2020. Suranjan (*Colchicum autumnale* L. and *merendra persica*):  
 391 Great resolvent herbs of Unani system of medicine-a review. *International Journal of*  
 392 *Unani and Integrative Medicine* 4:7-11.  
 393 <https://doi.org/10.33545/2616454X.2020.v4.i1a.115>



- 394 Ahn BM, 2005. Medicinal herbs and toxic hepatitis. Journal of the Korean Medical  
395 Association 48:318-24.  
396 <https://doi.org/10.5124/jkma.2005.48.4.318>
- 397 Ansari S, QA Khan, R Anjum et al., 2017. Fundamentals of Unani system of medicine-a  
398 review. European Journal of Biomedical and Pharmaceutical Science 4:219-23.
- 399 Baek SH, 2005. Medicinal herbs can cause cardiovascular side effects. Journal of the Korean  
400 Medical Association 48:333-38.  
401 <https://doi.org/10.5124/jkma.2005.48.4.333>
- 402 Chae H, IK Lyoo, SJ Lee et al., 2003. An alternative way to individualized medicine:  
403 psychological and physical traits of Sasang typology. The Journal of Alternative &  
404 Complementary Medicine 9:519-28.  
405 <https://doi.org/10.1089/107555303322284811>
- 406 Chekole G, 2017. Ethnobotanical study of medicinal plants used against human ailments in  
407 Gubalafto District, Northern Ethiopia. Journal of ethnobiology and ethnomedicine  
408 13:1-29.  
409 <https://doi.org/10.1186/s13002-017-0182-7>
- 410 Cho JH, DS Oh, SH Hong et al., 2017. A nationwide study of the incidence rate of herb-  
411 induced liver injury in Korea. Archives of toxicology 91:4009-15.  
412 <https://doi.org/10.1007/s00204-017-2007-9>
- 413 Chopra A, & VV Doiphode, 2002. Ayurvedic medicine: core concept, therapeutic principles,  
414 and current relevance. Medical Clinics 86:75-89.  
415 [https://doi.org/10.1016/S0025-7125\(03\)00073-7](https://doi.org/10.1016/S0025-7125(03)00073-7)
- 416 Chung VC, SY Wong, HH Wang et al., 2016. Use of traditional and complementary medicine  
417 as self-care strategies in community health centers: cross-sectional study in urban  
418 pearl river delta region of china. Medicine 95:e3761.  
419 <https://doi.org/10.1097/MD.0000000000003761>
- 420 Coulehan J, 2005. Empathy and narrativity: A commentary on" Origins of healing: An  
421 evolutionary perspective of the healing process". Families, Systems, & Health 23:261-  
422 65.  
423 <https://doi.org/10.1037/1091-7527.23.3.261>
- 424 Cragg GM & DJ Newman, 2013. Natural products: a continuing source of novel drug leads.  
425 Biochimica et Biophysica Acta (BBA)-General Subjects 1830:3670-95.  
426 <https://doi.org/10.1016/j.bbagen.2013.02.008>

- 427 Das G, JB Heredia, M de Lourdes Pereira et al., 2021. Korean traditional foods as antiviral  
428 and respiratory disease prevention and treatments: A detailed review. Trends in Food  
429 Science & Technology 116:415-33.  
430 <https://doi.org/10.1016/j.tifs.2021.07.037>
- 431 Dobos GJ, L Tan, MH Cohen et al., 2005. Are national quality standards for traditional  
432 Chinese herbal medicine sufficient? Current governmental regulations for traditional  
433 Chinese herbal medicine in certain Western countries and China as the Eastern origin  
434 country. Complementary therapies in medicine 13:183-90.  
435 <https://doi.org/10.1016/j.ctim.2005.06.004>
- 436 Dong-won S, 2019. The Emergence of New Grids for Viewing the History of Medicine in  
437 Korea beyond "Koreanness". East Asian Science, Technology, and Medicine 50:149-  
438 62.  
439 <https://doi.org/10.1163/26669323-05001007>
- 440 Faruque MO & SB Uddin, 2014. Ethnomedicinal study of the Marma community of  
441 Bandarban district of Bangladesh. Academia Journal of Medicinal Plants 2:014-25.
- 442 Faruque MO, SB Uddin, JW Barlow et al., 2018. Quantitative ethnobotany of medicinal  
443 plants used by indigenous communities in the Bandarban District of Bangladesh.  
444 Frontiers in pharmacology 9:40.  
445 <https://doi.org/10.3389/fphar.2018.00040>
- 446 Govindasamy C & R Kannan, 2012. Pharmacognosy of mangrove plants in the system of  
447 unani medicine. Asian Pacific Journal of Tropical Disease 2:S38-S41.  
448 [https://doi.org/10.1016/S2222-1808\(12\)60120-0](https://doi.org/10.1016/S2222-1808(12)60120-0)
- 449 Guidi L & M Landi, 2014. Aromatic Plants: use and nutraceutical properties. Novel Plant  
450 Bioresources: Applications in Food, Medicine and Cosmetics 23:303-45.  
451 <https://doi.org/10.1002/9781118460566.ch23>
- 452 Halberstein RA, 2005. Medicinal plants: historical and cross-cultural usage patterns. Annals  
453 of epidemiology 15:686-699.  
454 <https://doi.org/10.1016/j.annepidem.2005.02.004>
- 455 Hamilton AC, 2004. Medicinal plants, conservation and livelihoods. Biodiversity &  
456 Conservation 13:1477-1517.  
457 <https://doi.org/10.1023/B:BIOC.0000021333.23413.42>
- 458 Han K, DY Kwon, SG Lee et al., 2006. The present state of korean herbal preparation  
459 production and possible improvement plan. Herbal Formula Science 14:30-41.

- 460 Haque U, SM Ahmed, S Hossain et al., 2009. Malaria prevalence in endemic districts of  
461 Bangladesh. Public Library of Science (PloS) one 4:e6737.  
462 <https://doi.org/10.1371/journal.pone.0006737>
- 463 Hassan HMA, 2015. A short history of the use of plants as medicines from ancient times.  
464 Chimia 69:622-22.  
465 <https://doi.org/10.2533/chimia.2015.622>
- 466 Hong CD, 2001. Complementary and alternative medicine in Korea: current status and future  
467 prospects. The Journal of Alternative & Complementary Medicine 7:33-40.  
468 <https://doi.org/10.1089/107555301753393788>
- 469 Hongal S, NA Torwane, G Pankaj et al., 2014. Role of Unani system of medicine in  
470 management of orofacial diseases: a review. Journal of clinical and diagnostic  
471 research 8:ZE12-15.
- 472 Ibeneme S, G Eni, A Ezuma et al., 2017. Roads to health in developing countries:  
473 understanding the intersection of culture and healing. Current therapeutic research  
474 86:13-18.  
475 <https://doi.org/10.1016/j.curtheres.2017.03.001>
- 476 Islam MK, S Saha, I Mahmud et al., 2014. An ethnobotanical study of medicinal plants used  
477 by tribal and native people of Madhupur forest area, Bangladesh. Journal of  
478 Ethnopharmacology 151: 921-30.  
479 <https://doi.org/10.1016/j.jep.2013.11.056>
- 480 Jabin F, 2011. Guiding tool in Unani Tibb for maintenance and preservation of health: a  
481 review study. African Journal of Traditional, Complementary and Alternative  
482 Medicines 8:140-43.  
483 <https://doi.org/10.4314/ajtcam.v8i5SS.7>
- 484 Jain SP & J Singh, 2010. Traditional medicinal practices among the tribal people of Raigarh  
485 (Chhatisgarh), India. Indian Journal of Natural Products and Resources 1:109-15.
- 486 Jamshidi-Kia F, Z Lorigooini, & H Amini-Khoei, 2018. Medicinal plants: Past history and  
487 future perspective. Journal of Herbmed Pharmacology 7:1-7.  
488 <https://doi.org/10.15171/jhp.2018.01>
- 489 Jelliffe DB, 1957. Social culture and nutrition: cultural blocks and protein malnutrition in  
490 early childhood in rural West Bengal. Pediatrics 20:128-138.  
491 <https://doi.org/10.1542/peds.20.1.128>

- 492 Jones M & C Liyanage, 2018. Traditional medicine and primary health care in Sri Lanka:  
493 Policy, perceptions, and practice. *Asian Review of World Histories* 6:157-84.  
494 <https://doi.org/10.1163/22879811-12340029>
- 495 Kabir MH, N Hasan, MM Rahman et al., 2014. A survey of medicinal plants used by the Deb  
496 barma clan of the Tripura tribe of Moulvibazar district, Bangladesh. *Journal of*  
497 *Ethnobiology and Ethnomedicine* 10:1-28.  
498 <https://doi.org/10.1186/1746-4269-10-19>
- 499 Kassaye KD, A Amberbir, B Getachew et al., 2006. A historical overview of traditional  
500 medicine practices and policy in Ethiopia. *Ethiopian Journal of Health Development*  
501 20:127-34.  
502 <https://doi.org/10.4314/ejhd.v20i2.10023>
- 503 Kefalew A, S Sintayehu & A Geremew, 2022. Ethnoecological knowledge allied to the  
504 management of wild medicinal plants in Adaa District, East Shewa Zone of Oromia  
505 Regional State, Ethiopia. *International Journal of Biodiversity and Conservation*  
506 14:35-52.  
507 <https://doi.org/10.5897/IJBC2019.1311>
- 508 Khan MA, MK Islam, MA Siraj et al., 2015. Ethnomedicinal survey of various communities  
509 residing in Garo Hills of Durgapur, Bangladesh. *Journal of ethnobiology and*  
510 *ethnomedicine* 11:1-46.  
511 <https://doi.org/10.1186/s13002-015-0033-3>
- 512 Kindie B, 2023. Analysis of Medicinal Plants and Traditional Knowledge Development in  
513 Ethiopia. *International Journal of Advanced Pharmaceutical Sciences and Research*  
514 4:26-31.  
515 <https://doi.org/10.54105/ijapsr.A4033.124123>
- 516 Kirmayer LJ, 2004. The cultural diversity of healing: meaning, metaphor and mechanism.  
517 *British medical bulletin* 69:33-48.  
518 <https://doi.org/10.1093/bmb/ldh006>
- 519 Leslie C, 1969. Modern India's ancient medicine. *Trans-action* 6:46-55.  
520 <https://doi.org/10.1007/BF03180892>
- 521 Lone AH, T Ahmad, M Anwar et al., 2012. Perception of health promotion in Unani herbal  
522 medicine. *Journal of Herbal Medicine* 2:1-5.  
523 <https://doi.org/10.1016/j.hermed.2012.02.003>

- 524 Lucana S & J Elfers, 2020. Sacred medicine: Indigenous healing and mental health. The  
525 Qualitative Report 25:4482-95.  
526 <https://doi.org/10.46743/2160-3715/2020.4626>
- 527 Mao XY, XX Yin, QW Guan et al., 2021. Dietary nutrition for neurological disease therapy:  
528 Current status and future directions. *Pharmacology & Therapeutics* 226:107861.  
529 <https://doi.org/10.1016/j.pharmthera.2021.107861>
- 530 Matos LC, JP Machado, FJ Monteiro et al., 2021, March. Understanding traditional Chinese  
531 medicine therapeutics: an overview of the basics and clinical applications. In  
532 *Healthcare* 9:257.  
533 <https://doi.org/10.3390/healthcare9030257>
- 534 Nestler G, 2002. Traditional Chinese Medicine. *Medical Clinics*, 86:63-73.  
535 [https://doi.org/10.1016/S0025-7125\(03\)00072-5](https://doi.org/10.1016/S0025-7125(03)00072-5)
- 536 Olagunju OS, 2012. The traditional healing systems among the Yoruba. *Archaeological*  
537 *Science Journal* 1:6-14.
- 538 Oṣanyinbí OB & K Falana, 2016. An evaluation of the Akure Yorùbá traditional belief in  
539 reincarnation. *Open Journal of Philosophy* 6:59-67.  
540 <https://doi.org/10.4236/ojpp.2016.61007>
- 541 Ozioma EOJ & OAN Chinwe, 2019. Herbal medicines in African traditional medicine.  
542 *Herbal medicine* 10:191-214.
- 543 Parasuraman S, GS Thing, & SA Dhanaraj, 2014. Polyherbal formulation: Concept of  
544 ayurveda. *Pharmacognosy reviews* 8:73.  
545 <https://doi.org/10.4103/0973-7847.134229>
- 546 Patwardhan B, 2014. Bridging Ayurveda with evidence-based scientific approaches in  
547 medicine. *EPMA Journal* 5:1-7.  
548 <https://doi.org/10.1186/1878-5085-5-19>
- 549 Qi F, Z Wang, P Cai et al., 2013. Traditional Chinese medicine and related active compounds:  
550 a review of their role on hepatitis B virus infection. *Drug discoveries & therapeutics*  
551 7:212-24.  
552 <https://doi.org/10.5582/ddt.2013.v7.6.212>
- 553 Qiu J, 2007. Traditional medicine: a culture in the balance. *Nature* 448:126-29.  
554 <https://doi.org/10.1038/448126a>
- 555 Sadat-Hosseini M, M Farajpour, N Boroomand et al., 2017. Ethnopharmacological studies of  
556 indigenous medicinal plants in the south of Kerman, Iran. *Journal of*

- 557 Ethnopharmacology 199:194-204.  
558 <https://doi.org/10.1016/j.jep.2017.02.006>
- 559 Setka S, 2016. Phantasmic Reincarnation: Igbo Cosmology in Octavia Butler's Kindred.  
560 MELUS: Multi-Ethnic Literature of the United States 41:93-124.  
561 <https://doi.org/10.1093/melus/mlv059>
- 562 Shakya AK, N Sharma, M Saxena et al., 2012. Evaluation of the antioxidant and  
563 hepatoprotective effect of Majoon-e-Dabeed-ul-ward against carbon tetrachloride  
564 induced liver injury. Experimental and toxicologic pathology 64:767-73.  
565 <https://doi.org/10.1016/j.etp.2011.01.014>
- 566 Shikov AN, AN Tsitsilin, ON Pozharitskaya et al., 2017. Traditional and current food use of  
567 wild plants listed in the Russian Pharmacopoeia. Frontiers in pharmacology 8:306255.  
568 <https://doi.org/10.3389/fphar.2017.00841>
- 569 Shikov AN, IA Narkevich, AV Akamova et al., 2021. Medical species used in Russia for the  
570 management of diabetes and related disorders. Frontiers in pharmacology 12:697411.  
571 <https://doi.org/10.3389/fphar.2021.697411>
- 572 Shikov AN, ON Pozharitskaya, VG Makarov et al., 2014. Medicinal plants of the Russian  
573 Pharmacopoeia; their history and applications. Journal of ethnopharmacology 154:  
574 481-536.  
575 <https://doi.org/10.1016/j.jep.2014.04.007>
- 576 Siddique H, B Pendry, MA Rashid et al., 2021. Medicinal plants used to treat infectious  
577 diseases in the central part and a northern district of Bangladesh-An  
578 ethnopharmacological perception. Journal of Herbal Medicine 29:100484.  
579 <https://doi.org/10.1016/j.hermed.2021.100484>
- 580 Sile I, E Romane, S Reinsone et al., 2020. Medicinal plants and their uses recorded in the  
581 Archives of Latvian Folklore from the 19th century. Journal of ethnopharmacology  
582 249:112378.  
583 <https://doi.org/10.1016/j.jep.2019.112378>
- 584 Singh H, T Husain, P Agnihotri, PC Pande et al., 2014. An ethnobotanical study of medicinal  
585 plants used in sacred groves of Kumaon Himalaya, Uttarakhand, India. Journal of  
586 Ethnopharmacology 154:98-108.  
587 <https://doi.org/10.1016/j.jep.2014.03.026>
- 588 Solomou AD, K Martinos & NG Danalatos et al., 2016. Medicinal and aromatic plants  
589 diversity in Greece and their future prospects: A review. Agricultural Science 4:9-21.  
590 <https://doi.org/10.12735/as.v4i1p09>

- 591 Soni P, AA Siddiqui, J Dwivedi et al., 2012. Pharmacological properties of Datura  
592 stramonium L. as a potential medicinal tree: an overview. Asian Pacific journal of  
593 tropical biomedicine 2:1002-08.  
594 [https://doi.org/10.1016/S2221-1691\(13\)60014-3](https://doi.org/10.1016/S2221-1691(13)60014-3)
- 595 Stephen-Victor E, I Bosschem, F Haesebrouck et al., 2017. The Yin and Yang of regulatory T  
596 cells in infectious diseases and avenues to target them. Cellular microbiology  
597 19:e12746.  
598 <https://doi.org/10.1111/cmi.12746>
- 599 Teklay A, 2015. Traditional medicinal plants for ethnoveterinary medicine used in Kilte  
600 Awulaelo district, Tigray region, Northern Ethiopia. Advancement in Medicinal Plant  
601 Research 3:137-50.
- 602 Tesfahuneygn G & G Gebreegziabher, 2019. Medicinal plants used in traditional medicine by  
603 Ethiopians: a review article. Journal of Respiratory Medicine and Lung Disease 4:1-3.
- 604 Tewelde F, M Mesfin, & S Tsewene, 2017. Ethnobotanical survey of traditional medicinal  
605 practices in LaelayAdi-Yabo District, Northern Ethiopia. International Journal of  
606 Ophthalmology & Visual Science 2:80-7.
- 607 Tu Y, 2011. The discovery of artemisinin (qinghaosu) and gifts from Chinese medicine.  
608 Nature medicine 17:1217-20.  
609 <https://doi.org/10.1038/nm.2471>
- 610 Tuasha N, B Petros, & Z Asfaw, 2018. Medicinal plants used by traditional healers to treat  
611 malignancies and other human ailments in Dalle District, Sidama Zone, Ethiopia.  
612 Journal of ethnobiology and ethnomedicine 14:1-21.  
613 <https://doi.org/10.1186/s13002-018-0213-z>
- 614 Yirga G, M Teferi, & M Kasaye, 2011. Survey of medicinal plants used to treat human  
615 ailments in Hawzen district, Northern Ethiopia. International Journal of Biodiversity  
616 and Conservation 3:709-14.
- 617 Yuan H, Q Ma, L Ye et al., 2016. The Traditional Medicine and Modern Medicine from  
618 Natural Products. Molecules (Basel, Switzerland) 21:559.  
619 <https://doi.org/10.3390/molecules21050559>
- 620 Zemed J, T Mekuria, CO Ochieng et al., 2024. Ethnobotanical study of traditional medicinal  
621 plants used by the local Gamo people in Boreda Abaya District, Gamo Zone, southern  
622 Ethiopia. Journal of Ethnobiology and Ethnomedicine 20:28.  
623 <https://doi.org/10.1186/s13002-024-00666-z>

- 624 Zhao Z, Z Liang, K Chan et al., 2010. A unique issue in the standardization of Chinese  
625 materia medica: processing. *Planta Medica* 76:1975-86.  
626 <https://doi.org/10.1055/s-0030-1250522>
- 627 Zhu F, XH Ma, C Qin et al., 2012. Drug discovery prospect from untapped species:  
628 indications from approved natural product drugs. *The Public Library of Science*  
629 (PLoS) One 7:e39782.  
630 <https://doi.org/10.1371/journal.pone.0039782>

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