

Chapter 40

Traditional Pakistani Medicines in Modern World

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ABSTRACT

As documented by WHO, traditional medicines include all the knowledge passed down through generations of indigenous peoples' beliefs, practices, and experiences about how to stay healthy, avoid getting sick, identify problems, and treat them, regardless of whether or not this knowledge can be rationally explained. In many areas of the modern world, peoples considered traditional medicines as an initial line of defense. "Complementary and alternative medicine" is another term for traditional medicine when it is used outside of its primary cultural setting. This chapter delves into the two primary traditional medicinal systems in Pakistan, namely Unani Tibb and Herbalism. Primary system is the treatment of disease through temperament of body while later focuses on the cure of disorders through different herbs and plants which have medical importance. Among the many conventional medical systems that are still in use today (developed countries), the Pakistani system ranks high.

KEYWORDS

Traditional Medicine Systems, Unani Tibb, Herbalism, Modern Medicine system

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INTRODUCTION

Traditional medicine (TM) and other complementary and alternative medical systems have been used for centuries. Irrespective of the availability of western biomedical healthcare, they are offered globally. Complementary and alternative medicine (CAM) is used by up to 80% of people in non-Western nations, and it is believed that half of the population in the Western world uses CAM. Dissatisfaction with Western biomedicine, worries about medication side effects, and personal beliefs supporting a holistic approach to health are thought to be the main causes of the use of complementary and alternative medicine (Sara et al., 2017).

Whole body systems (Ayurveda, homoeopathy, Unani, and Traditional Chinese Medicine); mind-body medicine (prayer, meditation, mental healing); biologically based therapies (use of natural substances, such as herbs, foods, vitamins, dietary supplements, herbal products); manipulative and body-based practices (massage); and energy medicine (Reiki) are the main categories of Traditional/Complementary and Alternative Medicines (TCAM) in vogue in both developing and developed countries. Traditional medicines have long been a vital component of Pakistani culture and have helped a sizable portion of the populace get healthcare (Uzma et al., 2023; Sara et al., 2017).

The widespread use of traditional medicines (TMs) has deep roots in aboriginal culture and continues to play a significant role today (Rahman et al., 2019). Fossil evidence suggests that people have been using plants for medicinal purposes for at least 60,000 years. The indigenous people of Pakistan have relied on traditional treatments for a variety of ailments since ancient times. Many different ailments, including headaches, stomachaches, cuts, and wounds, have been treated using this wealth of knowledge and medicinal flora from generation to generation (Bhardwaj and Gakhar, 2005).

There have been medicinal uses for about 50,000 flowering species worldwide, according to the literature (Ahmad et al., 2021). About 600 plant species in Pakistan have been found to have therapeutic properties, while the country's rich flora includes approximately 6,000 kinds of flowering plants (Nakagawa, 2001; Shinwari, 2010). 80 percent of Pakistanis living in rural regions still rely on traditional medication made from plants (Bodeker and Fredi, 2002). Traditional medicinal herbs continue to serve as the backbone of healthcare systems in rural and outlying locations (Qureshi, 2005).

Traditional Medicine Systems

According to Anon (2001), the Unani medicine system is dominant traditional healing method in Pakistan. It is utilized

for the treatment of numerous disorders using medicinal flora found in the local area (Ali et al., 2019). In Pakistan, herbalism, alternatively known as herbal medicine, constitutes another system of traditional medicine. It encompasses the utilization of vegetative plants or byproducts derived from them for therapeutic or medicinal purposes. According to group of researchers, although any portion of a plant can be utilized for medicinal purposes, the most prevalent components include foliage, bark, seeds, roots, fruits, and flowers (Acharya and Shrivastava, 2008).

Traditional Medicines in Pakistan

More over two-thirds of Pakistanis call rural areas home (Population Reference Bureau, 2003). Health indicators have been profoundly affected by poverty, which is exacerbated by illiteracy, women's low status, and insufficient sanitation and water supply (World Bank, 2002). Pakistan is home to 45,000 people who practice traditional medicine and majority of traditional healers are located in rural areas. The fact that they are present in rural areas indicates that the majority of their customers are people living in rural Pakistan (Adeniyi et al., 2018).

About 52,600 licensed Unani doctors work in both the public and private sectors across the country. Nearly 360 tibb clinics and dispensaries are providing free medication to the public through provincial health agencies (Rahman, 2019). Pakistan is now the eighth biggest exporter of medicinal flora for herbal medicines (Hussain et al., 2006).

Traditional Medicines in Modern World

There is a rapidly expanding market for traditional herbal treatment all across the globe. More than 10% of 3, 80,000 species of higher plants are utilized in various therapeutic formulations (Prance, 2001). By 2050, the worldwide market for medicinal plants would be worth \$5 trillion, according to some estimation (Shinwari, 2010). As a result, many people around the world choose herbal remedies, and Pakistan's indigenous and tribal communities hold the traditional knowledge and information about these plants in high regard (Khan et al., 2019; Gul et al., 2012; Arooj, 2023; Nadeem et al., 2013).

Traditional Medicines in Developed Countries

The drug Atropine codeine, dioxin, morphine, and quinine are only a few of the significant pharmaceuticals derived from vegetation and their metabolites that have a lengthy history of usage in contemporary "western" medicine. The 2nd half of 20th century has seen a meteoric rise in the use of herbal remedies in industrialized nations (Qaseem et al., 2019). Herbal medicines have seen a revival in popularity in recent years, thanks to a desire to tap into traditional healing wisdom. Herbal products are becoming a part of so-called "integrative" or "complementary" medical systems, particularly in North America and Europe.

A multitude of sites, such as WHO (WHO, 1999), Commission E of German (Blumenthal *et al.*, 2000) and Scientific Cooperation of Europe on Plant-based medicine (ESCOP, 1999), provide graphs on particular herbaceous plants. Particularly in United States, traditional therapies and techniques, like use of herbal medicines, experienced a meteoric rise in popularity towards the end of the twentieth century, driven by rising interest in self-care (Hussain et al., 2022; Tyler, 2000). Numerous plant-based products with various biologically proven effects, such as antioxidants, antiseptic, diuretic, CNS stimulant, sedative, expectorant, digestive, etc., can be found in the European market.

Response of people towards TM's

Many people have a favorable impression of these products over worldwide because they are "natural" rather than "synthetic," these are sparkle of a safe and sound lifestyle, which can facilitate people to wipe off other conventional "allopathic" medicine, and they believe these products are safer than drugs (Tyler, 2000).

Unani Tibb System (Ancient and 1st Medicine System)

When it comes to treating illness, the Unani medical system takes a comprehensive approach, including not only the physical but also the psychological, spiritual, and ecological factors. For optimal health, Unani recommends a combination of medications, beverages, and dietary adjustments. A key component of unani medicine is the recognition of the interconnected nature of the body's systems and organs. Because of this, practitioners often look at the full body (Ali and Alam et al., 2007).

Temperament of Human Body

In their descriptions of the human body's "humor," Unani tibbs and scholars distinguish four different fluids: Dam is hot and wet, balgham is cold and wet (phlegm), safra is hot and dry (yellow bile), and sawda is cold and dry (black bile) (Rahman et al., 2014). A heated temperament is a sign that one's dam humour has been more prominent than their other humours. A chilly temperament indicates sawda dominance, dry temperament safra dominance, and moist temperament phlegm dominance, in the same manner.

According to Majusi (2010), health is achieved when the humours are blended in appropriate dimensions, both in terms of quantity and quality. A natural bodily force known as Tabiat maintains this balance. When it comes to the makings of a person's temperament (humour), Tibb identifies six crucial elements, sometimes known as lifestyle influences. The first is the surrounding air; the second is food and drink; the third is moving around and relaxing; the fourth is thinking about

and feeling things; the fifth is sleeping and being awake; and the sixth is eliminating waste and fluids. When these things are in harmony with one another, the body functions normally; when they are out of whack, illness ensues (Siddiqui, 2009b).

Maintenance of One's Health According to Unani Tibb

Follow these steps and follow these guidelines from Unani tibb to take care of your health and cure diseases according to your temperament. People with Sanguine type temperament (moist and cold) should limit their intake of sugar and fatty foods while increasing their consumption of fiber and water. Consistent heart-healthy activity and five to six hours of sleep per night is essential. People with choleric type temperament (moist and hot) need to stay away from warmer climates and hotter temperatures (Jabin, 2011). People with Phlegmatic type temperament (moist and cold) should avoid foods and drinks that are heavy in milk, cheese, refined sugar, carbohydrates, and gluten, as well as foods and drinks that are cold or ice-cold and glutinous. People with melancholic type temperament (dry and cold) should eat vegetables, nuts, beans, peanuts, eggplant (brinjal), and tomatoes are off-limits to them. Coffee and tea are bad. Try to incorporate breathing exercises into their routine if you're struggling with insomnia, feelings of loneliness, or sadness. (Jabin, 2011).

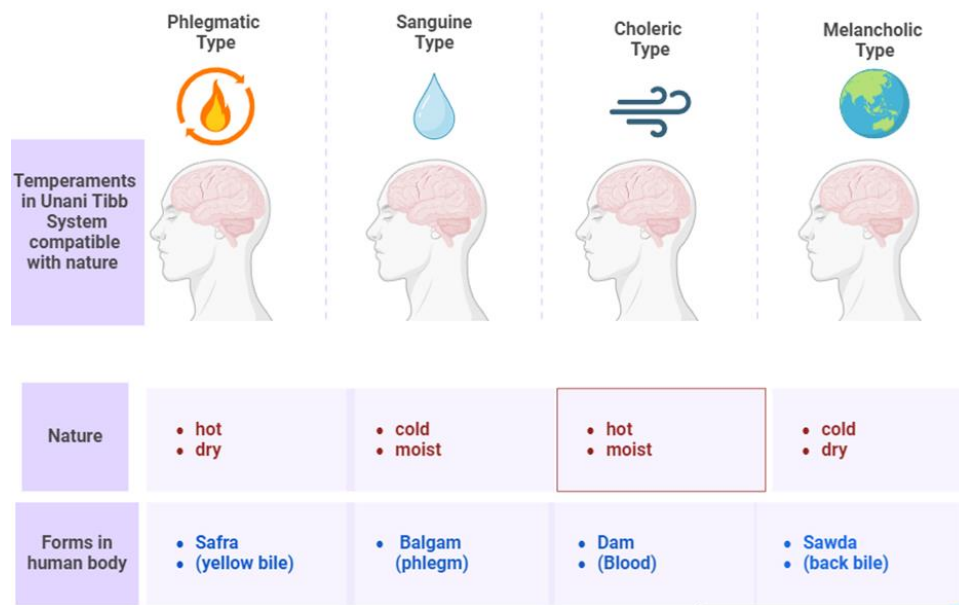


Fig. 1: Unani Tibb temperaments present in human body according to nature.

Place of Unani Tibb in Pakistan

According to the WHO (2001), the Unani system is overseen by a government organization in Pakistan, which was established by an Act signed in 1965. The Pakistani government recognizes both "modern" and "traditional" medical practices, including Unani Tibb (traditional medicine). The practice of Unani medicine spread from its Greek roots to Asia and Arabia. 36,000 practitioners, including 2,000 women, serve the whole rural population and a large number of urbanites in Pakistan; they are all graduates of Tibbi colleges.

According to a 2006 study by Hamayun and colleagues there are currently around 40,000 Unani doctors registered with the government. Karachi is home to one of nine medical institutions in the nation, Hamdard Tibbia College, also known as the College of Eastern Medicine. Approximately 350 hakims, who practice traditional medicine, graduate from these schools annually.

Herbalism/ Herbal system (2nd traditional medicine system)

Herbalism is a diagnostic practice in which herbalists assess diseases by examining the pulse, tongue, feces, sight, voice, shape, and touch of the patient. They then prescribe treatments based on their expertise. These herbs enhance the body's ability to function and boost immunity due to the minerals they contain. The practice of taking medical plants for healing goes back to the earliest days of human civilization (Uzma et al., 2023). Based on data drawn from the Bible and the Talmud, it is known that aromatic plants like myrtle and incense were used in several ceremonies that were part of a healing process. Hippocrates' books, written between 459 and 370 BC, provide a classification of 300 therapeutic plants based on their physiological effects (Kelly, 2009). Wormwood was used to treat fever, garlic was used to combat opium, intestinal parasites, deadly nightshade and henbane and mandrake were applied as fragrant hellebore, haselwort and narcotic were used as sea onion, emetics, asparagus and parsley and garlic were utilized as hypotensive, and pomegranate and oak were employed as acidic (Hammad et al., 2020).

Herbalism in Pakistan

Traditional herbal therapies and remedies have been widely used in this region for a significant period of time (Shaikh and Hatcher, 2005). Aromatic herbs are mostly utilized for culinary, aromatic, and medicinal purposes. These plants include chemicals that possess many biologically significant properties, such as antibacterial and antioxidant capabilities. Herbalism and folk medicine practitioners have utilized them as natural remedies for millennia, including in ancient practices such as Ayurvedic medicine. The herbal sector is experiencing a steady rise in value due to the growing demand for traditional medicine (Shinwari et al., 2006).

Herbal Medicines in Developed Countries

The Supplemental Health and Education Act of 1994, passed towards the end of the 1990s, greatly boosted sales of dietary supplement goods in the United States, including botanical and herbal supplements (Tyler, 2000). Herbal remedies that boast medicinal properties are often classified as pharmaceuticals in the European Union whilst those that don't fall more into the food or cosmetics category. The scientific and legislative requirements that control the advertising of herbal remedies are now being worked on to bring them into harmony (Hussain et al., 2023).

List of Pakistani Traditional Herbal Medicines

Several prominent herbal medicines have a significant role in treating various diseases and ailments mentioned in literature and Fig 2.

Echinacea is used to enhance the defenses and assist the body in combatting infections. Utilized for the treatment of conditions such as fever, boils and herpes. Dong quai, is utilized to address gynae issues such as premenstrual stress, menopause and period discomfort. Several researches suggest that quai has the potential to reduce blood pressure. Garlic is employed to mitigate the danger of coronary artery disease by diminishing the amount of circulating fats and cholesterol, which is a sort of blood fat. Garlic's antibacterial and antiviral characteristics make it effective in combating colds, sinusitis, and other respiratory diseases. Ginger has been demonstrated in numerous trials to be effective in reducing nausea, particularly nausea caused by motion and morning sickness. Hypericum, also referred to as St John's Wort, is a well-recognized name for this plant. Research indicates that St John's Wort is as efficacious to certain pharmacological antidepressants in managing light to moderate depression. (Arring et al., 2018).

Cumin

Cumin, scientifically known as *Cuminum cyminum*, is a type of herbaceous plant that blooms annually and belongs to the Apiaceae family. It is referred to as 'zeera' in Pakistan (Nadeem et al., 2003). Cumin seeds bear resemblance to fennel seeds in terms of their appearance, albeit being smaller and having a darker hue (Jazani et al., 2008). Cumin seeds are nutritionally dense, including significant quantities of fat, protein, and dietary fiber. Cumin seeds contain significant amounts of vitamins B and E, as well as many nutritional elements, particularly iron (Bettaieb et al., 2011).

Benefits of Cumin

Anti-oxidative and Anti-diabetic Effects

Cumin possesses strong antioxidant properties, allowing it to effectively neutralize hydroxy, peroxy, and DPPH free radicals. As a result, it can prevent the oxidation of lipids caused by these radicals (Thippeswamy and Naidu, 2005). Cumin seeds have been found to have an antidiabetic impact in people with diabetes. Patients with diabetes showed a marked improvement after taking *C. cyminum* orally (Minf and Aifa, 2015).

Digestive Stimulant Action

The enzyme activity of lipase from the pancreas reduced when 1.25% cumin was consumed. Nevertheless, it amplified the actions of amylase, pancreatic trypsin, and chymotrypsin. The quantity of bile acids produced and released within a given period of time was dramatically changed by the ingestion of cumin in one's diet. Platel and Srinivasan (2000a) found that bile acid secretion increased by up to 70% in the experimental group in comparison with the control group.

Anti-inflammatory Effects

Anti-inflammatory effects and underlying mechanisms of cumin essential oil were studied in lipopolysaccharide stimulated cells (Wei et al., 2015). Cumin oil has the ability to suppress NF- κ B and mitogen stimulated protein kinases, which means it can reduce inflammation in RAW cells that have been primed by LPS (Srinivasan et al., 2018).

Mint

A broad variety of medical uses have been associated with plants belonging to the mint family, which includes fragrant mint herbs. Theriaca, a poem by the Greek poet and physician Nicander of Colophon (197–170 BC), makes an interesting allusion to mints in their oldest known written form, describing them as "delighting in gleaming rivers". King Hammurabi of ancient Babylon (1800 BC) is believed to have penned the earliest records of mint plants; he prescribed them for therapeutic uses, namely gastrointestinal (Audenaert, 2013).

Unique History of Mint Use for Gastro-intestinal Disorders

Several medical literatures cite mints as a treatment for cholera; the first of these is also credited to Pliny (Hajar, 2012). Paulus Aegineta recommended consuming "juice of pomegranate sprinkled with mint" as a treatment for cholera (Raj et al., 2021) nutritious drink for cholera patients was created by Sydenham using mint A number of studies have demonstrated that essential oils of various mints have demonstrated in lab activity against many parasites, including roundworms, Echinococcus, and Trichostrongylidae (Maggiore et al., 2012; Katiki et al., 2011).

For Reproductive Purposes

Because of their abortifacient qualities, mints have found extensive use in reproductive medicine, particularly in the areas of feminine hygiene and contraception. Contraception was mostly confined to the "barrier methods" in ancient Greece, when the earliest documents on female health were made. Pessaries, particularly wool balls put into the female reproductive system, were flavored with mints for the cooling and calming effect they produced (Zareef et al., 2003).

Act as Animal Repellent

It is well-documented that Mint herbs, particularly pennyroyal, possess insect repellent and larvicidal growth/reproduction regulating properties against numerous insects. These include mosquitoes, which are known to spread diseases like malaria, yellow fever, dengue, and zika (Ansari et al., 2000; Rocha et al., 2015; Kumar et al., 2011).

For Urinary and Cardiovascular Disorders

A small number of sources discuss the potential benefits of mint for the urinary and cardiovascular systems. Like Pliny, Aulus Cornelius Celsus justified the use of pennyroyal and spearmint as diuretics and stones removers (Hajar, 2012). According to recent studies, the *Mentha x villosa* species can lower blood pressure by causing bradycardia and vasodilation (Lahlou, 2001). Several mint compounds may exhibit this vasoactive effect, but menthol is the only one that has been proven to do so (Silva, 2020).

For Pain and Inflammation

So, from classical antiquity onward, mints were applied topically or taken internally to alleviate the inflammatory symptoms of various ailments, such as pain, redness, and fever. Pliny used mints in his formulae for irritation of the mouth and eyes (Hajar, 2012). Leg atrophy, likely caused by poliomyelitis, demyelinating disorders, or trauma, was treated with one of these preparations as a rubefacient (Pinto, 2017).

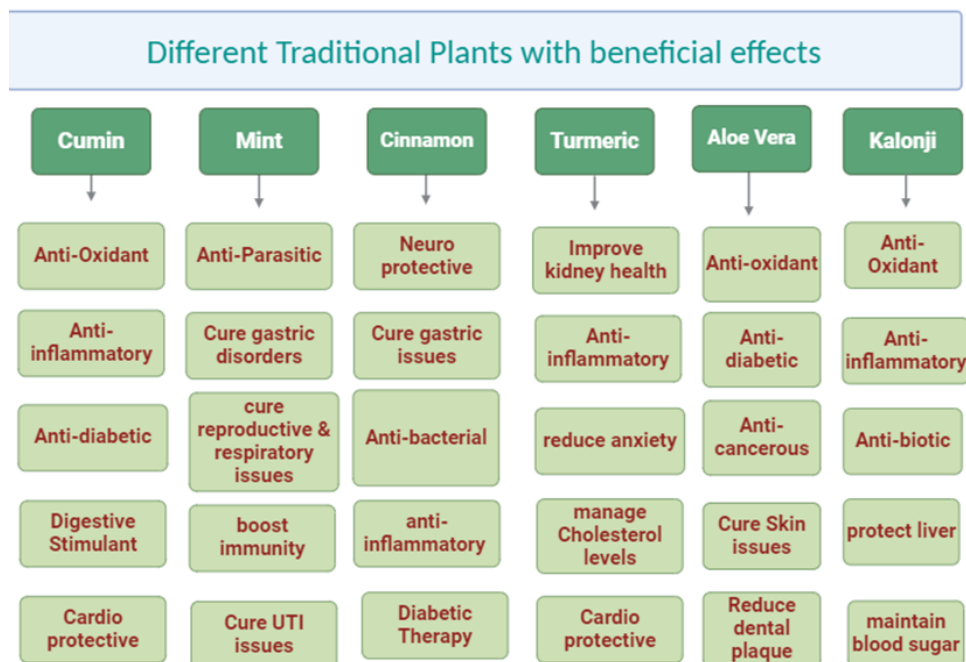


Fig. 2: Different examples of beneficial plants/herbs used in Pakistan

Cinnamon

For example, diabetes, formerly known as the "thirsty disease" in China before the term diabetes mellitus was coined in modern medicine, has been treated with a variety of traditional Chinese medicines for hundreds of years (Lahlou et al., 2001). Cinnamon trees can be found on every continent, and the genus has been home to about 250 different species (Spiriling, 2001). There are procyanidin A-type and B-type linkages in the procyanidin components (DerMarderosian and

Beutler, 2011). Cinnamon and berries are the sources of these procyanidins. Additionally, they possess antioxidant properties. Similarly, cinnamaldehyde or trans-cinnamaldehyde, the primary component of cinnamon, is present in the essential oil and contributes to both the aroma and the various physiological consequences related to cinnamon (Lawrence, 2007).

Cinnamon has a history of usage as a diabetic therapy and neuroprotective agent in traditional Chinese medicine, which dates back about four thousand years (Beck, 2005). Additionally, inflammation, gastrointestinal issues, and urinary infections can all be alleviated using cinnamon's health-promoting properties (Babylonian, 2018). After demonstrating that cinnamon essential oil was effective against *Streptococcus mutans*, Chaudhari et al. (2012) drew the conclusion that cinnamon essential oils could serve as a viable substitute for other antibacterial substances in combating the bacteria that cause mouth infections.

Ginger

Zingiber officinale is the scientific name, and it is a member of the ginger family (Zingiberaceae). The rhizome, or subterranean stem, of the ginger plant is utilized both medicinally and as a seasoning. Use it as juice, oil, or in any of its dried, powdered, or fresh forms (Shahrajabian, 2019). Many different kinds of "stomach problems" can be alleviated by ginger. These include nausea associated with motion sickness, morning sickness, colic, upset stomach, gas, diarrhea, nausea after cancer therapy, vomiting and nausea after surgery, and lack of appetite. Additional applications include alleviating aches and pains associated with rheumatism, muscular tension, menstruation, coughing, and bronchitis. Pain in the stomach, low back, or chest can also be alleviated by ginger. Ginger is a common ingredient in many culinary and drinks recipes (Shahrajabian, 2019).

Possible Risks and Benefits

There are several advantages and disadvantages to every medical treatment option. Becoming an educated medical consumer is crucial for protecting and improving our health. Traditional and herbal medicines, in all their forms, have extensive medicinal and preventative uses. There is no system in place to ensure the safety and efficacy of herbal remedies. Therefore, it is possible that contaminants or batch-to-batch variations are to blame for some of the documented harmful effects. Herbal remedies may be more likely to cause side effects due to their high length (Hudaib, 2011). In order to make conventional therapies safer and more successful, this paper discusses the various benefits and hazards of consuming herbal products. Worldwide, more and more people are turning to herbal remedies as an alternative to conventional medication for the relief of a wide range of medical conditions, including cardiovascular disease, diabetes, hypertension, and even some forms of cancer. Herbal remedies are more commonly used in India due to their accessibility (Ernst, 2007).

Future Prospects of Pakistani traditional medicines system in world

There is a burgeoning market for herbal remedies, sometimes known as "Unani" or the Greco-Arab medical system. Astonishingly, the annual revenues of herbal products already surpass US\$40 billion. Among the countries bordering the eastern Mediterranean, Pakistan is unique in having officially sanctioned Unani educational institutes. It is critical to have a national strategy plan that will lead to improved sector cooperation in Pakistan, and the government has established a variety of institutions and efforts to achieve just that (Shaikh and hatcher, 2005).

Conclusion

Pakistanis have used traditional medicine for decades, rooted in their rich culture. The healing methods include herbal treatment, ancient spiritual therapy, and Unani Tibb. Pakistani traditional medicine uses medicinal plants and herbs for rehabilitation, and medicinal use is one of the most frequent forms. Traditional healers like hakims and herbalists use their understanding of plant therapy to treat a wide range of ailments and problems, from minor to chronic. Unani Tibb, another ancient Greek medicinal practice with Muslim roots, is also popular in Pakistan. Unani Tibb's comprehensive approach to treatment includes diet, lifestyle adjustments, herbal remedies, and physical therapy to restore equilibrium. Even though modern medicine is growing more popular in Pakistan, traditional healing methods are still significant in remote regions lacking easy availability of modern healthcare. Pakistanis still use traditional medicines due to their cultural relevance, low cost, and perceived efficacy. While there are many positive aspects to traditional medicine, there are also some negative aspects, including issues with safety, standardization, and quality control. Traditional and modern medical methods are being combined to give safe and effective treatment to Pakistanis.

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