



## Review Article

### USE OF HERBAL MEDICINES IN SAUDI ARABIA; A SYSTEMATIC REVIEW

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#### ABSTRACT

This review aims to identify prevalence and use of herbal medicine in Saudi Arabia. The review included data published between 2007 and 2017. The literature search was conducted in conformity to the standards established by Prisma guidelines. Total 24 primary research evidences were included. Majority of the studies identified were cross-sectional designs with only two randomised controlled trials. Majority of the studies have been conducted during 2014, 2015, and 2017. The prevalence of herbal medicine use ranged between 10.3% - 75.0%. The herbal medicine use in Saudi Arabia is associated with following factors: spiritual beliefs and perceived effectiveness and hopelessness for the modern medicines, followed by chronic illnesses such as cancer and neurological disorders. Physicians and pharmacists both support the use of herbs, latter showing limited knowledge. More research should be conducted to determine effectiveness of herbal medicines. Efforts should be made to promote knowledge regarding correct herbal practices.

**Keywords:** Herbal medicine; CAM, Saudi Arabia; prevalence; use; utilization; practice.

#### INTRODUCTION

Herbal medicines form an important part of the Complementary and Alternative Medicine (CAM). CAM refers to a diverse group in healthcare that comprises of various practices, systems, beliefs, and products that do not constitute a formal part of the conventional contemporary medicine.<sup>1</sup> Researchers have shown an increased interest in use of CAM as it underpins an incredible healing power for a number of injuries, ailments, and health conditions. The use of herbal medication within CAM is not consistent, but differs across various countries and traditions.<sup>2,3</sup> People in Saudi Arabia also show great reliance upon CAM. However, the approaches adopted are different from other countries. CAM in Saudi Arabia includes Tibbu Nabawi that is based on prophetic medicine. Above 70% of population in Riyadh has shown reliance on prophetic medicine for several diseases.<sup>4</sup>

The World Health Organisation (WHO) has identified traditional medicine practices as diverse since it includes a variety of concepts including herbal medicine, animal parts, and the mineral-based substitutes.<sup>5</sup> Traditional medicine combines these to develop a single intervention for treating illnesses. The different terms used to refer traditional medicine includes CAM, alternative medicine, and non-conventional medicine. Though herbal medicine constitutes an important treatment option for chronic diseases around the world, the point of concern is that majority of patients use it for chronic illnesses without getting an advice from the healthcare professionals.<sup>6</sup> Worldwide, the use of herbal medicine has been estimated 80% where majority of patients use it after getting an advice from their friends and only 25% consult their physicians' prior administration of herbal medicines.<sup>7</sup> The use of herbal medicine in Saudi Arabia has been found between 8% and 76%.<sup>8</sup> Research regarding the use of herbal medicine is deemed as important to prevent wrong practices that shall be eliminated and its usage can be improved in the right dimension.<sup>9</sup>

Aside from the general definition of CAM, herbal products have been defined as the essences extracted from natural materials. The process of extraction mainly follows biological or physical processes and thus these contain inert or excipient ingredients that are different from the active ingredients.<sup>10</sup> In Saudi Arabia, it is mandatory to get the medicinal products registered from the Ministry of Health. Since herbal products mostly contain active ingredients vulnerable to cause reactions on use, the registration offers a way of bringing claims.<sup>11</sup> There is no exception to the fact that use of herbal remedies is widely common in Saudi Arabia. There have been various reasons identified that defines patients' choice to use herbal medicine. However, these reasons often conflict with the current medical knowledge. It is important to identify the attitudes and beliefs that Saudi population has developed for use of herbal medicine to prevent any unsatisfactory outcomes.<sup>12</sup>

Studying the use of herbal medicine among Saudi population will help reveal the various cultural, psychosocial, and religious factors and beliefs. This study aims to present a systematic review of recent literature sources to understand the patterns followed for herbal medicine use in Saudi Arabia. It will also help to determine the common conditions when patients prefer to make a shift from the clinical medicine. The data presented in this study is based on the primary studies published between 2007 and 2017.

#### METHODS

A systematic research was performed over electronic database to extract relevant articles. The review includes full-text articles available the Embase, Science Direct, PubMed, and Wiley Online Library. Only those articles have been included that met the inclusion criteria.

## Data Extraction

A series of keywords were used to refine the research. It is important to implement selection criteria to identify relevant articles. The aims and objectives of the given study formed the selection criteria for extracting suitable information. A thoughtful approach was required to prevent any risk of bias in selecting the studies. This led the researcher develop strings of different keywords joined with the Boolean operators 'AND' and 'OR'. Utilisation of appropriate keywords is referred as the MeSH terms to target evidences with similar keywords in their headings. The keywords used include Herbal Medicine use and (Saudi or Abha or Abqaiq or Al Baḥah or Al Dammam or Al Hufuf or Al Jawf or Al Kharj (oasis) or Al Khubar or Al Qaṭif or Al Taif or Arar or Buraydah or Dhahran or Ḥail or Jeddah or Jizan or Khamis Mushayt or King Khalid Military City or Mecca or Medina or Najran or Ras Tanura or Riyadh or Sakaka or Tabuk or Yanbu). These keywords were combined with 'prevalence' OR 'utilization' OR 'use' OR 'practice'. Full-text copies were obtained for all the searched articles and also their reference lists. References from the searched articles were also utilised to broaden the scope of research and to enrich the study with more detailed information from the literature.

## Inclusion and Exclusion Criteria

The review is based on the primary studies with human subjects. Studies based on secondary evidences such as systematic reviews were excluded from the search. It includes primary research that focused on herbal medicine use or use of herbal medicine within CAM regardless of the diseases. There was no particular disease focused to conduct the research, but use of herbal medicine has been considered in general. Therefore, the review includes studies for using herbal medicine with different diseases or health conditions. The review only includes studies published between 2007 and 2017 and excludes the studies published prior to this

period. This enables the researcher to precisely focus on recent evidence. Considering the aims and objectives of the study, only the studies conducted on aforementioned regions in Saudi Arabia were considered. Studies based on herbal medicine use, but for countries other than the mentioned ones were excluded from research. Only the articles published in English language were included. This criterion has been followed as a matter of convenience and because of the complications that likely occur when information is translated from one language to other. The initial research resulted in 259 studies. Application of eligibility criteria resulted in 67 which were further reduced to 24 as the inclusion criteria was applied.

## RESULTS

Majority of studies identified followed a cross-sectional survey design within the local community. Number of studies published during 2014 and 2015 has been higher. Riyadh remains the most commonly studied region for use of herbal medicines and CAM followed by Jeddah. Table 1 summarises the search results showing the key findings from each study.

Research reveals that use of herbal medicines is not consistent across all the cities, but Riyadh and Jeddah have been highlighted the most. Nine of the identified studies analysed the knowledge, attitude, and practices that Saudis show towards use of herbal medicine.<sup>13-19</sup> All of the studies included a cross-sectional study design for the community-based sample. All the studies collected data from some region or study in Saudi Arabia, however only a single study reported information for Saudi Arabia without specifying any study.<sup>20</sup> These studies are not comparable to the present view since they identified the use of herbal medicine across Saudi Arabia relative to a particular disease or disorder such as, dermatology.

**Table 1: Characteristics of the included studies**

Author	Year	Country/ City	Design	Sample size/ population	Herbal medicine used and for which disease	Findings
Al-Ghamdi et al.	2017	Riyadh and Al Kharj	Cross-sectional descriptive study	N=612	Pregnant Women	Use of herbs among pregnant women is relatively high in Saudi Arabia These are mainly taken to accelerate and ease labour, to clean the womb, and to boost general health
Eldalo et al.	2017	Taif	Cross-sectional survey	N=422	Obesity	Majority used herbal medicines (98.1%) Green tea (88.4%) ginger (29.5%) 72% admitted for the recurrent use of herbal medicine
Kamel et al.	2017	Jeddah	Cross-sectional study	N=300	Diabetes	There is no relationship between use of herbal medicine and the demographic characteristics of individuals Majority of diabetic patients are not well-aware of the herbal medicine use
Al Ghamdi et al.	2015	Saudi Arabia	National Survey	N=1901	Dermatology outpatients	Herbs remains an important CAM modality for treating dermatology disorders
Al-Mansour et al.	2015	Majmaah University	Survey	N=69	Medical students	Medical students showed less satisfaction regarding CAM Herbal products remained one common CAM modality among medical students

Musaiger, & Abahussain	2015	Al-Khobar city	Survey	N= 736	Adolescents	CAM is common among the given population where prevalence of herbal use is higher
Alhaddad et al.	2014	Taif	Cross-sectional study design	N=900	Determined public knowledge regarding herbal medicine	Awareness for alternative medicine was higher (88.7%) as compared to modern medicine (74.2%) Physicians (66.6%) and pharmacists (46.2%) formed the major sources of information
Aljaloud, & Ibrahim	2013	Riyadh	Survey	N=105	Athletes	10.3% reported use of herbal dietary supplements which is lower than intake of other supplements
Allam et al.	2014	Riyadh	Cross-sectional study	N=240	Primary care services	Integration of services is more prevalent among females Service providers in Jeddah show very favourable attitudes and good knowledge towards the use of herbal medicine in primary care
Al-Mawla et al.	2014	Taif	anonymized self-administration questionnaire	N=600	Digestive system disorders	Use of herbs is common among Saudi patients to treat digestive disorders
Alosaimi et al.	2014	Riyadh	Cross-sectional study	N=321	psychiatric disorders	Use of herbal medicine is higher in the spiritual context after the Holy Quran
El-Mawla et al.	2014	Taif	Cross-sectional survey	N=480	Pharmaceutical market	Herbal products acquire a noticeable share in the pharmaceutical market Cough products remains the mostly used natural products
Sait et al.	2014	Jeddah	pre-tested structured questionnaires	N=242	Cancer	Alternative medicine is more common among females and older age patients
Suleiman	2014	Riyadh	self-administered questionnaire	N=420	Purchasers of herbal medicines and dietary supplements	Public show only limited awareness regarding use of herbal medicines especially alongside the other medicines
Al-Arifi et al.	2013	Riyadh	Cross-sectional survey	N=1700	Community pharmacy	Pharmacists show good knowledge regarding herbal medicine They lack knowledge for drug reactions
Al Bedah et al.	2013	Qassim Province	Cross-sectional study	N=1160	Primary healthcare centres	The use of CAM is widely common among Saudis both in the Eastern and Western regions. 75% of the subjects used herbs in the previous 12 months for medical and health reasons
Al-Mawla et al.	2013	Taif	Cross-sectional study	N= 300	general paediatric outpatient clinics	The use of herbal remedies is medium among Taif children
Al-Zahim et al.	2013	Riyadh	Interview-based survey	N=232	Liver disease	Herb use was represented by 31.8% of all users. CAM use was reported among more than half of the patients People believe CAM as highly effective and beneficial
Al-Rowais et al.	2012	Riyadh	Cross-sectional study	N=1,113	Primary healthcare physicians	Majority showed a positive attitude towards use of CAM They often feel reluctant to discuss CAM practices with the patients due to low level of knowledge among them Physician felt comfortable about counseling patients and understood well about Ruqyah (spiritual healing), honey and bee products, dietary supplements, massage therapy, relaxation, herbal medicine, and cupping (40.3, 38.3, 34.9, 34.4, 25.8, 22.8, and 21.4%).
Elolemy & AlBedah,	2012	Riyadh	cross-sectional descriptive household survey	N=518	Random Sampling with no particular disease	58.89% of medical herbs were used as a CAM practice. Public show increased interest in use of CAM People do not prefer to discuss their CAM experiences with physicians

Al-Kharfy	2010	Riyadh	Cross-sectional study	N=115	Community pharmacists	Awareness regarding herbal products is poor They are perceived as harmful by majority of pharmacists
Al-Rowais et al.	2010	Riyadh	Cross sectional study	N=1408	Patients consulted with traditional healers	Visits to traditional healers are high (42%) Holy Quran (62.5%) herb practitioners (43.2%) cautery (12.4%), cupping (4.4%).
Salem et al.	2010	Al-Khobar, Saudi Arabia	Comparative study	N=88	Helicobacter pylori among patients with non-ulcer dyspepsia	The herb named Nigella sativa is useful for treating H. pylori activities as compared to the triple therapy
Jan et al.	2009	Jeddah	50-items structured questionnaire	N=79	Children with chronic conditions	Many patients refer to alternative therapies for seeking medical help Safety and efficacy of alternative therapies is weakly understood Religious or spiritual healing was used in 82% Physical interventions in 21% Tropical or oral preparations or herbs in 30%

## DISCUSSION

Around 24 studies have been identified for the selected range of years i.e. 2007 and 2017 where majority were published during 2014 and 2015. In general, the use of herbal medicine and use of herbal medicine within CAM in Saudi Arabia varies from 21.6% to 90.5%.<sup>8</sup> Increased prevalence for herbal medicine in this review can be linked with the characteristic differences in local customers and traditions in the Saudi communities as some appear extremely conservative and religious.<sup>21</sup> Eight of the studies identified explicitly used the term 'herbal medicine' to represent the research<sup>13,14, 18, 23-26</sup> while 11 of them used the term complementary and alternative medicine.<sup>15, 16, 20, 27, 28, 29, 30, 31</sup> Differences in the results of these studies can be attributed to the differences in study objectives, methodology, population characteristics, sample size, and study design. These differences made it difficult to precisely define the results.

As identified from the studies, the major reason that encourages Saudi communities to go for an herbal remedy is failure of the medical treatment. The study by Sait et al.<sup>29</sup> confirms this fact as it determined the prevalence of spiritual beliefs among cancer patients and relied on herbal and alternative treatments as medical treatments failed to cure. Findings reveal that people in Saudi Arabia face difficulties in seeking help with physicians due to longer intervals for appointment, long-time waiting, and the inconvenience they face regarding expensive consultation fees, diagnostics, and expensive drugs. These findings are in line with the studies conducted by Al-Ghamdi et al.<sup>32</sup>, Tait et al.<sup>33</sup>, Purohit et al.<sup>12</sup>, and Thomson et al.<sup>9</sup> However, the findings by Suleiman<sup>26</sup> and Al-Arif<sup>23</sup> suggest that use of herbal medicine is common in Saudi Arabia because of the widespread belief that natural things are safe to use.

The studies conducted by Eldalo et al.<sup>34</sup>, Al-Ghamdi et al.<sup>20</sup>, Al-Ghamdi et al.<sup>18</sup>, Al-Sait et al.<sup>29</sup>, Alosaimi et al.<sup>35</sup>, Al-Mawla et al.<sup>24</sup>, Al-Zahim et al.<sup>36</sup>, Salem et al.<sup>37</sup>, and Kamel et al.<sup>13</sup> focused on particular diseases and identified the use of herbal/alternative medicines as prevalent among patients. Since these studies focus on varying diseases, they cannot be differentiated into categories. The fact these studies indicate towards is that patients undergoing chronic illnesses who have made substantial efforts to find relief with modern techniques or those with spiritual beliefs turn

towards herbal medicines. This shows their increased interest on natural products.

The studies conducted by Al-Rowais et al.<sup>19</sup> and Alosaimi et al.<sup>35</sup> report for the increased visits to spiritual healer where use of herbal medicine remains higher after the Holy Quran. This indicates the fact that majority of herbal users gain their knowledge from their friends and family or from the mass media. On the contrary, studies conducted by Al-Kharfy<sup>14</sup>, Al-Arif<sup>23</sup>, Al-Bedah et al.<sup>28</sup>, and Al-Rowais et al.<sup>16</sup> considered the viewpoints of service providers and practitioners including medical students, community pharmacists, and physicians. Physicians and medical students show positive attitudes towards promoting use of herbal medicines whereas the community pharmacists show only less positive attitudes and knowledge towards herbal medicines. This is comparable to the study conducted by Alhaddad et al.<sup>38</sup>, which reports physicians (76.2%) as the major source of knowledge for public. The study by Allam et al.<sup>22</sup> reported the increase use of herbal medicines in primary care centres and highlighted the gender differences where women were more common users of herbal medicines as compared to men. While, study conducted by Aljaloud and Ibrahim<sup>39</sup> indicated the supplements use helped to improve their performance and health. One limitation of our review was the heterogeneity of the information, which served as a barrier to combine the results in a comprehensive and comparable manner. Nevertheless, this review has consolidated the recent published data on this subject and has explored future direction of research.

## CONCLUSION

Besides the use of herbal medicines are highly prevalent in Saudi Arabia, it is not well-established that majority of people use it to prevent the hassle of using medically indicated therapies. The engagement that pharmacists show with the local community regarding use of herbal medicine is not well-established. On the contrary, the attitude and knowledge that physicians show are satisfactory. This review identifies need of promoting research regarding herbal medicine use for specific diseases. Population surveys are recommended in future to increase the knowledge and awareness regarding different options for herbal use.

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