

Herbal medicine in Jordan with special emphasis on commonly used herbs

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Abstract

To assess the current situation of sales and uses of herbal medicines in Jordan, more than 100 herbalists throughout the country were interviewed. The collected data included the types of herbs present in the market, the recommendations made by the herbalists in the treatment of ailments, the level of education and training of the herbalists, and miscellaneous observations. One hundred and fifty medicinal plant species were present in the local market. Based on their availability in the market and on the herbalists' recommendations, 9 plant species were considered very common and 17 were considered as common. The survey indicated that most of the herbalists were not educated or trained in the field of herbal medicine except for their expertise gained from their predecessor, none were licensed for this particular purpose; several odd or unprecedented recommendations were passed to the customers. This survey emphasizes the necessity of proper handling of herbal medicines that requires proper regulations and licensing.

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1. Introduction

Herbs have been used for medical treatment since the earliest days of mankind. Various Chinese-, Egyptian-, Babylonian-, Greek-, Arab-, and Moslem-scientists enriched our today's knowledge with their expertise in herbal medicine. However, the astounding advancements of synthetic medicine overshadowed traditional herbal medicine for over 50 years. Thus, herbal medicine became less common in the last decades, but existed in remote areas or for small and poor sections of the population. However, the recent call for "back to the nature" has affected all public sectors, either because some synthetic drugs failed to prove effective with serious side effects, or could not cure recently discovered illnesses including AIDS. The majority of the world's population in developing countries still rely on herbal medicines to meet their health needs (Abu-Irmaileh and Afifi, 2000). Furthermore, in cases where synthetic medicine could not relieve patients who suffer from hard-to-cure illnesses, they have found peace of mind and psychological comfort with folk medicine practitioners.

Following this trend, herbal medicine sprouted at all levels in the society. Unfortunately, the number of the scientifically well-oriented and experienced herbalists are few, but many who have found a prosperous trade, started to deal with herbal medicine without proper background.

In this research we surveyed the current situation in selling herbal medicines in Jordan in order to salvage the existing knowledge about plants and their properties which exist in the hands of rapidly diminishing number of experienced people but are more and more practiced by mainly incompetent dealers. Additionally, the improper handling of herbal medicine in Jordan was pointed out. The approximate number of medicinal plants sold in the herbalists' shops was recorded based on the survey carried out during a two-year period. Hence, this paper, which is intended to be a basic study of herbal medicine in Jordan, emphasizes the most commonly and commonly used medicinal herbs to complement the previously published paper on less commonly used herbs in Jordan (Afifi and Abu-Irmaileh, 2000).

2. Materials and methods

Over a two-year survey, almost all herbalists in Jordan were interviewed. The collected data from the questionnaire

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included the types of herbs present in the market, recommendations made by the herbalists in the treatment of ailments, method of preparation, level of education and training of the herbalists, and miscellaneous observations. List of names of plants—sold as single medicines—are recorded. The macroscopical identification of the plants was based on taxonomic studies of the collected samples using recognized descriptive references (Bruneton, 1993; Boulos, 1983; Evans, 2002; Feinburn-Dothan, 1978; Post and Dinsmore, 1932; Robbers et al., 1996). Documented uses were based on several accepted references in herbal medicine (Blumenthal et al., 1998, 2000; Bruneton, 1993; Duke, 1989; Evans, 2002; Newall et al., 1996; Robbers et al., 1996; Tyler, 1993; WHO, 1999). All plant materials were authenticated by comparison with the herbarium specimens of the Faculty of Science, University of Jordan. Plant mixtures or ready-prepared decoctions, honey, and incorrectly identified plants, are excluded from the list. Medicinal plant species recommended by all herbalists were considered as most commonly used, and those recommended by more than 40% of the herbalists were considered as commonly used medicinal plants. Furthermore, the recommended uses of each plant species were ranked as high (H), medium (M), and low (L). When a particular plant species was recommended for the same use by more than 50% of the herbalists was considered “H,” between 25 and 50% as “M,” and less than 25% as “L”. Each plant specimen was given a herbarium specimen number and voucher samples were kept in the herbarium collections of both the Faculty of Agriculture and the Faculty of Pharmacy of the University of Jordan.

3. Results and discussion

More than 100 herbalists throughout the country were interviewed. The number of handled medicinal plant materials in these herbalist shops exceeds 150 plants (Abu-Irmaileh and Afifi, 2000). Twenty-seven plant species were found as the commonly recommended and sold as medicinal plants in most herbalist shops in Jordan. These plants belonged to 14 botanical families. Nine plant species can be categorized as most common (Table 1), since they are very well known in the local folk medicine and found in all herbalist shops. They are considered safe without documented adverse effects, except when misused, or not properly handled. The remaining 17 plant species which were sold, to a certain extent, less than those considered as commonly used plants. This group includes some plant species which contain toxic constituents. Among them are *Peganum harmala* and *Ricinus communis*. One of the conditions for which *Peganum harmala* is recommended, is the treatment of male impotence. For this purpose *Peganum harmala* is used in the form of a decoction. Overdose of the prepared decoction can be harmful as the plant contains many potent alkaloids such as harman, harmalan, harmalin which are

extremely toxic and may accumulate to dangerous levels in the body of the patient, since in most cases of folk medicine the recommended period of the treatment by the herbalists continues for 3–12 months (ElBahri and Chemli, 1991).

The fixed oil obtained from the seeds of *Ricinus communis* is very well known for its laxative activity. The polypeptide ricin, the toxic compound of the seeds, is a heat labile compound, and is absent in the medicinally used fixed oil. In addition to this common use of the oil by the Jordanian herbalists, oral intake of the seeds are recommended by some herbalists as a female contraceptive despite the fact that five to eight seeds may kill a mature person (Knight, 1979; Salhab et al., 1996).

Although a literature survey of well known references indicated identical uses for these groups of plants, yet our data obtained from Jordanian herbalists showed some undocumented uses for some of these commonly used plants (Table 1) (Bruneton, 1993; Boulos, 1983; Duke, 1989; Evans, 2002; Newall et al., 1996; Robbers et al., 1996; Tyler, 1993; WHO, 1999).

In general, in herbalists' shops in Jordan, medicinal herbs are sold to customers either upon the request of the patient or as recommended by the herbalist (personal observations). Our observations indicated that many herbalists promote the herbs they have in their shops regardless of the appropriateness of the illness. In some cases the herb is recommended to the patient by another patient who had a previous experience with it. The plant materials are sold as single drugs, pre-packed mixtures or as freshly mixed preparations. An additional observation was that unsuitable storage conditions for the plant materials exist in some herbalist shops. In a few cases, plant materials were stored in inadequately ventilated stores, with poor sanitary conditions where they are liable to rodent attack and some plant material could be noticed as rotted or attacked by insects. Other herbalists apply insecticides—mainly pyrethroids—on the stored plants in order to prevent the attack of the insects.

Although many herbalists claimed their expertise in folk medicine, none of them was licensed as a herbalist, and many are not well-educated in this field. An interesting observation is that over 70% of the interviewed herbalists do not have a high school degree, and a considerable percentage had no schooling at all. Hence, the scientific background of the herbalists is surely not sufficient for the diagnosis or understanding the etiology of the diseases, and prescription of the herbal medication. Our findings indicate a level of illiteracy in handling of herbal medicine. In addition to herbal medicine, few herbalists also practice cunning, spirituality, and magic. It was noticed that some practitioners are highly successful in treating conditions such as hysteria, neurotic cases, madness, and other psychic disorders using the above mentioned practices.

There are many books in the market written in Arabic language on herbal medicine by non-specialized authors,

Table 1

The uses of the most commonly and the commonly used herbs prescribed by the Jordanian herbalists

Plant name	Parts used	Recommended uses by the local herbalists ^a
Most commonly used herbs^b		
<i>Salvia triloba</i> (Labiatae)	Leaves	Headache* , flatulence** , toothache* , abdominal pain***, common cold*
<i>Matricaria aurea</i> (Compositae)	Flowers and shoot	Constipation* , allergy* , kidney stones* , hypertension* , diabetes* , gynecological disorders* , inflammations***, urinary tract infections*, abdominal pain***, flatulence*, diarrhea*, common cold***, general weakness*, nervosity*, hyperactivity*
<i>Teucrium polium</i> (Labiatae)	Shoot	Constipation* , kidney stones* , diabetes***, abdominal pain***, urinary tract inflammations*, flatulence**, indigestion*, hypertension*, obesity*
<i>Cassia senna</i> (Leguminosae)	Leaves and pods	Headache* , edema** , anurea* , constipation***, flatulence*, abdominal pain***, obesity***
<i>Pimpinella anisum</i> (Umbelliferae)	Fruits	Constipation** , arthritis* , male hypersexuality* , common cold***, abdominal pain**, indigestion*, nervosity**, hyperactivity**, flatulence**, urinary tract infections*, general weakness*
<i>Nigella sativa</i> (Ranunculaceae)	Seeds	Arthritis* , general weakness***, gynecological disorders*, lactation deficiency*, hypercholesterolemia*, common cold*, inflammations*
<i>Artemisia herba-alba</i> (Compositae)	Shoot	Constipation* , hypercholesterolemia* , Jaundice* , abdominal pains***, diabetes***, parasitic worms**, flatulence*, inflammations*, common cold*, kidney sand and stones*
<i>Achillea fragrantissima</i> (Compositae)	Shoot	Arthritis* , kidney stones* , abdominal pains***, diabetes**, flatulence*, common cold*, parasitic worms*, urinary tract infections*
<i>Origanum syriacum</i> (Labiatae)	Shoot	Abdominal pains***, common cold*, blood coagulation*, constipation*, loss of memory*, kidney sand and stones*, diabetes*
Commonly used herbs		
<i>Laurus nobilis</i> (Lauraceae)	Leaves	Hypertension* , diarrhea* , general weakness***, arthritis*, hair loss and dandruff*
<i>Zingiber officinalis</i> (Zingiberaceae)	Rhizomes	Anemia* , common cold***, abdominal pains*, indigestion*, gynecological disorders*, impotence**, general weakness*
<i>Cinnamomum ceylanicum</i> (Lauraceae)	Stem bark	Ulcer* , blood coagulation* , constipation* , kidney stones* , diabetes*, common cold*, flatulence*, nervosity*, general weakness**, post-partum conditions***
<i>Foeniculum vulgare</i> (Umbelliferae)	Fruits	Alcoholism* , common cold**, abdominal pains***, constipation**, anurea*, nervosity*
<i>Rosmarinus officinalis</i> (Labiatae)	Shoot	Obesity* , constipation* , kidney stones* , hypertension*, common cold***, abdominal pains**, ulcer**, flatulence*, toothache*, edema*, gynecological disorders*, nervosity*
<i>Hibiscus sabdariffa</i> (Malvaceae)	Calyx	Hypertension***, blood purifier***, abdominal pains*, diabetes*, arthritis*
<i>Cuminum cyminum</i> (Umbelliferae)	Fruits	Flatulence***, general weakness*
<i>Paronychia argentea</i> (Caryophyllaceae)	Shoot	Kidney sand and stones****, urinary tract infections*
<i>Artemisia vulgaris</i> (Compositae)	Shoot	Headache*, abdominal pains***, indigestion*, diabetes**, dysentery*
<i>Trigonella foenum-graecum</i> (Leguminosae)	Seeds	Blood purifier*, common cold*, indigestion*, ulcer*, diabetes**, kidney sand and stones**, lactation deficiency***, general weakness***, inflammations*, poisoning*
<i>Peganum harmala</i> (Zygophyllaceae)	Seeds	Hypertension*, blood purifier*, common cold**, back pain*, ulcer*, impotence**, nervosity*, arthritis**
<i>Melilotus officinalis</i> (Leguminosae)	Shoot	Jaundice*, impotence*, general weakness***, arthritis*
<i>Thymus vulgaris</i> (Labiatae)	Shoot	Hypertension*, blood purifier*, common cold***, abdominal pain*
<i>Zea mays</i> (Gramineae)	Corn silk	Common cold*, constipation*, kidney sand and stones**, edema**, obesity**
<i>Ruta chalepensis</i> (Rutaceae)	Shoot	Indigestion*, nervosity*, general weakness*, arthritis**
<i>Ricinus communis</i> (Euphorbiaceae)	Oil	(Seeds are used as abortive and contraceptive)* , constipation***, skin diseases and eczema***, psoriasis*
<i>Rheum ribes</i> (Polygonaceae)	Rhizomes	Hypertension*, diabetes***, kidney sand and stones*, obesity*

^a Uses in bold letter are not documented.^b Ratings of uses: *, low; **, medium; and ***, high.

who largely depend on old references in this subject for describing the plants and recommending the treatment which in turn used by the herbalists (Al-Bitar, 1874; Alantaki, 1877). The possible mistakes in the non-specialized books include the misnaming of the plant species in question.

Furthermore in the old references, medicinal plants were only known by their local common names and, based on the fact that one plant can be known by more than one local name in different locations within the country or even in the same location by different people, brings more

confusion to the recognition of the correct species. Additionally, different plants may share the same common name. For instance; *Rosemarinus officinalis* is known by two different local names: “Hasalban” and “Ikilil jabal.” The name “Hasalban” is also known for the resin produced from the plant *Boswellia carterii*. Another typical example for different plants sharing the same common name is the use of the Arabic name “Rijl El hamameh” of *Paronychia argentea* also for the less commonly used plants *Verbena officinalis* and *Anchusa officinalis*. Neither the consumer nor the herbalists are aware of the fact that these different plants have different uses. Presumably misnomination/misidentification of the intended plant could lead to mistreatment, and could subject the patient to harmful effects.

4. Conclusions

Even though traditional herbal medicine has many virtues, it seems that it has many shortcomings, especially in view of the recent rise in the trade of herbal medicine which is managed by the non-experienced herbalists. This survey showed that herbal medicine is prescribed by the herbalists symptomatically—based on signs and symptoms alone—rather than as a result of a full understanding of the underlying disease. Proper diagnosis is totally absent.

As any plant, medicinal herbs contain many chemicals that are subjected to change with changing conditions of the environment, especially storage. If not properly stored, the valuable medicinal chemicals in plants could vanish by hydrolysis, oxidation or other means, or could be changed into rather toxic compounds. Storing conditions should be inspected and controlled by the medical symptoms, hence the suggestion for the treatment should base on proper diagnosis.

In certain mild conditions, herbal medicine could be useful, independent of diagnosis, but this is unlikely in the majority of cases which require history of the patient, thorough physical examination and proper laboratory data for correct diagnosis and adequate treatment. For example *Matricaria aurea*, or *Matricaria chamomilla* can be beneficial in the treatment of mild chest pain, sore throat and common cold symptoms provided that these are not symptoms of a serious underlying disease, in which these plants are useless in curing them. Moreover, symptoms may be misleading, and the herbalists are unable to judge the actual cause of such.

Local common names are misleading as they are not exclusive authorities in the country. Also, many cultivated medicinal herbs went through different breeding procedures throughout the years with the aim of increasing the yield. Presumably, the new cultivated and hybridized strains of the same species may not correspond to the plants described originally in the old books.

Despite these shortcomings many herbalists in Jordan rely on these books which could be the source in the differences among the documented and recommended uses of the commonly used medicinal plants. In addition, vague description of the preparation methods accompanied the herbalists' recommendations.

Such findings support the necessity of proper handling of herbal medicine which requires proper regulation and licensing. WHO regulations (WHO, 1989, 1991, 1993) can be considered a good basis for such regulations.

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