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PERCEPTION OF IRAQI PRIMARY HEALTH CARE PROVIDERS ABOUT HERBS IN PRACTICE

***Dr.Lujain Anwar Alkhazrajy, Dr.Huda Adnan Habib, Dr. Zena Ismail Alsudani**

*Assistant. Professor/ corresponding author/family medicine specialist /quality assurance & academic performance unit/ Alkindy college of medicine /university of Baghdad

** Assistant. Professor/ family medicine specialist /community & family medicine department/ Alkindy college of medicine /university of Baghdad

***General practitioner/ Ministry of health – Iraq / Alkarkh primary health care district

ABSTRACT: *Objectives: To study the level of knowledge , attitude and practice of primary health care providers about herbs , and their relation with certain demographic variables Methods : A cross sectional study was conducted using questionnaire administered to Health Care providers at ten Primary Health Care Centers in Baghdad. Results: Four handed participants were recruited, the most common source of knowledge in the medical group were books , while the paramedical group were getting their knowledge mostly from media, attitude of the medical group was neutral (53%) while among paramedical group attitude was positive (65%), the most common purposes for using herbs were energy boosting and preventive. Conclusion: healthcare providers in Baghdad have positive attitude toward herbs, but their knowledge about it is poor; and this is more evident in the paramedical group especially those with lower educational level. Those with higher knowledge about herbs had higher attitudes toward it.*

KEYWORDS: Herbal Supplements, Complementary and Alternative Medicine, Knowledge, Beliefs

INTRODUCTION

The term "herb" has more than one definition. Botanists describe an herb as a small, seed bearing plant with fleshy, rather than woody, parts .In addition to herbaceous perennials, herbs include trees, shrubs, annuals, vines, and more primitive plants, such as ferns, mosses, algae, lichens, and fungi. They [herbs] are valued for their flavor, fragrance, medicinal and healthful qualities, economic and industrial uses, pesticidal properties, and coloring materials .(1)

Herbal medicine is also called botanical medicine, phytomedicine ,Herbalism, traditional medicine or folk medicine, and may also be known as medical herbalism, herbology, herblore, and phytotherapy. based on the use of plants and plant extracts for medicinal purposes. The scope of herbal medicine is sometimes extended to include fungal and bee products, as well as minerals, shells and certain animal parts.(2)

Herbal remedies and alternative medicines are used throughout the world and in the past herbs often represented the original sources of most drugs. (3–5) The plant kingdom has provided an endless source of medicinal plants first used in their crude forms as herbal teas, syrups, infusions, ointments, liniments and powders. Evidence of use of herbal remedies goes back some 60 000 years to a burial site in a cave in northern Iraq, which was uncovered in 1960. (6) An analysis of the soil around the human bones revealed extraordinary quantities of plant pollen of eight species. Seven of these are medicinal plants and still used throughout the herbal world . (7)

With the development of chemistry and Western medicine, the active substances of many species have been isolated and in some cases duplicated in the form of synthetic drugs. (8) Nevertheless, the synthetic preparation of some drugs is either unknown or economically impractical. For this reason, scientists continue to search for and test little-known plants and conserve those whose medicinal properties have become crucial in the fight against diseases. Herbal-derived substances remain the basis for a large proportion of the commercial medications used today for the treatment of heart disease, high blood pressure, pain, asthma and other illnesses. Today a great number of modern drugs are still derived from natural sources, and aproximality25% of all prescriptions contain one or more active ingredients from plants. Arab traditional medicine, which forms the basis for alternative and herbal medicine in use today. (9)

Recently, the World Health Organization estimated that 80% of people worldwide rely on herbal medicines for some part of their primary health care. In Germany, about 600 - 700 plant-based medicines are available and are prescribed by some 70% of German physicians. (10)

The health care system in Saudi Arabia, as in most Middle East countries, is primarily based on conventional medicine. However, traditional local remedies continue to be very popular among Saudis (11) .It has been reported that 24% of patients attending a health centre in Saudi Arabia had used a local alternative remedy. Furthermore, the use of local herbal products reached 17%–33% among Saudi diabetics, and up to 73% of users did not inform their health care providers regarding their use of herbs. (12)

In Iraq, there are the National Commission for the selection of herbal medicine was founded in 2000.(13). Despite the high prevalence of public use of herbs, fewer than half of patients who use herbs typically discuss it with their clinician (14) ; in part, this is because health care professionals do not consistently inquire about or record patients' use of herbal drugs, and in part because patients do not perceive health care professionals as particularly knowledgeable about herbal drugs , herbs can help treat a variety of conditions and in some cases may have fewer side effects than some conventional medications. But because they are unregulated, herbal products are often mislabeled and may contain additives and contaminants that aren't' t listed on the label. Some herbs may cause allergic reactions, high blood pressure ,renal toxicity. (14)

REVIEW OF LITERATURE

Herb: The word herb (sometimes referred to as botanical) has several different meanings depending on the perspective:

- In commercial terms - herb generally refers to plants used for culinary purposes. Additionally the terminology differentiates Temperate Zone plants from tropical and sub-tropical plants (i.e., spices).
- In horticultural terms - herb refers to "herbaceous," which describes the appearance of the plant (i.e., a non-woody, vascular plant).
- In taxonomic terms - herb generally refers to the aboveground parts or the aerial parts (i.e., the flower, leaf, and stem).
- In terms of herbal medicine - herb refers to plants used in various forms or preparations, valued for their therapeutic benefits, and sold as dietary supplements in the U.S. marketplace.(15)

The Development of Arab Medicine

The history of Arab medicine can be conveniently divided into three phases, characterized briefly as follows:

Phase I, Greekinto Arab; Phase II, Arab; and Phase III, Arab into Latin. The first phase was the period of translation of Greek scientific and philosophical works into Arabic. This started in the eighth century AC when Islam covered nearly two-thirds of the known world and contacts with the West were already established through Byzantium, Spain and Sicily. The Khalifs in Baghdad became aware of what was to be learned from Greek science, and in the reign of al-Ma'mun an institution was founded for this purpose, 'The House of Wisdom'. The most famous of all the translators was Hunayn Ibn-Is'haq, a Nestorian Christian who became court physician to the Khalif al- Mutawakkil. He and his team translated a large number of medical works of Hippocrates and Galen, as well as philosophical works by Plato and Aristotle and mathematical works of Euclid and Archimedes. Hospitals and medical schools flourished during that period, first in Baghdad and later in the main provincial cities. After the first period of translation, when the chief works of Galen and Hippocrates were made available in Arabic, Christians lost their monopoly of medicine and several Muslims reached such a stature in medical science that they stood far above their immediate predecessors and were roughly on a level with the greatest of the Greeks. Some notable scholars of the science of Arab medicine are asfollows:

Al Tabbari (838–870), Al Razi (Rhazes) (846–930), Al Zahrawi (930–1013), Avicenna (980–1037), Ibn Al Haitham (960–1040), Ibn Al Nafees (1213–1288) and Ibn Khaldun (1332–1395). The third phase of Arab medicine started in the twelfth century when European scholars interested in science and philosophy came to appreciate how much they had to learn from the Arabs, and set about studying Arab works in these disciplines and translating the chief of them into Latin. Probably the most outstanding writer on medicine in Arabic was Ibn-Sina or Avicenna as he was called in the West (dated 1037). Like Al Razi, he wrote on many subjects and was accounted to have been greater as a philosopher than as a physician. Nevertheless, his vast 'Canon of Medicine' is rightly acclaimed as the 'culmination and masterpiece of Arab systematization'. It was translated into Latin in the twelfth century and continued to dominate the teaching of medicine in Europe at least until the end of the sixteenth century. There were 16 editions of it in the fifteenth century, one being in Hebrew, 20 editions in the sixteenth century and several more in the seventeenth century. Medical Innovations Introduced by Arab Physicians Medical innovations introduced by Arab (Muslim) physicians include discovery of the immune system and introduction of microbiological science. Furthermore, Avicenna was the first to use ice to treat fever diseases and separate medicine from pharmacological science (this fact resulted in a huge development in pharmaceutical science), Arab physicians introduced the use of test animals. (16-18)

Arab physicians combined different sciences such as chemistry, medicine, pharmacology, agriculture and plant science in order to develop new aspects in their dealings with patients. In surgery, Al Zahrawi was the first to develop various surgical equipments and tools, some of which were unique to surgery for women. (16,17,19) Later on, Ibn Al Haitham improved eye surgery and studied the process of sight for the first time. Concerning herbal medicine, Arab physicians introduced many new aspects and upgraded the knowledge about herbs and their potential medical efficacy and safety. In brief:

(i) Arab chemists such as Ibn Hayan and others were able to extract different anesthetic compounds from local herbs for local or general anesthetization. Among the herbs used for extractions were Hyoscyamous aureus, Opium and Cannabis sativa. (16,17)
(ii) In Andalusia (Spain), Arab physicians, botanists and pharmacologists led by Ibn AlBitar were able to introduce around 350 new plant species as medicinal herbs for treating human diseases (Ibn AlBitar, 1874). (16,17,20,21)
(iii) Abu AlAbbas and other herbalists published several books and dictionaries on the use of medicinal plants describing each plant species, the plant parts used, the preparation procedure for each remedy and the treatment procedure of certain diseases. (16,17,20,21)
(iv) Avicenna published several books such as 'Alkanoon Fi Altib' (The roles of Medicine) in addition to Rhazes book 'AlHawy' (The Comprehensive), which were translated into different languages. These two books were the main literature in medicine a few centuries ago and are still in use in different libraries in Europe. (18,19)
(v) One of the main niches of Arab medicine in the fourteenth century was Daoud AlAntaki, an Arab physician who lived in Egypt and used different herbs for treating patients; he also published a book on medicinal herbs summarizing the know-how of his predecessors.(18-21)

Safety of Herbal Remedies
Parallel with the development of pharmacy and pharmacology in the Arab world, there was also a similar development in alchemy and toxicology. Origins of these developments date back to the Greeks and Indians as well as to the empiric knowledge of the indigenous population. Poisons are discussed and how 476 Tradition of Arab herbal medicine they can be detected by sight, touch, taste or by the toxic symptoms which they cause. Descriptions are given for poisoned drinks, foods, clothes, carpets, beds, skin lotions and eye salves, as well as narcotics and universal antidotes. Important example is the book on 'Poisons and their Antidotes' by the famous Arab alchemist, Abu Musa Jabir ben Hayyan. (22,23)

Culinary Herbs Some culinary herbs contain potentially toxic constituents. The safe use of these herbs is ensured by limiting the level of constituent permitted in a food product to a level not considered to represent a health hazard.(24)

Herb-Drug Interactions
Limited information is available regarding interactions between herbal products and conventional medicines. However, awareness of this issue is increasing and the potential for drug-herb interactions has been discussed. (25)Concerns have been raised in the literature about herbal medicines interfering with breast cancer treatment and potential interactions between herbal products and cardiac drugs. (26) The emergence of significant problems associated with the ingestion of grapefruit juice concurrently with certain medicines has emphasized the fact that clinically relevant interactions between drugs and natural products (both herbs and foods) may occur.As with conventional drug interactions, herb-drug interactions may be pharmacodynamics or pharmacokinetic. Pharmacodynamics interactions could result when a herbal drug and a conventional drug have similar or antagonistic pharmacological effects or adverse effects.(27)

These interactions are usually predictable from a knowledge of the pharmacology of the interacting herb and drug. Pharmacokinetic interactions could occur when the herb alters the absorption, distribution, metabolism or excretion of the drug. They are not easily predicted. As with all potential drug interactions there are particular concerns when patients are

stabilized on conventional medicines such as warfarin, digoxin, anticonvulsants (e.g. phenytoin) and cyclosporine known to have a narrow therapeutic window. [28]

Efficacy of Herbal Remedies:

Arabs in the Baghdad region were the first in history (during the eighth century) to separate medicine from pharmacological science. At that point, patients started to deal with experts in the pharmaceutical sciences working on the extraction and preparation of remedies, and not with physicians who were now responsible for the diagnosis of diseases and follow-up with the applied treatments. [16,17,29].According to recent surveys, the Middle Eastern region is covered with more than 2600 plant species of which more than 700 are noted for their use as medicinal herbs or as botanical pesticides. Currently, fewer than 200–250 plant species are still in use in Arab traditional medicine for the treatment of various diseases [23,29– 31].The number of herbal-derived substances that are in use as traditional compounds is about 286. [30] The most recent survey conducted on the potential uses of plant species from the coastal Mediterranean region in Egypt recorded 230 species belonging to eight families. [31–33]

PRECAUTIONS IN SPECIFIC PATIENT GROUPS

Pregnant/Breast-feeding mothers

Few conventional medicines have been established as safe to take during pregnancy and it is generally recognized that no medicine should be taken unless the benefit to the mother outweighs any possible risk to the fetus.[34] .This rule should also be applied to herbal medicinal products. However, herbal products are often promoted to the public as being "natural" and completely "safe" alternatives to conventional medicines.

Examples of some herbal ingredients that specifically should be avoided or used with caution during pregnancy:

i)**Volatile Oils**

Many herbs are traditionally reputed to be abortifacient and for some this reputation can be attributed to their volatile oil component.[35] A number of volatile oils are irritant to the genito-urinary tract if ingested and may induce uterine contractions.[36]. Herbs that contain irritant volatile oils include ground ivy, juniper, parsley, pennyroyal, sage, tansy and yarrow. Some of these oils contain the terpenoid constituent, thujone, which is known to be abortifacient. Pennyroyal oil also contains the hepatotoxic terpenoid constituent, pulegone. A case of liver failure in a woman who ingested pennyroyal oil as an abortifacient has been documented. [37]

ii)Uteroactivity

A stimulant or spasmolytic action on uterine muscle has been documented for some herbal ingredients including blue cohosh, burdock, fenugreek, golden seal, hawthorn, Jamaica dogwood, motherwort, nettle, raspberry, and vervain.[37]

iii)Herbal Teas

Increased awareness of the harmful effects associated with excessive tea and coffee consumption has prompted many individuals to switch to herbal teas. Whilst some herbal teas may offer pleasant alternatives to tea and coffee, some contain pharmacologically active herbal ingredients, which may have unpredictable effects depending on the quantity of tea consumed and strength of the brew. [38]. Some herbal teas contain laxative herbal ingredients such as senna, frangula, and cascara. In general stimulant laxative preparations are not recommended during pregnancy and the use of unstandardized laxative preparations is

particularly unsuitable. [39].A case of hepatotoxicity in a newborn baby has been documented in which the mother consumed a herbal tea during pregnancy as an expectorant. Following analysis the herbal tea was reported to contain pyrrolizidine alkaloids which are known to be hepatotoxic.

Breast-feeding mothers

A drug substance taken by a breast-feeding mother presents a hazard if it is transferred to the breast milk in pharmacologically or toxicologically significant amounts. Limited information is available regarding the safety of conventional medicines taken during breast-feeding. Much less information exists for herbal ingredients, and generally the use of herbal remedies is not recommended during lactation.[40]

Pediatric Use

Herbal remedies have traditionally been used to treat both adults and children. Herbal remedies may offer a milder alternative to some conventional medicines, although the suitability of a herbal remedy needs to be considered with respect to quality, safety and efficacy.[41]. Herbal remedies should be used with caution in children and medical advice should be sought if in doubt. Chamomile is a popular remedy used to treat teething pains in babies. However, chamomile is known to contain allergenic sesquiterpene lactones and should therefore be used with caution. The administration of herbal teas to children needs to be considered carefully and professional advice may be needed. [41]

Other patient groups:

a) **Elderly**

A recent review has considered the evidence available on the use of a number of herbal medicinal products by the elderly (St John's Wort, valerian, ginkgo, horse chestnut, saw palmetto and yohimbe).[42]

Whilst the treatments may offer considerable benefits for a range of conditions the review raised the need for caution when herbal medicinal products are used by the elderly particularly with regard to potential drug-herb interactions and possible side-effects.[43]

b)**Patients with cardiovascular disease**

Concerns have been raised about herbal medicinal products for cardiovascular disease, in particular, the lack of scientific assessment and the potential for toxic effects and major drug-herb interactions.[44]

c) **Preoperative use**

The need for patients to discontinue herbal medicinal products prior to surgery has recently been proposed. The authors considered eight commonly used herbal medicinal products (Echinacea, ephedra, garlic, ginkgo, ginseng, kava, St John's Wort, valerian). [45].On the evidence available they concluded that the potential existed for direct pharmacological effects, pharmacodynamics interactions and pharmacokinetic interactions. The need for physicians to have a clear understanding of the herbal medicinal products being used by patients and to take a detailed history was highlighted.[45]

The American Society of Anesthesiologists (ASA) has advised patients to tell their doctor if they are taking herbal products before surgery and has reported that a number of anesthesiologists have reported significant changes in heart rate or blood pressure in some

patients who have been taking herbal medicinal products including St John's Wort, ginkgo and ginseng. (46)

SOME DEFINITIONS IN HERBAL MEDICINE

Herbal materials
Herbal materials include, in addition to herbs, fresh juices, gums, fixed oils, essential oils, resins and dry powders of herbs. In some countries, these materials may be processed by various local procedures, such as steaming, roasting, or stirbaking with honey, alcoholic beverages or other materials.(38)

Phytochemistry:
The study of plant chemistry, including the identification, isolation, analysis, and characterization of plant constituents, and determination of the chemical structures of plant constituents.(47)

Pharmaceutical biology:
The field of research concerned with the extraction and development of biogenic drugs from plants and other living organisms as well as the processing and application of these drugs. (47)

Phytopharmacology:
The study of the uptake, distribution, and effect of herbal preparations and of their elimination from the body .(47)

Species, genus, family:
Taxonomic terms classifying a plant. A genus may include one or more species, and a family may include one or more gena.(47)

Dietary Supplements:
A dietary supplement is a product (other than tobacco) taken by mouth that contains a "dietary ingredient" intended to supplement diet. Dietary ingredients may include vitamins, minerals, herbs or other botanicals, a and metabolites. Dietary supplements come in many forms, including extracts, concentrates, tablets, capsules, gel caps,
liquids and powders.(48)

Complementary/alternative medicine (CAM)
The terms "complementary medicine" or "alternative medicine" are used inter-changeably with traditional medicine in some countries. They refer to a broad set of health care practices that are not part of that country's own tradition and are not integrated into the dominant health care system.(49)**.**Complementary and Alternative Medicine (CAM), including herbal medicine, are popular in the general population worldwide. Parallel to the increasing interest in 'modern' CAM therapies and the historical importance of Arab medicine, there is also a similar trend in research activities dealing with the efficacy and safety of medicinal plants in our region.(49)

Overview of the Biodiversity Status in Iraq:
The complex mosaic of species information in Iraq has been investigated by many individuals through the last 100 years with major contributions from a variety of both

amateur and professional botanists and zoologists. These have included, but are not limited to:

* Zohary (1946), Rechinger (1964) and Townsend & Guest (1966-1985) for Plants· [52].Plant species in Iraq, which were partially treated in the incomplete Flora of Iraq that was released between the 1960s and 1980s through a joint effort by the Ministry of Agriculture (IMOA) and Kew Gardens in the UK, are now subject to renewed research. Key Biodiversity Area surveys were primarily focused on macrophytes of the Marshland areas but when surveys began in Kurdistan, Iraq in 2007, it began collection of terrestrial plants in this botanically rich area of Iraq. They developed a draft checklist of species for Iraq, with no attempt to update the taxonomy, of over 4500 plants with a secondary list of approximately 195 endemic Iraqi species (Knees et al 2009).[52. Iraq was responsible for exporting important grain crops to the world but in addition, exported numerous invasive weed species as well. The on-line Global Invasive Species Database provides a list of 25 species of micro-organisms, herbs, grasses, shrubs, or trees in Iraq that are either invasive to Iraq (13 species) or are native to Iraq and are invasive of other regions (22 species) as well as two invasive species for whom the bio-status is not yet specified. These numbers are likely low estimates and with future study and survey efforts, more information on invasive species to and from Iraq will be discovered. [52]

A scientific research project on the Iraqi diabetic patients was undertaken , one of the study result was about treatment of DM patients with melatonin and zinc improves glycemic control in the fasting and post-prandial state with significant reduction in HbA_{1c} and elevation of insulin secretion. Meanwhile, lipid profile was significantly improved with significant decrease in oxidative stress state. Renal function was significantly improved and hepatic function did not altered as a result of treatment.[53]

SUBJECTS AND METHODS

Design& Sample*:* This cross sectional study was conducted from January through June 2012. On health care providers including medical staff (like doctors, dentists and pharmacists) and paramedical staff.Four hundred participants were included in the study; their ages ranging from 20-55 years (mean 37.8 ± 7.08), 232 (57.89%) participants were female and the other 168(42.11%) were male. Regarding the occupation and educational level, the participants were divided the into two groups, medical group included 222 participants (55.5 %), of whom there were 34 specialists doctors, 64 general practitioners, 96 dentists, and 28 pharmacists; while in the paramedical group there were 178 participants (44.5 %), of whom there were 94 highly educated (diploma and bachelor), 68 secondary school graduates, and 16 intermediary school graduates.

The study was conducted in ten PHCCs of family medicine in Baghdad at both districts (Alkarkh, Alrusafa) selected in convenient methods:

1-Al-Mansor PHCC/Alkarkh
2-Al-Salam PHCC/Alkarkh
3-Al-Salam Al-sakani PHCC/Alkarkh
4-Abed-Saheb Dakhel PHCC/Alkarkh
5-Al-huria PHCC/Alkarkh
6-Bab_Almuadhem PHCC/Alrusafa
7-Al-Mustanseria PHCC/Alrusafa
8- Hay Or PHCC/Alrusafa
9-Al seleakh PHCC/Alrusafa
10-Al-Zahraa PHCC/Alkarkh

The following assumption was used to calculate the sample size required for the study:

$$n = \frac{(Z_{\alpha/2})^2 (p (1 - p))}{E^2}$$

$$\frac{(1.96)^2\,(.5)(.5)}{(0.05)^2} = 384$$

*Where n=number to sample.
Z^2= $(1.96)^2$for 95% confidence (i.e. α= 0.05).
P = "best guess" for prevalence (e.g. ±0.50).
e = maximum tolerable error for the prevalence estimate (e.g.±0.05)[54]

Data collection procedure*:*
Data were collected using a self-administered (twenty items) questionnaire, validated and evaluated by three professors of community medicine, from three medical colleges (Baghdad, Al-Kindy, and Al-Nahrain), as referred to in the (appendix no.4). And questionnaire was filled by direct interview and used Arabic language for the paramedical group &English language for the medical group . (appendix no. 1). The questionnaire included:
General demographic information like: Age, sex, occupation, and educational level. ***Knowledge*** about herbal medicine was determined by using five multiple-choice questions. Each correct question corresponded to 2 point score was adapted, and so there was a total of 10 points for the five questions. The knowledge score was divided into three degree (K1=0-2),(K2=4-6)&(K3=8-10) according to the number of right answers that the participants answered . ***Attitudes*** were measured using three items rated on a three-point Likert scale as (1) agree (2) neutral and (3) disagree. ***Likert scale:*** Scale primarily used in questionnaires to obtain participants' preferences or degree of agreement with a statement or set of statements. Likert scales are a non-comparative scaling technique and are uni-dimensional (only measure a single trait) in nature. Respondents are asked to indicate their level of agreement with a given statement by way of an ordinal scale.(**Appendix 2)**

Using this three-point scale for seven questions, we arbitrarily set the maximum score for each respondent at 21 and the minimum at seven. We decided that a high score was indicative of positive attitude while a low score would be indicative of a negative attitude

So Score from (7-11) ⟶ Negative attitude
Score from (12-16) ⟶ Neutral attitude
Score from (17-21) ⟶ Positive attitude

Practice was assessed by whether they recommend, prescribe, ask about, or personally used HM.
Statistical Analysis:
****Descriptive statistics*:** frequency Tables (numbers, & percentages)
****Analytic statistics:***
Minitab (Student Version 12 and Professional Version 13) and IBM SPSS statistics version 19. Chi-square test was used to find any association between variables, fisher-exact test was used for variables with expected values <5, P-value <0.05 considered statistically significant.

***Ethical Considerations**:*

- Oral consent was obtained by asking every participant if they want to answer the questions of the questionnaire after brief explanation of the general purpose of the study and it is objectives.
- Permission was obtained from the Arabic board for medical specialization by an Administrative order directed to PHCCs to facilitate the task of obtaining the information from participants ز

RESULTS

Four hundred participants were included in the study; their ages were ranging from 20-55 years (mean 37.8 ± 7.08).232 (57.89%) participants were female and the other 168(42.11%) were male**.** Regarding the occupation and educational level, divided into two groups, the medical group (55.5 %), & the paramedical group there (44.5 %), the knowledge score of the participants, the result shows that the medical group had higher knowledge scores than paramedical group as shown in figure no. 2. In the medical group, there was no significant association between the educational level & the knowledge, while in paramedical group; the knowledge score was significantly higher in those with higher educational levels as shown in table no.1. The older participants had significantly higher knowledge scores, While there was no significant relationship between gender and knowledge of all participants, as shown in table no.2.

The most common sources of information's about herbs in the medical group was books(32%), TV and radio (23.4%), internet (23%), other doctors (18.5%) and the least source was from the relatives (3.2%), while those in the paramedical group were learning mostly from TV &Radio (32%), books and magazines (24.7%), internet (20.8%), doctors (13.5%), and relatives(9%) fig.no.3. The assessment of the attitude of the participants towards the herbal medicine result the following (Tables no. 3,4).Most of the participants (medical and paramedical) believe that Herbal medicines are beneficial in healthcare management & don't think that the use of herbal medicines should be limited only to patients who have failed conventional therapy, also believe that herbal medicine can be used in prophylaxis in certain conditions. Strongly agree that government should take more initiatives to promote HM. & think that continuing education in herbal medicines is important, most of the medical participants think that herbal medicines are not safe and can be injurious to the health, while the paramedical participants were almost neutral about this, most of the paramedical participants think that it'll be convenient to the patient if they prescribe herbal medicine, while the medical participants were almost neutral about this.

The attitude among medical participants regarding HM was mostly neutral (53%) with 43% had a positive attitude as shown in Fig.3; while among paramedical participants the attitude regarding HM was mostly positive (65%) , and 32% had a neutral attitude, as shown in Fig.4&5 .By calculating the relationship between the attitude and the knowledge of the participants the result was those with higher knowledge scores about herbal medicine have significantly higher attitude toward it (**P-value= 0.006**), as shown in table no. 5.
The female participants had significantly higher attitudes toward herbal medicine than males, as shown in table no.6. In both groups, medical & paramedical there was no significant association between the educational level & the attitude toward herbal medicine as shown in table 7

The assessment of the practice of the participants towards the herbs result the following (tables no. 8&9),63.1% of medical participants had previously recommended the use of herbal medicines and 50.9% actually prescribed them, while 70.8% of the paramedical participants had previously recommend the use of herbal medicines and 55.6% actually prescribed them to patients.Only 50.5% of medical participants ask their patients about the use of herbal medicine when taking drug history, while 60.7% of the paramedical participants do so. When herbal and traditional medicines cost the same, 34.7% of medical and 45.3% of the paramedical participants prefer herbal medicines.62.6% of medical and 75.8% of paramedical participants had previously personally used herbal medicines.64.4% of medical and 58.4% of paramedical participants had studied herbs. By assessing the relation of the use of herbal medicines with each of the age, gender, knowledge, and attitude of the participants towards herbal medicine the result was that female participants used herbal medicines significantly more than males (**P-value < 0.001**), and that those with higher attitude towards herbal medicines actually use them significantly more than those with lower attitude (**P-value = 0.01**); while there was no significant correlation between each of the age and knowledge of the participants (table no.10)

The most common purpose of use of herbs among medical participants was energy boostering (32.4%), preventive (24.3%) and curative (22.5%); while in the paramedical group the most common purpose was as a preventive (30.9%), energy boostering (23%), and curative (20.2%). (as shown in fig. no. 6).

DISCUSSION

A lot of studies performed previously in other countries report poor knowledge of the healthcare providers about HM[31-37], and although it is impossible to compare the knowledge scores in our study with those studies (simply because of different questionnaires used); it is clear that the knowledge of our participants is generally insufficient to provide safe and useful recommendations to the general population (only about 1/3 of medical and 1/7 of paramedical groups reached the K3 score) despite their being the first line to face the patients' demand for information.

Relation between educational level & knowledge of participants *:*

The knowledge scores of the medical group were significantly more than that of the paramedical (figure no. 1), and the scores of the highly educated paramedical participants were also significantly higher than scores of the intermediary and secondary graduates ,these differences may be due to the lack of availability of valid references about this wide subject in Arabic language, and the same reason may explain that most information of the paramedical participants were acquired from TV and radios rather than books and magazines.

In the medical group, the educational level had no significant effect on the knowledge about HM, and they may reflect the poverty of formal coverage of this subject by the Iraqi medical schools even for the higher degrees; and the same reason may explain that the older participants had significantly higher knowledge scores than the younger colleagues ,as the older healthcare provider had already longer time to gain information from the non-formal sources like TV and internet.

Attitudes of participants:

Regarding the attitude toward herbal medicine, both groups had more positive than negative attitude (43% vs. 4% for medical group and 65% vs. 3% for paramedical), and this is more or less similar to the high attitude toward HM present generally among general practitioners in

USA and Canada [38] and in Saudi Arabia [39]. The attitude of the paramedical healthcare providers is more positive than the attitude of the doctors (figures 5 & 6), this may be due to the herbal medicines' being with no regulating rules for their use in Iraq that on one hand, and make the doctors more Fabian of the legal problems that may arise from the unpredicted adverse effects of them on the other hand. However, similar results were found in USA and Canada by Levine et al., 2003[40] and Montbriand, 2000[41].

Regarding gender, the higher attitude of female healthcare providers in our study as well as in three previous studies in USA and Canada[42-44], may be explained by the higher probability that they use HM themselves. The healthcare professionals with higher knowledge about HM had higher attitude toward herbal medicine, and this may reflect that the vigilance about the adverse effect and the uncertainty of the efficacy of herbal remedies ,that may be the causes of the non-positive attitude are due to the lack of sufficient knowledge about HM and vice versa.

Practice of herbs by the participants :

A high percentage of the participants recommend the use of herbal medicine, and most of them already used at least one type of them in their life, but fewer participants had actually prescribed them to their patients ,and this again may be due to the lack of sufficient information about them and to the vigilance of legal problems that may arise because of their adverse effects. Similarly in Saudi Arabia, most of general practitioners reported that they already used HM for themselves or their families, and in spite of that; only 14% of them refer their patients to HM practitioners.Most of the participants do not recommend herbal remedies if they cost the same as traditional medicines, and this reflect that the poor economic status of the patients aids the choice of the available cheaper herbal remedies rather than traditional medicines by the healthcare providers.

Only about half of the participants in this study ask their patients about herbal medicine when reviewing their drug history, this may be caused by the high patient/doctor ratio in Iraq (1500 in 2009)[45]compared to that of developed countries (e.g. 300 in France, 390 in USA, and 440 great Britain), and in the middle east (e.g. 450 in Qatar, 490 in Jordan, and 750 in Saudi Arabia, Turkey and Oman)[46], and another cause may be again the lack of sufficient knowledge about the adverse effects of herbal remedies that may give a high index of suspicion about them.

Female participants significantly used herbal medicines for themselves more than male colleagues (table no.12), this is evident also by many other previous studies e.g. in Bahrain[47], Canada[48], and USA[50], and many explanations were suggested for that; some believe that females are more willing to try HM because they are more conscious of their health, serious , and others state that males were more likely to want a ‘quick fix’ to a health care problem[50], other suggested explanation attribute that to the difference in the cultural context, roles, and health beliefs in the developing countries between the genders, and actually this subject deserve further attention.

The most common purposes for prescribing herbal medicines by the participants of our study was energy boostering, preventive, curative, and cosmetic reasons .In USA; the commonest indications were for anxiety, pain, insomnia, and depression, whereas in Canada; they would recommend HM for musculoskeletal problems, chronic pain, and chronic illnesses in general[50]. These differences may be attributed simply to the different prevalence of the

corresponding health problems like anxiety in western world and infections in the developing world.

Most of the participants (medical and paramedical) think that continuing education in herbal medicines is important, and strongly agree that government should take more initiatives to promote HM, and also more than 60% of them had searched some information to know more about this subject, Saudi doctors for example have the same attitude[50], and this may be due to the feeling of the healthcare providers that their knowledge about this subject cannot fit its importance because of the popular positive attitude and unpredicted use of herbal medicine, and the possible potential benefits of them that may help facing important healthcare problems.

Disclosure of interest

Trends nowadays in Iraq are directed toward the use of herb by public as a treatment because it is believed that herbs as a natural product carry less side effect than medication , on the other hand primary health care providers never asked patients about herb consumption during history taking ,which may lead to overcome some side effects resulted from additive act of the herbs to the prescribed medication. Applying such research through a light on the knowledge of primary care providers about herbs & may draw attention of importance of this knowledge in providing primary care.

CONCLUSIONS

Although the healthcare providers in Baghdad have positive attitude toward herbal medicine, their knowledge about it is poor; and this is more evident in the paramedical group especially those with lower educational levels .There may be insufficient knowledge about this subject gained by the healthcare providers during their different educational stages or even after that (by the continuous medical education programs), and that's why their knowledge was acquired mostly from invalid sources. Most of the participants agree that they need to learn more about that. Those with higher knowledge about CAM had higher attitudes toward it, but generally the practice in the field is not parallel to the attitude, may be because the absence of rules that regulate the use of CAM.

RECOMMENDATIONS

1- Reviewing and boosting the information about herbs(HDs) that is included in the medical and nursing colleges, institutes, and schools (should establish centers and databases) that include local herbs to provide guidance for evidence based HM practice. This will help physicians practicing in IRAQ to make safe and evidence-based decisions during encounter with their patients.
2- Enhancement of the continuous medical education programs especially for this subject.
3- Planning for creation of rules and legislations to regulate the use of herbs according to fixed basis to protect population from quackery under the cover of herbs, and to protect registered herbs providers from legal problems.
4- Future researches on larger sample are needed to be conducted in Iraq , to explore the hidden aspects about HM.
5- Further research is needed to determine the most cost effective educational strategies for diverse population .

6- we are advocating the medical doctors to increase their attempts to ask their patients about their use of herbs.
7- Provide some HDs ,that are of well-known efficacy &side effects to be prescribed at the PHCCs.

REFERENCES:

1. Citation: Bown, Deni. The Herb Society of America New Encyclopedia of Herbs and Their Uses. New York: Dorling Kindersley, 2001. p. 18.
2. Byrnes JP. The development of decision-making. Journal of Adolescent Health. 2002;31(6 Suppl):208–15.

3. Cooper EL. Drug discovery, CAM and natural products. Evid Based Complement Altern Med 2004;1:215–7.
4. Cooper EL. CAM, eCAM, bioprospecting: the 21st century pyramid. Evid Based Complement Altern Med 2005;2:125–7.
5. Tsao JCI, Zeltzer LK. Complementary and alternative medicine approaches for pediatric pain: a review of the state-of-the-science. Evid Based Complement Altern Med 2005;2:149–59.
6. Solecki R. Shanidar IV, a Neanderthal flower burial in Northern Iraq. Science 1975;190:880–1.
7. Bensky D, Gamble A. Chinese Herbal Medicine: Materia Medica, Revised edition. Seattle, WA: Eastland Press, Inc., 1993, 13–7.
8. Farnsworth NR, Morris RW. Higher plants—the sleeping giant of drug development. Am J Pharm Sci Support Public Health 1976;148: 46–52.
9. Bacher W. Scham als Name Palastinas. Jew Q Rev 1906;18:564 5.
10. WHO traditional medicine strategy 2002–2005. Geneva: WHO. Wilson KM, Klein JD: Adolescents' use of complementary and alternative medicine. Ambulatory Pediatrics. 2002b;2(2):104–110.
11. Al-Awamy BH: Evaluation of commonly used tribal and traditional remedies in Saudi Arabia. Saudi Medical Journal, 2001, 22(12):1065–1068.
12. Ajaji N et al: Prevalence of utilization of native medicine among primary care consumers. Saudi Medical Journal, 1998, 19:551–554.
13. Iraqi Ministry Of Health, National Committee for the selection of drugs. Personal communication with the pharmacist Haephaa Khedr Bunny. 2012.
14. Al-Rowais NA: Herbal medicine in the treatment of diabetes mellitus. Saudi Medical Journal, 2002, 23(11):1327–1331.
15. World Health Organization. Regulatory Situation of Herbal Medicines: a Worldwide Review. WHO/TRM/98.1. Geneva, 1998.
16. Cassileth BR: "Evaluating complementary and alternative therapies for cancer patients". CA Cancer J Clin 49 (6): 362–75. 1999.
17. A. R. Nedrow,M.Heitkemper, M. Frenkel, D.Mann, P.Wayne, and E. Hughes. "Collaborations between allopathic and complementary and alternative medicine health professionals:
four initiatives," Academic Medicine, vol. 82, no. 10, pp. 962– 966, 2007.
18. N. J. Pearson and M. A. Chesney: "The CAM Education Program of the National Center for Complementary and Alternative Medicine: an overview," Academic Medicine, vol. 82, no. 10, pp. 921–926, 2007.

19. AlTurkimany JOA. AlMoatamad Fi Aladweah Almofradah (The source of the single Pharmaceuticals). Revised by AlSaka M. Beirut, Lebanon: Dar AlKalam Publishing, 1993 (in Arabic).
20. Ahmed MS, Honda G, Miki W. Herb Drugs and Herbalists in the Middle East, Tokyo, Japan. 1979;8.
21. Honda G, Miki W, Saito M. Herb drugs and herbalists in Syria and Yemen. Studies cultures Islamic 1990;39.
22. Eddouks M, Maghrani M, Lemhadri A, Ouahidi ML, Jouad H. Ethno pharmacological survey of medicinal plants used for the treatment of diabetes mellitus, hypertension and cardiac diseases in the south-east region of Morocco (Tafilalet). J Ethno pharmacol 2002;82: 97–103.
23. Heneidy SZ, Bidak LM. Potential uses of plant species of the coastal Mediterranean region, Egypt. Pak J Biol Sci 2004; 7:1010–23.

24. Lev E, Amar Z. Ethno pharmacological survey of traditional drugs sold in Israel at the end of the 20th century. J Ethno pharmacology 2000;72: 191–205.
25. Hagen LE, Schneider R, Stephens D, Modrusan D, Feldman BM. Use of complementary and alternative medicine by pediatric rheumatology patients. Arthritis and Rheumatis. 2003;49(1):3–6.
26. Willcox ML, Bodeker G. Traditional herbal medicines for malaria. BMJ, 2004; 329: 1156-9 .
27. Zaslawski C. The ethics of complementary and alternative medicine research: a case study of Traditional Chinese Medicine at the University of Technology, Sydney. Monash Bioeth Rev 2005; 24: 52-60.
28. Ernst E."Complementary medicine: common misconceptions". Journal of the Royal Society of Medicine 88 (5): 244–247. 1995.
29. Acharya, Deepak and Shrivastava Anshu. Indigenous Herbal Medicines: Tribal Formulations and Traditional Herbal Practices. Jaipur: Aavishkar Publishers Distributor. (2008): p. 440. ISBN 978-81-7910-252-7.
30. Angell M, Kassirer JP. "Alternative medicine--the risks of untested and unregulated remedies".(September 1998): The New England Journal of Medicine 339 (12): 839–41.
31. Walter R., PhD. Frontera; DeLisa, Joel A.; Gans, Bruce M.; NICHOLAS E. WALSH. Physical medicine and rehabilitation: principles and practice. Hagerstwon, MD: Lippincott Williams & Wilkins. (2005): pp. Chapter 19. ISBN 978-0-7817-4130-9.
32. Aratani, Lori. "Mainstream Physicians Try Such Alternatives as Herbs, Acupuncture and Yoga". Washington Post. (2009-06-09): Retrieved 2010-04-23.
33. Eisenberg DM, Kessler RC, Foster C, Norlock FE, Calkins DR, Delbanco TL. "Unconventional medicine in the United States. Prevalence, costs, and patterns of use".(January 1993): N. Engl. J. Med. 328 (4): 246–52.
34. Hann DM, Baker F, Denniston MM. Oncology professionals' communication with cancer patients about complementary therapy: a survey. Complement Ther Med. 2003;11(3):184–190. [PubMed] [Cross Ref].
35. Brown J, Cooper E, Frankton L, Steeves-Wall M, Gillis-Ring J, Barter W, McCabe A, Fernandez C. Complementary and alternative therapies: survey of knowledge and attitudes of health professionals at a tertiary pediatric/women's care facility. Complement Ther Clin Pract. 2007;13(3):194–200. [PubMed] [Cross Ref].
36. Bjerså K, Forsberg A, Fagevik Olsén M. Perceptions of complementary therapies among Swedish registered professions in surgical care. Complement Ther Clin Pract. 2011;17(1):44–49. [PubMed] [Cross Ref].

37. Chang KH, Brodie R, Choong MA, Sweeney K, Kerin M. Complementary and Alternative Medicine use in oncology: a questionnaire survey of patients and health care professionals. BMC Cancer. 2011;11(1):196. [PMC free article] [PubMed] [Cross Ref].
38. Maida J. Sewitch, Monica Cepoiu, et al. A Literature Review of Health Care Professional Attitudes Toward Complementary and Alternative Medicine. Complementary Health Practice Review Volume 13 Number 3 /October 2008 139-154.
39. Abdullah Al-Rowais N, Al Bedah AM, et al. Knowledge and attitudes of primary health care physicians towards complementary and alternative medicine in the Riyadh region, Saudi Arabia. Forsch Complemented. 2012;19(1):7-12. E pub 2012 Feb 2.
40. Levine, S. M., Weber-Levine, M. L., & Mayberry, R. M. Complementary and alternative medical practices: Training, experience, and attitudes of a primary care medical school faculty. Journal of the American Board of Family Practice, 16, 318-326.

41. Montbriand, M. J. Alternative therapies: Health professionals' attitudes. The Canadian Nurse, 22-26.
42. Goldszmidt, M., Levitt, C., Duarte-Franco, E., & Kaczorowski, J. Complementary health care services: A survey of general practitioners' views.Canadian Medical Association Journal, 153, 29-35.
43. Kurtz, M. E., Nolan, R. B., & Rittinger, W. J. Primary care physicians' attitudes and practices regarding complementary and alternative medicine. Journal of the American Osteopathic Association, 103, 597-602.
44. Winslow, C. L., & Shapiro, H. Physicians want education about complementary and alternative medicine to enhance communication with their patients. Archives of Internal Medicine, 162, 1176-1181.
45. The annual report or the Iraqi ministry of health in 2010. The official website or the Iraqi ministry of health, p163.
46. Frank Jacobs. The Patients Per Doctor Map of the World. http://bigthink.com/. October 2007.
47. Abeer J Khalaf, David L Whitford. The use of complementary and alternative medicine by patients with diabetes mellitus in Bahrain: a cross-sectional study. BMC Complementary and Alternative Medicine 2010, 10:35.
48. Christine Patterson, Heather Arthur. A Complementary Alternative Medicine Questionnaire for Young Adults. Integrative Medicine Insights 2009:4 1–11.
49. Paula Gardiner, Robert Graham, et al. factors associated with herbal therapy use by adults in the United States. alternative therapies, mar/apr 2007, vol. 13, no. 2.
50. Johnson SK, Blanchard A. Alternative medicine and herbal use among university students. J Am Coll Health. 2006 Nov-Dec;55(3):163-8.

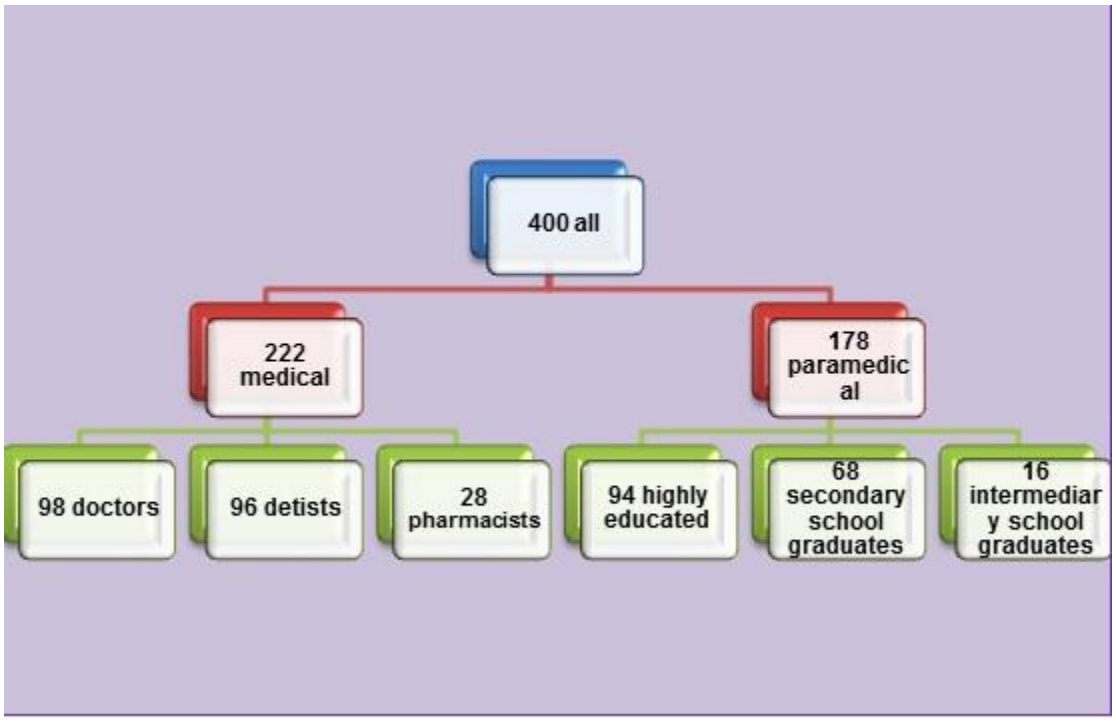

Fig. No. (1) the division of the participant according to their education level.

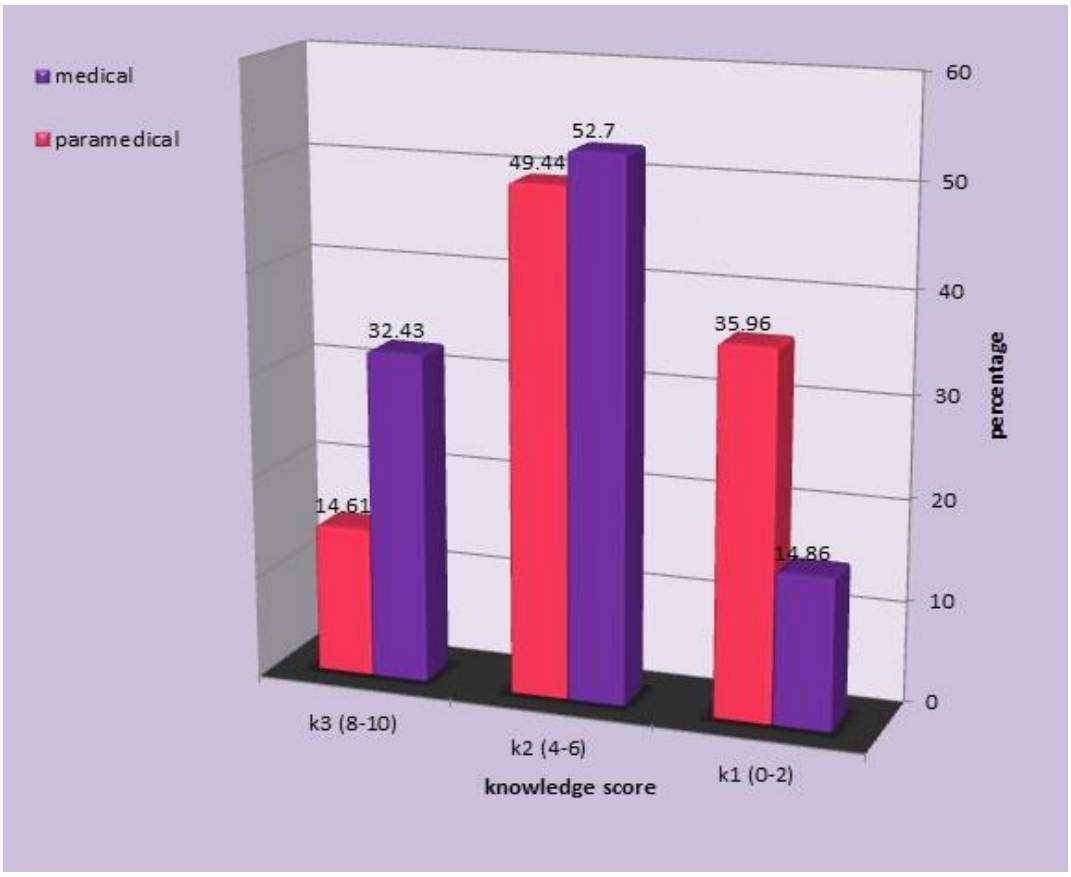

Fig No.(2) Comparison between the knowledge of the medical group &the paramedical group.

Table No. 1: The Relation between educational level & Knowledge in both medical & paramedical participants.

Educational level		*K1(0-2)		K2(4-6)		K3(8-10)		Total	p-value
		NO .	%	NO.	%	NO.	%		
medical	(bachelor)	32	17.02	97	51.60	59	31.38	188	0.103
	(specialists)	1	2.94	20	58.82	13	38.24	34	
	Total	33	14.86	117	52.70	72	32.43	222	
paramedical	(intermediary)	14	87.50	2	12.50	0	-	16	0.000
	(secondary)	25	36.76	33	48.53	10	14.71	68	
	(diploma& bachelor)	25	26.60	53	56.38	16	17.02	94	
	Total	64	35.96	88	49.44	26	14.61	178	

*k mean knowledge

Table no.2: The knowledge score of all participants and its association with each of age & gender.

			K score			Total	P-Value
			1 (0-2)	2 (4-6)	3 (8-10)		
Age	≤25	No.	3	2	1	6	0.007
		%	50.0%	33.3%	16.7%	100.0%	
	26-35	No.	19	72	45	136	
		%	14.0%	52.9%	33.1%	100.0%	
	36-45	No.	55	103	40	198	
		%	27.8%	52.0%	20.2%	100.0%	
	≥46	No.	20	28	12	60	
		%	33.3%	46.7%	20.0%	100.0%	
Total		No.	97	205	98	400	
		%	24.3%	51.3%	24.5%	100.0%	

Table no.2: The knowledge score of all participants and its association with each of age & gender.

			K score			Total	P-Value
			1 (0-2)	2 (4-6)	3 (8-10)		
Age	≤25	No.	3	2	1	6	0.007
		%	50.0%	33.3%	16.7%	100.0%	
	26-35	No.	19	72	45	136	
		%	14.0%	52.9%	33.1%	100.0%	
	36-45	No.	55	103	40	198	
		%	27.8%	52.0%	20.2%	100.0%	
	≥46	No.	20	28	12	60	
		%	33.3%	46.7%	20.0%	100.0%	
Total		No.	97	205	98	400	
gender	male	No.	37	93	38	168	0.375
		%	22.0%	55.4%	22.6%	100.0%	
	female	No.	60	112	60	232	
		%	25.9%	48.3%	25.9%	100.0%	
Total		No.	97	205	98	400	
		%	24.3%	51.3%	24.5%	100.0%	

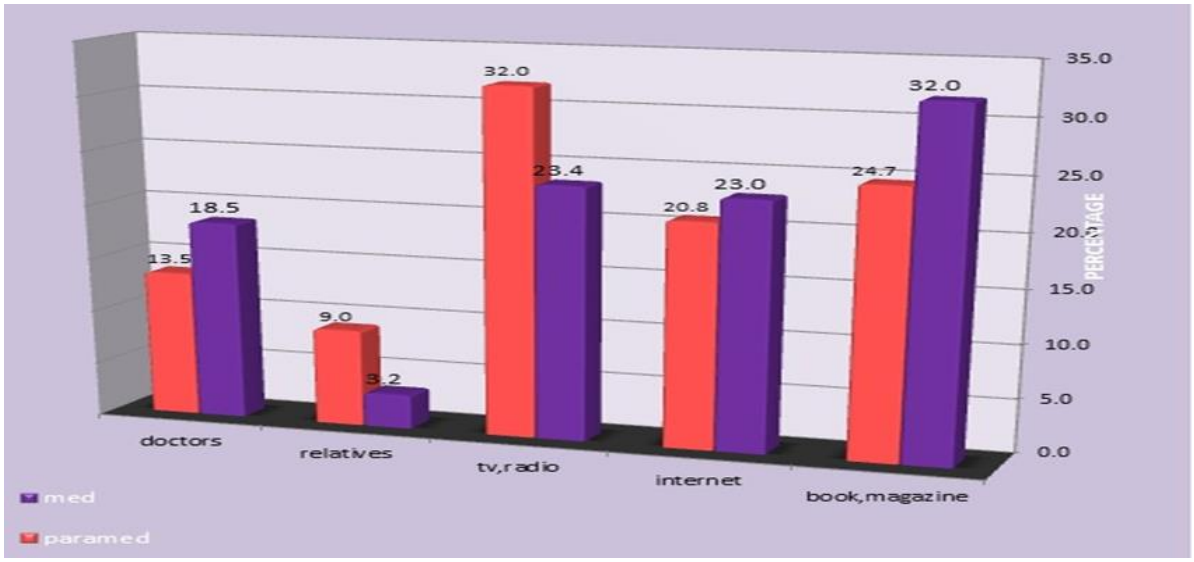

Fig No.(3) Comparison between the source of knowledge of the medical & the paramedical groups.

Table NO.3: Attitudes of medical group regarding herbs

	Disagree		Agree		Neutral	
	No.	**%**	**No.**	**%**	**No.**	**%**
1- Do you believe that herbal medicines are beneficial in healthcare management?	46	20.72	151	68.02	25	11.26
2-Do you think that the use of herbal medicines should not be limited only to patients who have failed conventional therapy?	51	22.97	154	69.37	17	7.66
3- Do you believe that herbal medicines can be used as a prophylaxis in certain conditions?	70	31.53	128	57.66	24	10.81
4- Do you think that herbal medicine can be safe (not injurious) to the health?	118	53.15	58	26.13	46	20.72
5- Do you think it'll be convenient to the patient if you prescribe such therapy?	102	45.95	101	45.50	19	8.56
6- Do you think that government should take more initiatives to promote HM	23	10.36	189	85.14	10	4.50
7- Do you think that continuing education in herbal medicines is important?	34	15.32	140	63.06	48	21.62

Table NO.4: Attitudes of paramedical participants regarding herbs *medicine*

Questions	DISAGREE		AGREE		NEUTRAL	
	NO.	%	NO.	%	NO.	%
1- Do you believe that herbal medicines are beneficial in healthcare management?	60	33.52	106	59.55	12	6.70
2-Do you think that the use of herbal medicines should not be limited only to patients who have failed conventional therapy?	55	30.73	114	64.04	9	5.03
3- Do you believe that herbal medicines can be used as a prophylaxis in certain conditions?	40	22.47	132	74.16	6	3.37
4- do you think that herbal medicine can be safe (not injurious to the health?	55	36.73	80	44.94	43	24.02
5- Do you think it'll be convenient to the patient if you prescribe such therapy?	53	29.78	118	66.29	7	3.93
6- Do you think that government should take more initiatives to promote HM	30	16.85	141	79.21	7	3.93
7- Do you think that continuing education in herbal medicines is important?	4	2.25	162	91.01	12	6.74

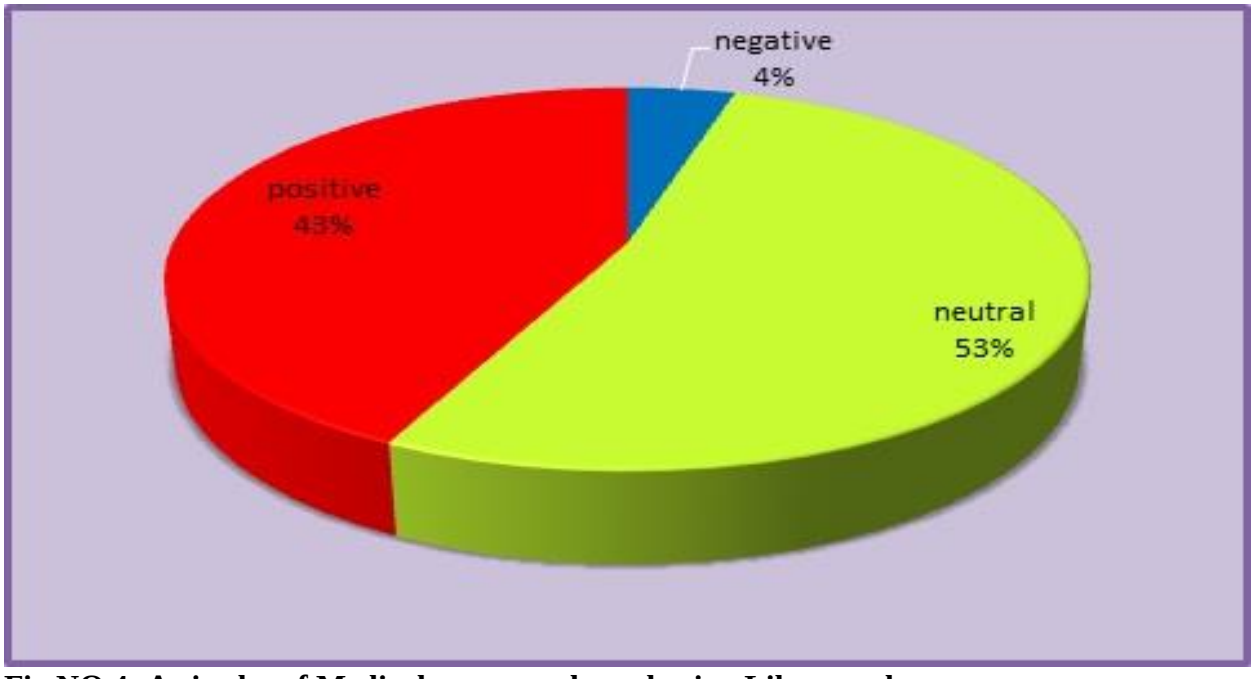

Fig.NO.4: Attitudes of Medical group evaluated using Likert-scale.

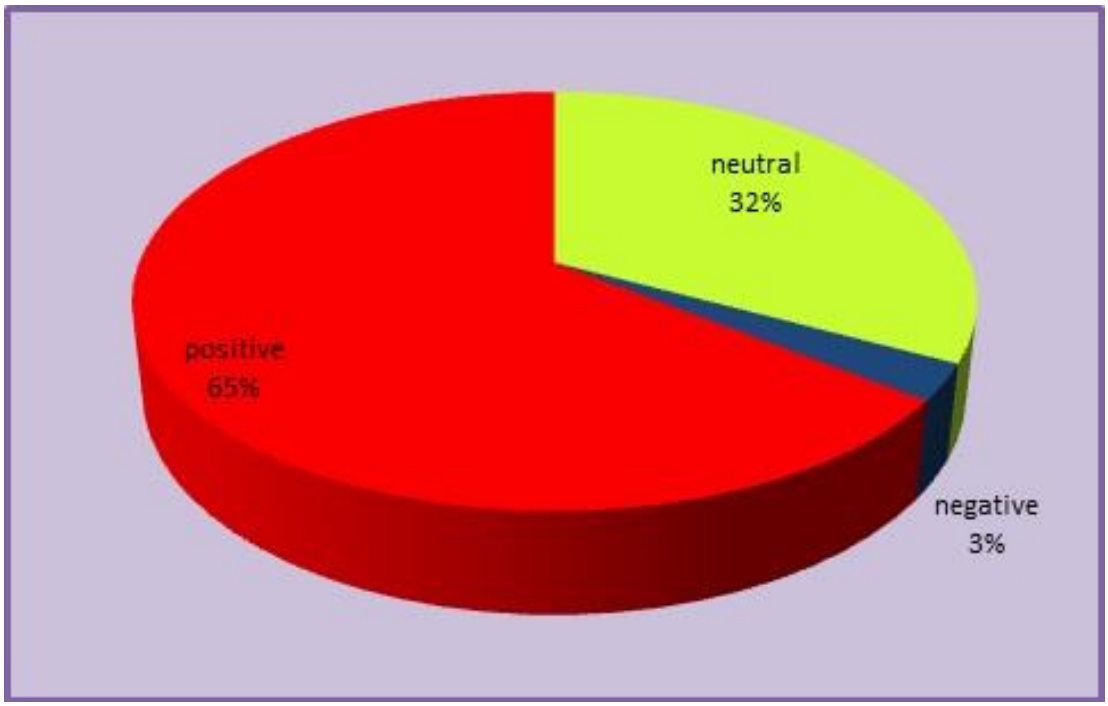

Fig.NO.5: Attitudes of paramedical group evaluated using Likert-scale

Table No. 5: the relation of the knowledge and attitude of all participants towards herbs.

			Knowledge (K-score)				P-value
			1	2	3	Total	
Attitude	1 Negative	No.	5	5	5	15	0.006
		%	1.25	1.25	1.25	1.25	
	2 Neutral	No.	48	74	53	175	
		%	12.00	18.50	13.25	43.75	
	3 Positive	No.	44	126	40	210	
		%	11.00	31.50	10.00	52.50	
	Total	No.	97	205	98	400	
		%	24.25	51.25	24.50	100.	

Table No. 6 : the relation between attitude & gender of all participant

attitude		Sex			p-value
		Male	female	all	
1 Negative	No.	11	4	15	0.004
	%	2.75	1.00	3.75	
2 Neutral	No.	82	93	175	
	%	20.50	23.25	43.75	
3 Positive	No.	75	135	210	
	%	18.75	33.75	52.50	
All	No.	168	232	400	

Table No.7 the relation between the education level & the attitude of the participants toward herbal medicine

Group	Educational level		attitude			Tot.	P-value
			1	2	3		
Medical	bachelor	count	11	136	41	188	0.09
		%	5.9%	72.3%	21.8	100.0%	
	Specialist	count	2	30	2	34	
		%	5.9%	88.2%	5.9%	100.0%	
	Total	count	13	166	43	222	
		%	5.9%	74.8%	19.3%	100.0%	
Para-Medical	Intermediary	count	1	11	4	16	0.50
		%	6.3%	68.8%	25.0%	100.0%	
	2ndary	count	2	56	10	68	
		%	2.9%	82.4%	14.7%	100.0%	
	high-ed	count	2	69	23	94	
		%	2.1%	73.4%	24.5%	100.0%	
	Total	count	5	136	37	178	
		%	2.8%	76.4%	20.8%	100.0%	

The table No.8:Practicing of Medical participants

Questions	No		Yes	
	No.	%	No.	%
1. Have you ever recommended the use of herbal medicines?	82	36.94	140	63.06
2- Have you ever prescribed herbs to patients?	109	49.10	113	50.90
3- Have you ever personally used herbs?	83	37.39	139	62.61
4- Do you specifically ask your patients about their use of herbal medicine when taking a drug history?	110	49.55	112	50.45
5- If treatment coasts the same would you recommend herbal medicine on traditional medicine?	145	65.32	77	34.68
6-Have you studied HM?	79	35.59	143	64.41

The table No.9:Practicing of paramedical participants

Questions	No		Yes	
	No.	%	No.	%
1. Have you ever recommended the use of herbal medicines?	52	29.21	126	70.79
2- Have you ever prescribed herbs to patients?	79	44.38	99	55.62
3- Have you ever personally used herbs?	44	24.72	134	75.82
4- Do you specifically ask your patients about their use of herbal medicine when taking a drug history?	70	39.33	108	60.67
5- If treatment coasts the same would you recommend herbal medicine on traditional medicine?	97	54.49	81	45.25
6-Have you studied HM?	74	41.57	104	58.43

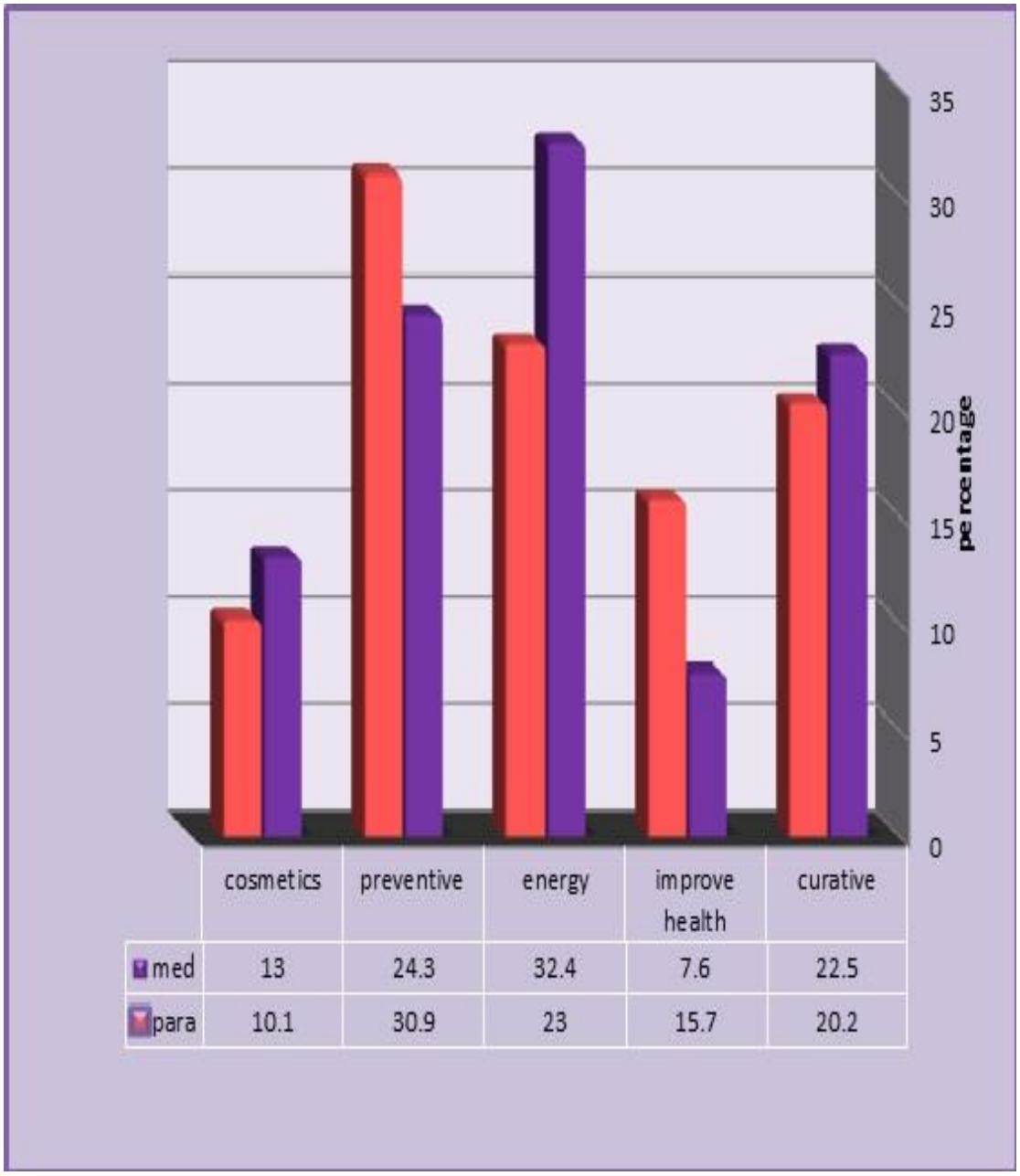

Fig.No.6: Comparison between the Purposes for using herbs of the medical &the paramedical group.

Table 10: the relationship between personal use of herbs & each of sex, age, attitude& knowledge of all participants

		use						P-value
		yes	%	no	%	Tot.	%	
Sex	Male	74	44.0 %	94	56.0 %	168	42.0 %	0.000
	Female	199	85.8 %	33	14.2 %	232	58.0 %	
	Tot.	273	68.3 %	127	31.8 %	400	100%	
Age	≤25	5	1.8 %	1	0.8 %	6	1.5 %	0.125
	26-35	83	30.4 %	53	41.7 %	136	34.0 %	
	36-45	144	52.8 %	54	42.5 %	198	49.5 %	
	≥46	41	15.0 %	19	15.0 %	60	15.0 %	
	Tot.	273	100 %	127	100 %	400	100%	
Attitude	1	3	1.1 %	15	11.8 %	18	4.5 %	0.000
	2	208	76.2 %	94	74.0 %	302	75.5 %	
	3	62	22.7 %	18	14.2 %	80	20.0 %	
	Tot.	273	100 %	127	100 %	400	100%	
knowledge	1	62	22.7 %	35	27.6 %	97	24.2%	0.573
	2	143	52.4 %	62	48.8 %	205	51.3%	
	3	68	24.9 %	30	23.6 %	98	24.5 %	
	Tot.	273	100 %	127	100 %	400	100%	