Journal homepage www.jzs.univsul.edu.iq
Journal of Zankoi Sulaimani
Part-A- (Pure and Applied Sciences)

Concurrent self-use of Herbal and Synthetic Medicines in Kurdistan Region-Iraq

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Article info
Original: 14.08.2015
Revised: 19.01.2016
Accepted: 30.01.2016
Published online: 20.06.2016

Key Words:
Herbal medicines
Concurrent medicines
Kurdistan Region

Abstract

In many parts of the world, there are rich traditions for the use of herbs in treatment of many disorders. This study is compared self-use of concurrent medicines (herbal and synthetic) (CM) with herbal only medicines (HM) among people of different genders, ages, and education levels in Kurdistan Region major cities (Erbil, Suleimaniyah, and Duhok). Self-administered structured questionnaires were randomly distributed among 587 respondents. The information obtained comprises the demography, gender, age, education level, previous self-use of CM or HM and indications for which HM were used.The highest ratio of respondents were males (50.6 %), herbal and concurrent medicines users were (15.8%) and (84.2 %) respectively. In all age groups, ratio of concurrent medicines users were higher than herbal medicines ($p< 0.05$), age groups of 31-40 and 51-60 years showed higher ratio among respondents with (23.5%) and (94.3%) for herbal and concurrent medicines, respectively. Among users of different educational levels, ratio of concurrent medicines were higher than herbal medicines ($p< 0.01$), university graduate and primary school educational levels were with higher ratio of (33.9%) and (93.9%) for herbal and concurrent medicines, respectively. The highest percentage of herb users was among people who suffered from gastrointestinal problems (59%), respiratory tract (39%) and cardiovascular system problems (36%), while musculoskeletal conditions were less often treated with herbs in Kurdistan Region (9%). Almost 104 plant species were mentioned during the interviews with respondents belonging to 57 families, the most diverse one Umbelliferae, followed by Brassicaceae, Asteraceae and Rosaceae.

Introduction

Traditional medicine concerns all knowledge, skills and practices, whether explicable or not from different cultures used in diagnosis, prevention and elimination of physical and mental illness relying exclusively on practical experience and observation often for centuries prior to development and implementation of modern medicine and are still in use today *[1]*. Traditional preparations include active ingredients from different plant parts which may be in crude state or as preparations including minerals and organic matter *[2]*. In many parts of the world, there are rich traditions for the use of herbs in treatment of many disorders. About 80% of the population in developing countries rely on traditional medicine for their

primary healthcare *[3]*, is often been more common because of historical, cultural, and ecological reasons as well as continued availability *[4]*, better compatibility *[3]* and better acceptance by consumers since natural products are better tolerated and more affordable*[5, 6]*. Medicines all over the world are revalued by extensive studies on plant species and their secondary metabolites which show therapeutic benefits *[7-9]*. Among alternative medications herbal products represents a good growing field, the use of natural products from 1990 to 1997 was increased to 380% among population in the United States *[10]* and the consumption of herbal products rich with vitamins and supplements was dramatically increased in the United Sates in the past decades, in 2001 alone the total expenditure on natural products was 4.2 billion USD *[11]*. Plants play important role in discovery and development of new pharmaceuticals, clinically useful drugs, templates for semi synthetic drugs, and as lead molecules from which a totally synthetic drug is designed *[12, 13]*. The continuous growing of herbal products market encouraged for introduction of new strategies for their delivery in biologic system by using nanotechnology (solid lipid nanoparticles, liposome's and micro emulsion) which will improve their bioavailability and efficacy *[6]*. The aim of the present study is to compare self-use of concurrent medicines CM (herbal and synthetic medicines) with herbal only medicines HM among people of different genders, ages, and education levels in Kurdistan Region.

Methods

A. Ethical Consideration

The protocol was submitted to the ethical committee of the College of Pharmacy at Hawler Medical University and approval was granted before conducting the study (HMU-PH-EC 140924124). The participants were supplied with questionnaire in both Kurdish and English languages and acceptance to participate in the study was taken as consent from them.

B. Study area

Data collection was carried out in Kurdistan Region cities (Erbil, Suleimaniyah and Duhok) during period of November 2013 to January 2015.

C. Data collection

Self-administered structured questionnaires were randomly distributed among different people on the utilization of CM or HM. A total of 587 respondents were included in this study. All respondents were assured of confidentiality and anonymity. The time taken by people to complete the questionnaire ranged from 20 to 30 min. The questionnaire consisted of both closed and open-ended questions. In addition to questions on demographic information, the questionnaire included questions on gender, age, education level, previous self-use of CM or HM and indications for which HM were used.

D. Taxonomical identification of herbal medicines

Information about the traditional herbal medicines was obtained from the respondents who had used herbal medicines during the interview. The common names of the plant species were used for taxonomical classification of HM *[14,15]*.

E. Data analysis

The relation between type of medicine used and gender, age, and education level were analyzed by chi-square test (SPSS software, version 14). Post hoc test was used to identify statistically the relation of each one of parameters tested with types of medicines. The limit of statistical significance was set at *p*-values (*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$).

Results

Five hundred eighty seven respondents were participated in this study from 3 cities of Kurdistan region on comparison between self-use of HM and CM. The results are summarized in *(Table: 1)* showed statistically significant differences between type of medicines used with participant's ages (p=0.013) and educational levels (p< 0.001).

Table-1: Association between type of self-use medicine and demographic characteristics of study participants

Characteristics		Frequency, n (%)			*P* Value
		HM	CM	Total	
Gender	Male	41 (13.8)	256 (86.2)	297 (50.6)	0.171^{ns}
	Female	52 (17.9)	238 (82.1)	290 (49.4)	
Age (years)	21-30	50 (14.9)	285 (85.1)	335 (57.1)	0.013*
	31-40	27 (23.5)	88 (76.5)	115 (19.6)	
	41-50	12 (17.9)	55 (82.1)	67 (11.4)	
	51 -60	4 (5.7)	66 (94.3)	70 (11.9)	
Education level	Medical Staff	27 (8.9)	277 (91.1)	304 (51.8)	< 0.001***
	University graduate	38 (33.6)	75 (66.4)	113 (19.3)	
	SecondarySchool	17 (21.8)	61 (78.2)	78 (13.3)	
	Primary School	2 (6.1)	31 (93.9)	33 (5.6)	
	Illiterate	9 (15.3)	50 (84.7%)	59 (10.1)	

p-values (*p< 0.05, **p<0.01, ***p<0.001), ns; not significant

The percentage of herbal medicine used in Kurdistan region for various illnesses were showed in *(Figure: 1)* ranged between (2-59%) included mainly those suffered from gastrointestinal, respiratory, and cardiovascular system problems.

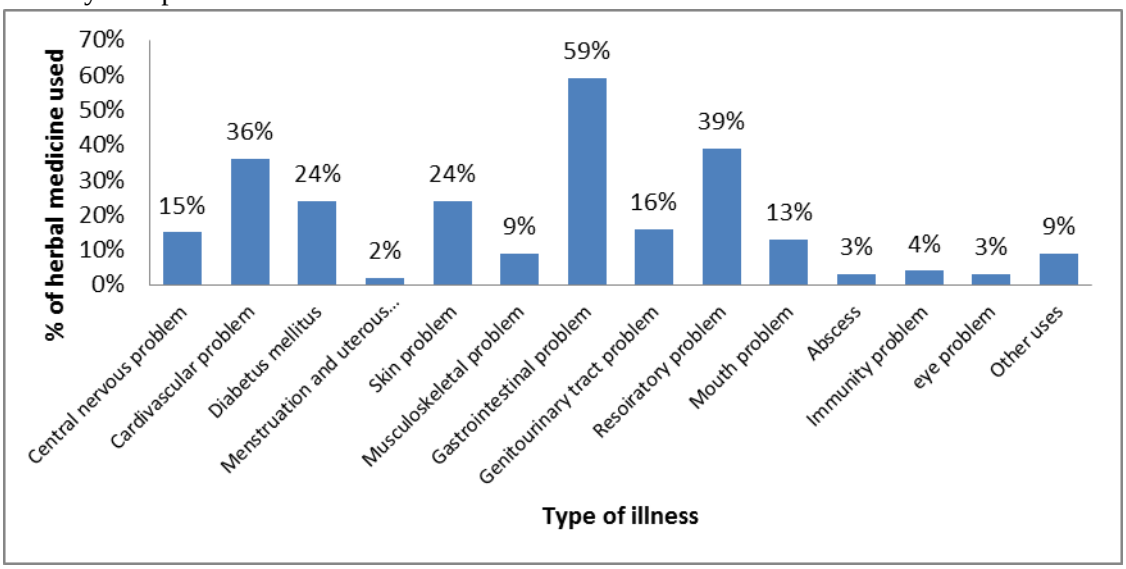

Figure-1: Percentage of traditional herbs used for different types of illnesses

The herbal medicines which used in Kurdistan Region were listed in *(Table: 2)* with their botanical name, family, Kurdish name and frequency of their use by participants. Black seed and rhubarb were used most frequently (25%) and (15%) respectively.

Table-2: Most commonly used herbal medicines in Kurdistan region.

Common name	Botanical name and family	Kurdish name	Frequency (%)
Basil	*Ocimumbasilicum*(Labiatae*)*	Rehan	3
Black seed	*Nigella sativa* (Ranunculaceae)	Rashka	25
Fenugreek	*Trigonellafoenum-graecum*(Leguminosae)	Shmli	2
Funnel	*Foeniculumvulgare*(Umbellliferae)	Raziana	5
Handal Bitter apple	*Citrulluscolocynthis*(Cucurbilaceae)	Gujalik	2
Maidenhair	*Adiantumcapillus-veneris*(Pteridaceae)	Bareza	2
Marsh mallow	*Altheaeofficinalis*(Malvaceae)	Gula hero	3
Ntu grass	*Cyperus rotundus* (Cyperaceae)	Sotka	2
Rhubarb	*Rheum ribes*(Polygonaceae)	Rewas	15
Rocket	*Eurca sativa* (Brassicaceae)	Jarjir	6
Shumac	*Rhuscoriaria*(Anacardiaceae)	Smaq	13
Singing nettle	*Urticariadioica*(Urticaceae)	Gazgaska	2
Tree of life tips	*Thujaoccidentalis*(Cupressaceae)	Mazu	3

Discussion

The self-use herbal medicine among different genders, age groups, education levels either alone or concurrently was not studied extensively in Kurdistan. Among 587 participants, the highest ratio of respondents was for males (50.6%) with age range of 21-30 years (57.1 %). The majority of medical staffs were among the respondents (51.8%) followed by university graduates (19.3%), while respondents with primary school education level was the smallest group (5.6%).When comparing males and females that uses HM or CM, the maximum percentage of HM were used by females (17.9%), while (86.2%) of males used CM *(Table: 1)*, but there was no evidence of relationship between the types of drug used (HM and CM) and people genders (p =0.171).While there was evidence on statistical significant relationship between types of medicines used (HM and CM) and patient age groups (p=0.013), post hoc test determined a significant relationship ($p< 0.05$) of age groups of 31-40 and 51-60 with the type of medicines used. The results of this study showed that there was continous increase in herbal medicine use alone or concurently with synthetic medicine with increase in education level and there is strong evidence of relationship between the types of medicines used and patient education levels ($p< 0.001$) and post hoc test specified patient education levels of medical staff and university graduates that showed significant relationship ($p< 0.01$) with the type of medicines used. The majority of HM users were of university graduate level (33.6%),while the highest ratio of CM users were of primary school level respondent (93.9%). According to a study among urban residents in Lagos and Nigeria, there was no statistical significant difference between the status of herbal medicine usage and respondent's levels of education *[16]*. In contrast, another study by Humidat and Khamaysa *[17]* showed that the usage of herbal products was declining with increasing the education level. Over half of respondents (84.2 %) were CM users and (15.8%) were only HM users, this ratio is higher than those recorded in other countries *[18]*. However; in a study conducted in United States showed only (20%) of the respondents were using medicinal herbs *[19]*, while Folashade *et al*., *[20]* recorded that over (80%) of the world population rely on herbal products for a healthy living. This may be explained by the varied health conditions and cultural differences in each of the populations studied.Herbal medicines are used for various illnesses, the results in *(Figure: 1)* shows that the highest percentage of herb users (59%) was among people

who suffered from gastrointestinal problems, respiratory tract (39%) and cardiovascular system problems (36%), while musculoskeletal conditions (9%) were less often treated with herbs in Kurdistan Region. The extensive use of traditional herbs as a remedy for treatment of different diseases was observed in different parts of the world *[21-25]*. The majority of the participant who were traditional herb users believed that adverse effects rarely occur with their use and they are safe since they are derived from nature. Many HM are used in Kurdistan, the most commonly used traditional herbs are listed in *(Table: 2)*. Almost 104 plant species were mentioned during the interviews with respondents belonging to 57 families, the most diverse one were Umbelliferae, followed by Brassicaceae, Asteraceae and Rosaceae. Black seed and rhubarb were used most frequently (25%) and (15%) respectively.

Conclusion

Herbal medicines are important drugs used traditionally in Kurdistan for treatment of many disorders. On comparison of self-use concurrent medicines (herbal and synthetic) with herbal only medicines among people of Kurdistan region cities (Erbil, Suleimaniyah, and Duhok), the ratio of concurrent medicines users was higher than herbal only medicines. Higher ratio of herbal medicines users among different genders, ages and educational levels were recorded for females, age group 31-40 years, and university graduates, respectively. The use of herbal medicines was highest among those who suffered from gastrointestinal, respiratory tract and cardiovascular system problems. Herbal medicines related to plant families of Umbelliferae, Brassicaceae, Asteraceae and Rosaceae were more frequently used in Kurdistan region.

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