

Knowledge, Beliefs and Attitudes towards Herbal Medicine – A Community-based Survey from a Central Region of Saudi Arabia

Hanan Mohammed Al-Yousef¹, Syed Wajid^{2,*}, Ibrahim Sales²

¹Department of Pharmacognosy, College of Pharmacy King, Saud University Female Campus, Riyadh, SAUDI ARABIA.

²Department of Clinical Pharmacy, College of Pharmacy King, Saud University, Riyadh, SAUDI ARABIA.

ABSTRACT

Background and Objectives: Herbal products are widely used in many countries in various forms including roots, leaves, barks seeds and so many, for inhibiting and treating Number of minor and major disorders. The purpose of this study was to evaluate the prevalence of self-medication with complementary and alternative medicine (CAM) in capital of Saudi Arabia (SA). **Methods:** A cross-sectional, descriptive online survey was conducted among general public from February to April 2018 using Google Forms. The survey was divided into 3 themes and comprised of 23 items that gathered information about the attitudes, perceptions and knowledge of respondents toward CAM. **Results:** Approximately 51 % of the respondents believed that herbal medications (HM) are better than commercially available prescription and over-the-counter drugs. About to 78.2 % believed that going to a physician is better than HM. Over half (53.7 %) reported that their physicians were aware of their CAM use. The most common influences for using this type of treatment were family and friends (68.9 %) followed by the internet (20.3 %). The most commonly reported herbal medicines used are ginger (61 %) and cinnamon (25 %). Nearly half of the respondents (46.5 %) reported that joint pain is the most common ailment for using HM. **Conclusion:** The study revealed a high prevalence of HM use among general community of KSA. More awareness and education about risks and complications of HM use are needed for both public and healthcare professionals.

Key words: Knowledge, Beliefs, Attitudes, Herbal medicine, Saudi Arabia.

INTRODUCTION

The popularity and use of complementary and alternative medicine (CAM) has been well documented in previous studies around the world.¹⁻⁵ The definition of CAM depends on the therapy and practices which exist. The National Centre for Complementary and Alternative Medicine (NCCAM) defines CAM as a group of diverse medical and health care systems, practices and products that are not presently considered to be part of conventional medicine.⁶ The world health organizations (WHO) published that approximately 70%–80% of the population from developed countries has used some form of alternative or complementary medicine.⁷ The use of CAM varies according to gender and previous data have reported that females are more prone to use CAM than males. It is thought that the use of CAM during pregnancy, such as ginger, mint oil and

lemon oil, may help relieve early pregnancy symptoms like nausea and vomiting.⁸

The use of CAM is very common in Arab countries, in general and in Saudi Arabia (SA) specifically. Previous data on the utilization rate of CAM in Saudi Arabia was found to be 25% followed by Egypt (16.8%) and Morocco (16.2%).⁹ The prevalence of HM in SA was found to be 82.6% for stomach ailments and 42.3% for mental disorders.^{10,11} Widespread use of CAM as alternative therapy is due to the belief that herbal products and therapies are considered to be safe and natural by consumers. Complementary and herbal medicines are easily available to all citizens through herbal medication outlets or retail shops with or without prescription. Therefore, the objective of this study was to evaluate the

DOI: 10.5530/ijopp.12.3.40

Address for Correspondence:

Mr. Syed Wajid,

Department Clinical Pharmacy,
College of Pharmacy King,
Saud University, SAUDI
ARABIA.

Phone no: 966 503754169

Email Id: waji@ksu.edu.sa



www.ijopp.org

knowledge, beliefs and attitudes of the general population in the central region of SA toward CAM.

MATERIALS AND METHODS

A cross-sectional, descriptive survey was conducted among the general public in Riyadh, the capital of KSA, to evaluate the knowledge, beliefs and attitudes toward CAM. Data collection was carried out over a period of three months from February to April 2018 using self-administered online questionnaire through social Medias such as whatsapp, twitter, Facebook and Google Forms. Male and female aged above 18 years were included in the study. The responded who's aged below 18 years and responded other than capital of Saudi Arabia were excluded from the study.

To explore the knowledge, attitudes and beliefs regarding herbal medicine among the community of Saudi Arabia, a new questionnaire was established by members of the research team, who had previous experience in questionnaire development and validation, on the basis of the enclosed items of previously used and published questionnaires related to CAM.¹² The survey questionnaire comprised of 23 items divided into three sections. The first section collected demographic information of the participants (e.g age, gender, employment status, marital status and most commonly used CAM). The second section included 14 questions about the knowledge, beliefs and attitudes related to CAM. The last section consisted of three multiple-choice questions soliciting information on the most common ailments and reasons for using CAM in KSA. Once the research tool was developed, it was sent to review, to give their opinion and suggestion about the suitability of the questions, all the necessary additions or changes in the study tools were made according to results of the review with research team.

In order to check the validity of the questionnaire pilot study was conducted at King Saud University College of Pharmacy under supervision of the senior researcher for the purpose of evaluating the response of the subject, measuring the validity of the questionnaire, testing the study tools; and choosing the best way for data collection and management. The pilot study was completed in 1 week and it involved 15 subjects. All the necessary additions or changes in the study tools were made. The result of the pilot study was not included in the main study. A Cronbach's alpha value of 0.74 was found for the questionnaire which indicated that the tool have good internal consistency

The targeted population for this study was residents of Riyadh aged 18 years and older. An invitation message to participate in the study was sent via social media (WhatsApp[®]) and email to family members, friends and the general community with a link to the survey. Snowball technique was used to collect the data, in which one person invited to complete the survey, provides multiple referrals. The participants were informed about the study goals and a consent form was distributed with the questionnaires. The information provided by the study participants in the questionnaires were kept confidential and only the collected data was processed. The each of the questionnaire was translated into Arabic, the local language, then translated back to English to ensure consistency in meaning before data collection.

A stratified random sample technique was used for data collection. The participants was randomly chosen to respond to the survey, in community of Saudi Arabia mainly targeted through social media and google platform, in Riyadh region were randomly selected. The selection of facilities was done at random with a clear intention to include different areas of Riyadh region (i.e., north, south, east and west). The questionnaire was followed up for collection on later date that range from one to seven weeks. Non-respondents were phoned, emailed to return their questionnaires. All returned usable questionnaires were completed anonymously.

Based on the previous study reports¹³ the prevalence of herbal medicine use among Saudi population was 74%. Assuming the previous study reports at 74% prevalence of herbal medicine, an estimated sample size of 296 participants (completed questionnaires) is required to have a two-sided 95% confidence interval of width $\pm 5\%$.

Statistical analysis

Manual data entry was carried out from each completed survey questionnaire received from participants. The data not providing any personal information of the surveyed respondents like name, address. Unique identifier associated with the survey questionnaire will be used to identify individual responses and analyze the data. The data analyzed using SPSS Version 22 for Windows for analysis. Descriptive statistics including percentages and frequency distribution were calculated for each variable. The level of significance was set a priori at $p \leq 0.05$.

This study was approved by the Research Committee of College of Medicine, King Saud University, Riyadh, Saudi Arabia.

RESULTS

The demographic characteristics of the sample populations are depicted in Table 1. The majority of participants were female (94 %), currently married (58.2 %) and aged between 18 - 25 years (35.9 %). Approximately 70 % described their economic status as being average and over 73 % were either employed or students. The study results indicated that most of the respondents (75.6 %) reported using herbal medicine as CAM followed by massage (13.9 %) and cupping therapy (8.3 %). Table 1 summarizes the demographic data of the participants.

Although over half (53.7 %) reported that their physicians were aware of their HM use, the vast majority of the respondents (85 %) were administering this treatment without any prior consultation with their physicians. The most common influences for using this type of treatment were family and friends (68.9 %), the internet (20.3 %) and books and periodicals (8.5 %) as shown in Table 2. Approximately 51 % of the respondents believed that HM are better than commercially available prescription and over-the-counter drugs; however, 78.2 % believed that going to a physician is better than HM. Ironically, 89.6 % used HM before treatment with prescription medications. The details of the respondents' attitudes, perceptions and knowledge regarding HM are provided in Table 2.

Table 1: Demographic information.

Characteristic	N	%
Sex		
Male	84	5.4
Female	1476	94.6
Age (year):		
18-25	560	35.9
26-35	284	18.2
36-45	390	25
46-60	326	20.9
Marital status		
Single	652	41.8
Married	908	58.2
Economic status		
Excellent	436	28
Average	1090	69.9
Poor	34	2.1
Employment status		
Student	565	36.2
Employee	575	36.8
Unemployed	420	26.9
Which of the following CAM therapies do you use?		
Herbal medicines	1560	75.6
Acupuncture	18	0.9
Cupping therapy	172	8.3
Energy therapy	26	1.3
Massage therapy	287	13.9

Table 2: General attitudes, perceptions and knowledge regarding HM.

Herbal Medicine Variables	N	%
Has this type of treatment been requested by a physician?		
Yes	235	15
No	1325	85
Did you tell your doctor about your use of this treatment?		
Yes	838	53.7
No	722	46.3
What are your sources of information for using this type of treatment?		
Internet	317	20.3
Media	36	2.3
Books/periodicals	133	8.5
Family and friends	1074	68.9
Do you believe HM are better than taking drugs?		
Yes	801	51.3
No	759	48.7
Is HM better than taking prescription medicine?		
Yes	463	29.7
No	1097	70.3
Are HM better than going to a doctor?		
Yes	424	27.2
No	1136	72.8
Do you think HM are safe?		
Yes	904	57.9
No	656	42.1
Do you think HM have side effects?		
With other herbs	551	35.3
With drugs	894	57.3
With food	115	7.4
Do you think HM have bad complications?		
Yes, mild complications like sensitivity	642	41.2
Yes, severe complications that may lead to death	461	29.6
No	457	29.2
Have you ever used HM before treatment with medications?		
**Yes	1398	89.6
***No	162	10.4
How did you get HM?		
Cultivated	19	1.2
Bought from a herbal shop	1524	97.7
Pharmaceutical preparation	17	1.1
What are your reasons for using HM?		
Treatment	633	40.6
Protective	565	36.2
Complementary	362	23.3
Have you noticed the effectiveness of HM after use?		
Yes	1409	90.3
No	151	9.4
Do you think all the herbal preparations that are used are suitable for all ages?		
Yes	329	21.1
No	1231	78.9

*HM: Herbal medicines; Examples provided to the participants included: ** Ginger, mint, cumin, Myrrha, anise, cinnamon, turmeric, garden cress, nigella sativa, chamomile, flax seed, rosemary, Senna, licorice, fenugreek, oregano and Saussurea costus. The following explanation was given to the participants: *** No, because their results are not apparent until after extensive use and they pose a serious risk.

The most commonly reported HM used are ginger (61 %) and cinnamon (25 %). Nearly half of the respondents (46.5 %) reported that joint pain is the most common ailment prompting HM use followed by dyslipidemia (17.9 %) and hypertension (13.2 %) as shown in Table 3.

DISCUSSION

The results of this study indicate that a large proportion of the participants chose CAM for preventative and/or active treatment; however, there is a disconnect between patient practice and physician involvement. Approximately 85% of subjects in our study were using herbal medicines without prior consent of their physicians. Furthermore, they prefer to try CAM before taking prescription and/or over-the-counter medications.

Patient perceptions toward CAM have been a frequent area of study in the literature. Frequently cited reasons for use include a desire for control over one's personal health care decisions, taking responsibility for one's health, the belief that traditional prescription medications are not effective, a personal inclination towards CAM and that CAM is a cost-effective alternative to prescription medications.^{14,15} Although many patients claim to prefer CAM due to the fact that it is perceived as being "natural", the potential for harm and drug interactions

are exacerbated in the setting of the denial of disclosure to one's physician.¹⁶ More worrisome is the reality that patients choose to treat their chronic disease states, including major diseases such as diabetes, with CAM.^{2,3}

Healthcare practitioners have also been solicited for their opinions regarding CAM. Physician perceptions and either their personal use or their endorsement of CAM has been explored in many studies. Wilkinson and Tinley reported that over 90% of Australian podiatric physicians have used CAM therapy in the past year.¹⁷ In addition, 93% had treated patients with CAM or at least recommended its use in treatment. Physicians in general have reported that their personal use of CAM is approximately 40%; however, they acknowledge their inadequate knowledge of CAM and the need for more education regarding its use.¹⁸ A systematic review by Kwan and colleagues found that US and Canadian pharmacists shared equal proportions of positive and negative attitudes regarding the safety and efficacy of Dietary Supplements (DS).¹⁹ Although they reported receiving numerous questions from the public and healthcare sectors, there is an overall perception of a deficiency in knowledge about DS.

In SA, there have been extensive efforts to determine the overall prevalence of CAM in the Saudi population and associated factors with its use and awareness. Al-Rowais and colleagues reported that less than ten percent of primary health care physicians had formal training regarding CAM and in general, do not make referrals to CAM practitioners.²⁰ However, over 50% of physicians personally use CAM for themselves or their families. They also highly recommend that physicians should learn more about CAM in order to better serve their patients. This knowledge deficit among physicians and healthcare professionals is not surprising. Al-Rukban *et al.* conducted a cross-sectional descriptive study including all medical, dental, pharmacy, nursing, allied medical science and health colleges in KSA.²¹ They found that a CAM specialized track and/or postgraduate education in CAM was not available in SA.

A recent review of the published data related to the Saudi population revealed that the majority of the studies about CAM use in SA have been conducted within the past five years and over half of the studies (54%) were conducted in the capital city of Riyadh.²² Studies indicated that CAM use is very common in SA. Al Bedah and colleagues estimated that more than 75% of the Saudi population used herbal medicines in the past 12 months.²³

Al-Faris *et al.* reported a 73% lifetime prevalence and a 68% prevalence in the past year of CAM use.²⁴

Table 3: The most common ailments and reasons for using herbal medicine.

Variables	N	%
Which of the following common HM do you use?	952	61.0
Ginger	67	4.3
Sage	22	1.4
Marjoram	129	8.3
Turmeric	390	25.0
Cinnamon		
What is the most common ailment that HM are used to treat?	897	46.5
Joint pain	240	12.4
DM	254	13.2
HTN	345	17.9
Dyslipidemia	195	10.0
Infertility		
What are the reasons behind using HM?		
High costs of medication	49	3.1
Cheap price of HM	16	1.0
Frequent medical errors	41	2.6
Side effects of drugs	362	23.3
Easy access to HM	175	10.1
Fast effects of HM	107	6.9
The failure of medicine in the treatment of some cases	121	7.8
Advice by someone	280	17.9
More useful	170	10.9
Safe (no side effects)	257	16.5

Respondent rationale for herbal medicine use included perceived conventional medical treatment ineffectiveness, suspected CAM effectiveness and an inclination toward using natural products and dissatisfaction with the scarcity of multiple physician appointments per year. Al-Rowais and colleagues indicated that the prevalence of CAM use was 42% and 24% in one's lifetime and within the past year, respectively.²² The reasons for using CAM were similar to those published by Al-Faris and colleagues.²⁴ They included the apparent success of alternative medicine including herbs, an inclination towards natural products and the perceived failure of conventional medical treatment. Aldahash *et al.* reported an 87.4% prevalence of CAM.²⁵ The majority of respondents believed that CAM was effective as adjunct therapy along with conventional medicine or as an alternative in conventional medicine treatment failures. Elolemy and Albedah published a study with an 85% prevalence of CAM[1]. Almost 50% of study participants were hesitant to discuss CAM with their physicians, 42.4% occasionally discuss CAM with their physicians and unfortunately, only 8.3% discuss CAM with their physicians on a regular basis.

Limitations of the study

This study has some limitations. Firstly this study was limited to central region (Riyadh) and as indicated in many other similar studies in SA, there are differences in practices and the use of CAM depending on the geographic region. Therefore, the results cannot be generalized to all regions of SA. Additionally, there is the possibility of recall bias among participants that may have led to some inaccuracy in the study results.

CONCLUSION

This study emphasizes the importance of public education regarding the use of CAM by healthcare professionals. Furthermore, not only should patients be more forthcoming regarding CAM use, but also physicians should strive to create an environment of mutual respect and collaboration with their patients. Patients will feel more comfortable discussing these issues in these types of situations. Finally, governmental regulation also essential to ensure safe use and distribution of CAM.

ACKNOWLEDGEMENT

The authors would like to thank the Deanship of Scientific Research, King Saud University College of Pharmacy Riyadh Saudi Arabia.

CONFLICT OF INTEREST

No conflicts of interest are associated with this work.

ABBREVIATIONS

CAM: Complementary and alternative medicine; **WHO:** World health organizations; **HM:** Herbal medicine; **SA:** Saudi Arabia; **DS:** Dietary supplements.

SUMMARY

The use of CAM is very common in recent years worldwide because of its safety and effectiveness reported by many studies. The main reasons for apparent success of alternative medicine may be, an inclination towards natural products and the perceived failure of conventional medical treatment. Furthermore, we suggest to increase the awareness to safe use of CAM through public education program regarding the use of CAM by healthcare professionals needed.

REFERENCES

- Elolemy AT, Albedah AM. Public knowledge, attitude and practice of complementary and alternative medicine in riyadh region, saudi arabia. *Oman Med J.* 2012;27(1):20-6. doi: 10.5001/omj.2012.04.
- Ali BA, Mahfouz MS. Herbal medicine use among patients with type 2 diabetes in North Sudan. *Annual Research and Review in Biology.* 2014;4(11):1827. DOI: 10.9734/ARRB/2014/8015
- Azizi-Fini I, Adib-Hajbaghery M, Gharehbohlou Z. Herbal medicine use among patients with type 2 diabetes in Kashan, Iran, 2015. *European Journal of Integrative Medicine.* 2016;8(4):570-5. DOI10.1016/j.eujim.2016.04.003
- Eisenberg DM, Davis RB, Ettner SL, Appel S, Wilkey S, Rompay MV, *et al.* Trends in alternative medicine use in the United States, 1990-1997: Results of a follow-up national survey. *JAMA.* 1998;280(18):1569-75. doi:10.1001/jama.280.18.1569
- Fisher P, Ward A. Complementary medicine in Europe. *BMJ.* 1994;309(6947):107-11. doi: https://doi.org/10.1136/bmj.309.6947.107
- NIH. Complementary, Alternative, or Integrative Health: What's In a Name?. NCCIH. 2018.
- WHO. Traditional Medicine Strategy: 2002-2005. Geneva: World Health Organization; 2002. 2018.
- Babbar S, Williams KB, Maulik D. Complementary and Alternative Medicine Use in Modern Obstetrics: A Survey of the Central Association of Obstetricians and Gynecologists Members. *J Evid Based Complementary Altern Med.* 2017;22(3):429-35. doi: 10.1177/2156587216671215.
- Zyoud SH, Al-Jabi SW, Sweileh WM. Scientific publications from Arab world in leading journals of Integrative and Complementary Medicine: a bibliometric analysis. *BMC Complement Altern Med.* 2015;15(1):308. doi: 10.1186/s12906-015-0840-z.
- Alghamdi MA, Mohammed AG, Alfahaid F, Albshabshe A. Herbal medicine use by Saudi patients with chronic diseases: A cross-sectional study (experience from Southern Region of Saudi Arabia). *Journal of Health Specialties.* 2018;6(2):77. DOI: 10.4103/jhs.JHS_157_17
- Mohammad Y, Al-Ahmari A, Al-Dashash F, Al-Hussain F, Al-Masnoun F, Masoud A, *et al.* Pattern of traditional medicine use by adult Saudi patients with neurological disorders. *BMC Complement Altern Med.* 2015;15(1):102. doi: 10.1186/s12906-015-0623-6.
- Alghadir AH, Al-Yousef HM, Al-Hussany F, Hasaneen A, Iqbal ZA. Beliefs and Attitudes of Paramedical College Staff Towards Complementary and

- Alternate Medicine. *Afr J Tradit Complement Altern Med.* 2016;13(5):170-7. doi: 10.21010/ajtcam.v13i5.22.
13. Akeel MMA, Ghamdi WMA, Habib SA, Koshm M, Otaibi FA. Herbal medicines: Saudi population knowledge, attitude and practice at a glance. *Journal of Family Medicine and Primary Care.* 2018;7(5):865. DOI: 10.4103/jfmprc.jfmprc_315_17
 14. Pagán JA, Pauly MV. Complementary and alternative medicine: personal preference or low cost option?. *LDI Issue Brief.* 2004;10(4):1-4.
 15. Astin JA. Why patients use alternative medicine: results of a national study. *JAMA.* 1998;279(19):1548-53. doi:10.1001/jama.279.19.1548.
 16. Frishman WH, Beravol P, Carosella C. Alternative and complementary medicine for preventing and treating cardiovascular disease. *Dis Mon.* 2009;55(3):121-92. doi: 10.1016/j.disamonth.2008.12.002.
 17. Wilkinson JM, Tinley P. Knowledge, beliefs and use of complementary and alternative medicine by Australian podiatric physicians. *J Am Podiatr Med Assoc.* 2009;99(2):121-8.
 18. Vlioger AM, Vliet MV, Jong MC. Attitudes toward complementary and alternative medicine: a national survey among paediatricians in the Netherlands. *Eur J Pediatr.* 2011;170(5):619-24. doi: 10.1007/s00431-010-1331-3.
 19. Kwan D, Hirschhorn K, Boon H. U.S. and Canadian pharmacists' attitudes, knowledge and professional practice behaviors toward dietary supplements: a systematic review. *BMC Complement Altern Med.* 2006;6(1):31. doi. org/10.1186/1472-6882-6-31
 20. Al-Rowais NA, Bedah AMA, Khalil MK, Olemly ATE, Khalil AA, Alrasheid MH, *et al.* Knowledge and attitudes of primary health care physicians towards complementary and alternative medicine in the Riyadh region, Saudi Arabia. *Forsch Komplementmed.* 2012;19(1):7-12. doi: 10.1159/000335814.
 21. Al-Rukban MO, AlBedah AM, Khalil MK, El-Olemy AT, Khalil AA, Alrasheid MH. Status of complementary and alternative medicine in the curricula of health colleges in Saudi Arabia. *Complement Ther Med.* 2012;20(5):334-9. doi: 10.1016/j.ctim.2012.05.006.
 22. Alrowais NA, Alyousefi NA. The prevalence extent of Complementary and Alternative Medicine (CAM) use among Saudis. *Saudi Pharm J.* 2017;25(3):306-18. doi: 10.1016/j.jsps.2016.09.009.
 23. AlBedah AM, Khalil MK, Elolemy AT, Mudaiheem AAA, Eidi SA, Al-Yahia OA, *et al.* The use of and out-of-pocket spending on complementary and alternative medicine in Qassim province, Saudi Arabia. *Ann Saudi Med.* 2013;33(3):282-9. doi: 10.5144/0256-4947.2013.282.
 24. Al-Faris EA, Al-Rowais N, Mohamed AG, Al-Rukban MO, Al-Kurdi A, Balla Al-Noor MA, *et al.* Prevalence and pattern of alternative medicine use: The results of a household survey. *Ann Saudi Med.* 2008;28(1):4-10. DOI: 10.5144/0256-4947.2008.4
 25. Aldahash FF, Marwa AM, Alsulaiman MA. Attitude towards the use of complementary and alternative medicine by patients in Saudi Arabia. *Biomedica.* 2012;28(1):1-6.