



Herbal medicines: knowledge, attitude, dispensing practice and the barriers among dental practitioners in Chennai city, Tamilnadu

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ABSTRACT

Background & Aim: In the recent past, traditional medicines have gained increased awareness among the scientific community and general public owing to the intrinsic value of these systems. They are considered because of the drug resistance and side effects associated with allopathic medicines. Also, in a country like India, where there is availability of rich medicinal flora, herbal medicine can serve as a great alternative to overcome these disadvantages. Hence, a study was conducted to assess the knowledge, attitude and practice of herbal drugs among dental practitioners in Chennai, Tamilnadu.

Experimental: A cross-sectional study was designed where 300 practicing dentists were selected by non-probability convenience sampling. It comprised of 150 dentists with undergraduate qualification and 150 dentists with a postgraduate degree from Chennai, Tamilnadu. A questionnaire was framed containing 17 questions testing the knowledge, attitude and practice of herbal medicines.

Results: When the knowledge about herbal medicines was assessed among dental practitioners, it was found that 76% were aware about herbal drugs in general and 86% were aware of its side effects. 94.7% of the dentists were aware of the interactions of herbal drugs with other conventional medications. Even though dentists seem to have adequate knowledge and attitude of herbal drugs, there seems to be a significant variation in the practice of herbal drugs in clinical scenario.

Recommended applications/ industries: From the present study, a clear cut lack in the understanding of herbal drugs is evident. Dentists and other medical practitioners are willing to learn more about it, but find it difficult to access trustworthy information and clinical evidence on the practice of such drugs. The availability of a comprehensive list of herbal drugs is imperative at this juncture, and inter-professional research has to be encouraged to bring out the highest efficiency of such drugs.

1. Introduction

In the recent past, traditional medical practices have gained an increased awareness among the scientific community and general public owing to the realization

of the intrinsic value of these systems (Bolor et al., 2014). According to the WHO First Global Strategy on Traditional and Alternative Medicine in 2002, Traditional Medicine and Complementary Alternative

Medicine (TM/CAM) remain global standards of medical and dental care particularly in less developed countries (Colvard *et al.*, 2006). TM/CAM involves all the alternative medicinal practices including Ayurveda, Siddha, Unani, Homeopathy, Naturopathy, Chiropractic, Aromatherapy, Acupuncture, Hypnosis etc., Almost 70-80% or even more of the global population use TM/CAM care, majority of whom are reliant on herbs and plants (Colvard *et al.*, 2006). Traditional medicines are sought after due to the emerging drug resistance and increased cost of allopathic drugs. In a country like India, where there is a rich flora with abundant availability of medicinal plants, herbal medicine can serve as a great alternative to overcome this disadvantage and combat the side effects of conventional medicines.

Even though TM/CAM has gained an increased importance in the medical fraternity, and it has got profound uses in dentistry, it is still seldom used in clinical practice. A part of it can be attributed to the decreased awareness among the dental practitioners towards herbal medicines, lesser research and the dentist's inherent fear to opt for alternative medications. However, with sufficient research to prove the efficacy and with availability of herbal medicines in the commercial market, usage of herbal medications may be predicted to rise in the future. On the other hand, even patients are more likely to accept traditional alternatives, as it suits their customary and traditional values that have run down for generations. The patients can be motivated to use herbal medicines as a precautionary or adjunctive alternative before they sought dentists for definitive treatment. Considering the increased availability and decreased usage ratio of herbal medicines, this study was hence framed to assess the knowledge, attitude and practice of herbal drugs among dental practitioners.

Herbal drugs are used for its analgesic, antibiotic, anti-inflammatory, antioxidant, oedema-reducing properties etc., Colvard *et al.*, (2006) describes a wide variety of herbal drugs based on its analgesic, anti-inflammatory, anti-anxiety, and oral mucosal anesthesia. Amla can be used in tissue regeneration as it supports the healing and development of connective tissue. Bilberry fruit and hawthorn berry stabilize collagen, strengthening gum tissue (Singh and Purohit, 2011). Pertaining to dentistry, garlic and triphala have a good anti-microbial effect against *S.mutans* (Mathai *et al.*, 2017; Saxena *et al.*, 2017) and 1% tea tree oil and

aloe vera can be used as cavity disinfectants minimizing the occurrence of secondary caries. Herbs like aloe vera can also be used effectively to enhance the healing of extraction sockets (Nimma *et al.*, 2017). Miswak is found to have anti-fungal properties and is used for treatment against *C.albicans* and Miswak and Kalonji have significant anti-oxidant properties (Amjed *et al.*, 2017). Even though there are numerous in-vitro studies and controlled clinical trials supporting the use of herbal drugs in the dental fraternity, the practice of herbal drugs in clinical scenario is still less.

2. Materials and Methods

2.1. Study design

A cross-sectional study was designed where 300 practicing dentists were selected by non-probability convenience sampling. It comprised of 150 dentists with Bachelor's degree and 150 dentists with a Master's degree from Chennai, Tamilnadu. The inclusion criterion is any dentist with a Bachelor's or Master's degree having a clinical experience of at least 1 year. A questionnaire was framed containing 17 questions testing the knowledge, attitude and practice of herbal medicines. Validation of the questionnaire was done among 30 dentists and the results were obtained. Once the validation was done, the questionnaire was administered let out to the participants simultaneously and the results were obtained and tabulated in Microsoft Excel 2007 and it was subjected to Statistical Analysis to SPSS Software Version 20 and the frequency and percentage were calculated. Procedures were approved by the Institutional review board of Ragas dental college and hospital. Written informed consent was obtained from all participants.

2.2. Statistical analysis

All analysis were conducted with IBM Statistics SPSS version 20, and the significance level were all set at p value of 0.05 (two tailed), and the frequency and percentage were calculated. Furthermore, the discrepancy between the knowledge, attitude and practice between undergraduates and postgraduates was found out using Chi Square Test.

3. Results and discussion

Even before the evolution of modern dentistry and allopathic systems, our ancestors relied chiefly on the

naturally available resources for treatment of health ailments. There have been positive evidences about the discoveries and usage of herbal medicines in the Vedic literature, native to the Indian Subcontinent.

As evolution occurred and scientific inventions were constantly on the rise, the popularity and usage of the traditional systems met a steady decline. A part of it can be attributed to the altered concentration of drugs available through natural sources and unavoidable adulteration of natural extracts. However, little research has been made to address the meagre disadvantages of the extraction process, despite a Rs.1626 crore allocation for the research and development of herbal drugs by the AYUSH fraternity.

Herbal drugs are generally sought after by the patients, as it suits their traditional value systems. As they are already aware of the herbs, the patient feels as a “co-therapist” for the treatment. It is also preferred as an alternative to conventional medicines due to the

increase in the adverse reactions and drug interactions. Hence, dentists have to be aware of the benefits of herbal drugs and prescribe them in clinical scenarios to meet the needs of the patient. The prevalence of herbal drugs usage in the present study is found to be similar to the previous studies done by Sekhri *et al.*, (2003) among college and university students which have reported 26-79% usage for herb and dietary supplementation.

When the knowledge about herbal medicines was assessed among dental practitioners, it was found that 76% were aware and remaining 24% were unaware about herbal medicines. Majority of the dentists (86%) were aware of the side effects of herbal drugs and 94.7% of the dentists were aware of the interactions of herbal drugs with other conventional medications. 97.3% of the dentists were aware of the precautions to be taken before prescribing herbal drugs (Table 1).

Table 1. Awareness regarding herbal medicines among dental practitioners

Knowledge	Response				P value
	Very	Good	Acceptabl	Poor	
How do you rate your knowledge about herbal drugs in general?	48.7%	27.3%	24%	-	0.423
How do you rate your knowledge about herbal drug interactions?	71.7%	23%	5.3%	-	.000
How do you rate your knowledge about herbal drug side effects?	60.3%	26.7%	13%	-	0.454
How do you rate your knowledge about herbal drug precautions?	75.3%	22%	2.7%	-	.014

Thirty one percent of dentists agree that herbal drugs have beneficial effects, and 97% of dentists agree that herbal drugs have fewer side effects than conventional medicines. One hundred percent of the dentists feel that

herbal drugs do not have placebo effect, and it has not been sufficiently studied and do not have significant interactions with conventional medicines (Table 2).

Table2. Attitude regarding herbal medicines among dental practitioners

Attitude	Response			
	SD	D	A	SA
Do you agree that herbal drugs have beneficial effect?	25.3%	43.7%	31%	-
Do you agree that herbal drugs have fewer side effects than conventional medicines?	-	3%	39%	58%
Do you agree that herbal drugs have placebo effect?	78%	22%	-	-
Do you agree that herbal drugs are sufficiently studied?	76.7%	23.3%	-	-
Do you agree that herbal drugs have significant interactions with conventional medicines?	78.3%	21.7%	-	-

SD=strongly disagree; D=disagree; A=agree; SA=strongly agree

Even though dentists seem to have adequate knowledge and attitude of herbal drugs, there seems to be a significant variation in the practice of herbal drugs in clinical scenario. Only 46% of the dental professionals have prescribed an herbal drug before

(Table 3). One hundred percent of the dentists have not used herbal drugs for self-treatment, neither have they given counselling to patients about using herbal drugs. However, 53% of the dentists have reported that they still receive inquiries about herbal drugs from patients.

Table 3. Practice regarding herbal medicines among dental practitioners

Practice	Response					P value
	Never	Rarely	Someti	Often	Always	
Have you ever prescribed a herbal drug before?	54%	19%	13.7%	2.3%	11%	.000
Do you use herbal drugs for self-treatment?	76.7%	23.3%	-	-	-	0.65
Do you counsel your patients about using herbal drugs?	81%	19%	-	-	-	0.53
Do you get inquiries related to herbal drugs?	47%	27%	12.7%	4.7%	8.7%	.001

There was a significant difference in the practice mainly while prescribing and getting inquiries related to herbal drugs. In the Knowledge level there was a significant difference found in the herbal drug interactions and herbal drug precautions between dentist with a Bachelor’s or Master’s degree ($p \leq 0.05$).

This study highlights the discrepancy between the knowledge and practise of herbal medicines in clinical scenario. Even though dentists agree that they are aware of the herbal drugs, they seldom use in practise. The general awareness about the herbal drugs is similar to previous studies by Suganya *et al.* (2017) which have reported a 86.7% awareness about herbal drugs among dental practitioners. Even though a predominant number of dentists agree to the fact that herbal drugs have beneficial effects, only 46% of the dentists have prescribed a drug before which correlates with the values obtained in previous study (40.3%) by Suganya *et al.* (2017) of the dentists feel difficulties in accessing information related to the herbal drugs, which can be the pivotal reason for the hesitation in prescription of the drugs.

The main reason for decreased prescription is the inherent hesitation for the dentists and fear of the side effects. There are very minimal resources describing about the practical success of the herbal drugs. The dentists also feel difficulty in accessing information about herbal drugs. It is neither imparted in the academic curriculum. Hence, there is a constant scepticism among dentists regarding the safety and success of herbal drugs, and therefore the reduced practice.

The patient’s perspective of herbal drugs considering them as natural with no side effects clearly discerns the lack of knowledge and exposure to herbal medicines in the education system. Even though the importance of herbal drugs need not be stressed further, there still exist considerable side effects and drug interactions related to herbal medications. In our present study 71.7% of the dentists feel that they have very good knowledge about herbal drug interactions and 100% of the dentists disagree that herbal drugs have interactions with allopathic medications. This proves a clear discrepancy in the understanding of herbal drugs among dentists. Herbal drugs can produce potentially fatal complications if not used judiciously (Barnes *et al.*, 2004). Several herbal drugs may affect the bleeding, promote CNS depression and mask the effect of analgesics (Abebe, 2002).

Previous studies have not described about the educational qualification of the dentists. In this study, we categorize the dentist into two categories (dentists with Bachelor’s degree and dentists with a Master’s degree). We found there was a significant difference in the practice and knowledge related to herbal drugs between them.

Hence, the need for history taking regarding the usage of herbal drugs must also be emphasized during the initial examination. Proper knowledge about the herbal drugs should be provided right from school education, and health care professionals, in particular, should be provided with proper training and education on alternative medicines. Research has to be encouraged in this fraternity to boost up the confidence of the practitioners in dispensing herbal medications.

4. Conclusion

From the present study, a clear cut lack in the understanding of herbal drugs is evident. Dentists and other medical practitioners are willing to learn more about it, but find it difficult in accessing trustworthy information and clinical evidence on the practise of such drugs. The availability of a comprehensive list of herbal drugs is imperative at this juncture, and inter-professional research has to be encouraged to bring out the highest efficiency of such drugs.

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