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# **Research Article**

# Herbal products: a survey of students' perception and knowledge about their medicinal use

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#### **ABSTRACT**

**Background:** As herbal therapies are increasingly being used around the world because they are perceived to be free of side effects, it is important that prescribers should be made aware of their possible harm or herb-drug interactions. In this context present study was undertaken among dental students to assess their knowledge and attitude towards the use of herbal products as medicines.

**Methods:** A detailed questionnaire having both open and close-ended questions to assess students' perception, awareness and usage of herbal medication was given to 90 second year students in a teaching dental hospital. Data was expressed as counts and percentages.

**Results:** A total response rate of 93.3% was observed. 60.77% of respondents had used herbal medication for various ailments. Highest frequency of the use was recorded for ginger (37.5%) followed by neem (16.66%), turmeric (15%) and tulsi (13.33%). Elders at home (86%) was cited the most common source of herbal product information. Students were familiar with the use of clove, aloe vera, turmeric and neem but St. John's wort and Gingko biloba are ones that were generally not known to them. 67.64% indicated unawareness about safety concerns and herb-drug interactions. Most (68.65%) agreed that they did not tell their physician about taking herbal products. 58.73% preferred herbal products over allopathic medicine.

**Conclusions:** There is a need to impart knowledge to the students about the usage of herbal products as these are frequently used to treat various health problems. Students should be sensitized about their safety concerns and potential drug interactions.

**Keywords:** Herbal products, Knowledge, Herb-drug interaction

## INTRODUCTION

Products made from botanicals that are used to maintain or improve health may be called herbal products or herbal medicines. They come under the class of complementary and alternative medicine (CAM). Herbal medicines have been used for thousands of years in developing countries and more than 80% of the population relies on their use for health care needs. High prevalence of obesity, chronic disorders, pain syndromes, and anxiety or desire for good health collectively lead to their increased use in the present world. These alternative therapies are quickly gaining importance as they are perceived to be free of side effects, considering their natural origin. But actually herbal remedies are complex mixtures of organic chemicals and have many adverse effects owing to their

active ingredients or interactions with conventional drugs that can sometimes produce life threatening consequences.<sup>5</sup>

Although some medical schools around the world offer education in complementary medicine, but the actual proportion of medical schools imparting education on herbal medicines, remains low. So, in order to provide insight into the use of herbal remedies and examine issues surrounding their use, a study was undertaken amongst the students of second professional Bachelor in Dental Surgery (B.D.S) course to assess the awareness about available herbal products and the prevalence of their medicinal usage.

### **METHODS**

The study was conducted among dental students of second year in the department of pharmacology of a dental college in Northern India. A detailed questionnaire consisting of 12 questions with 2-4 options was given to each of the students. The questionnaire was based on previous studies undertaken on students or adults about their attitude regarding herbal medicines and their consumption and it was suitably modified for the present setting. The was a free will questionnaire (Appendix 1) which was validated by a pilot study done on 20 students. Students were asked to tick the option whichever they felt was most appropriate without revealing their identity in the questionnaire. The completed questionnaires were collected and analyzed for the data. Data was expressed as counts and percentages.

#### **RESULTS**

Out of the 90 students who were given questionnaires, 84 students completed and returned the questionnaires, giving a response rate of 93.3%. Mean age of the students was  $19.6 \pm 0.87$  years. Out of a total of 90 students, 76 were females. It was observed that some of the students did not attempt few questions or ticked multiple options. 52.22% of the students admitted that they were fully aware of the fact that herbal products could be used as medicine whereas 46.26% had little knowledge about it. 60.77% of respondents had used herbal medication in the past for various ailments. Herbal products most frequently used by students are depicted in figure 1.

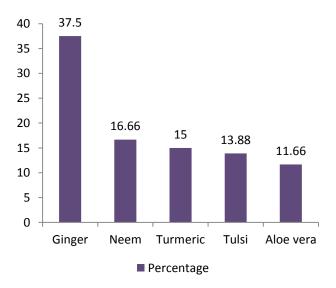


Figure 1: Herbal products most frequently used by students.

Majority (85.1%) of the respondents found the treatment to be effective. Only two out of ninety students reported side effects with the use of herbal remedies. The side effect reported were skin rash and stinging with the use of neem tablets.

The commonest sources of herbal product information were elders at home (86%), followed by media (9%) and friends' advice (5%). Students were familiar with the uses of Garlic, Cinnamon, Clove, Aloe Vera, Turmeric and Neem but St John's wort and Gingko biloba were the ones that were generally not known to them (Table 1).

Table 1: Students' familiarity with the use of different herbal products.

Herbal Product	% of students familiar with it
Turmeric	71.1%
Neem	71.1%
Aloe Vera	70%
Garlic	65.5%
Clove	62.2%
Cinnamon	53.3%
Gingko biloba	18.8%
Saint John Wort	nil

Most common ailment treated with the use of these herbal remedies was found to be cough and cold (40%), followed in decreasing order by acne (29%), throat infections (11%), wound healing (8%), toothache (6%) and other conditions like bee sting and memory enhancement (6%). Most respondents (68.65%) agreed that they did not inform their physician about taking herbal products along with the medicines prescribed by them, giving various reasons (Table 2). A total of 67.64% students indicated their unawareness about the safety concerns associated with the use of herbal products and herb-drug interactions. 58.73% preferred herbal products over allopathic medicine. Majority (82.5%) preferred herbal products because they considered Herbal products as natural and safe with no side effects (Table 3). Whopping 95.45% of students expressed their desire to know more about these products.

Table 2: Reasons for not informing the physician of herbal drug usage.

Reasons	Percentage of respondents
Viewing them as irrelevant	25.5
Of no interest to physician	21.27
Such remedies are not related to physician's field of expertise	42.55
Doctor did not ask	10.6

Table 3: Summary of reasons for preference of herbal products.

Reasons	Percentage of respondents
Natural with no side effects	82.5
Promote general well- being	10
Family tradition	5
Others (More efficacious)	2.5

#### **DISCUSSION**

This survey highlights the familiarity of students with herbal products and their use as an alternative to the conventional medicine. The prevalence of herb drug usage in the present study is found to be similar to the previous studies which have reported 26-79% usage for herb and dietary supplementation among college and university students. <sup>9-11</sup> Most common ailment associated with the use of herbal remedies was found to be cough and cold which was also reported by Gardiner et al who mentioned cough & cold, stomach or intestinal conditions as the most common ones for herb use among young adults in United States (US). <sup>12</sup>

Consistent with a study in 1000 university students in US, the present study found family to be a major source of information and recommendation concerning herbal product use. Similarly, Kara, and Rivera et al reported from studies in the Turkey and USA respectively that people generally follow the trusted advice of family members and friends. Reliance on the family advice about herbal use indicates a general lack of scientific attitude among users. Herbal remedies are as old as humankind but their traditional use is not a good indicator of its efficacy. There are many herbal medicines whose efficacy is established by placebo controlled randomized controlled trials. Only those medications which have a sufficient scientific evidence to support their use should be relied upon, instead of blindly following friend or family advice.

Informing their doctors about the simultaneous herbal medicine use was uncommon among the respondents and the reasons cited for non-disclosure mirrors some of the reasons mentioned in the previous studies. <sup>17,18</sup> In another study conducted on young adult patients in US, only 24% disclosed the use of herbal products to their health care professional. <sup>11</sup> Similarly, poor communication between patients and health care professionals regarding herbal product use was also reported by other studies. <sup>14,19,20</sup> Respondents using herbal medicines without informing the treating physician may have to bear the brunt of serious clinical implications due to the possible herb-drug interactions. It has been found that herbal products interact or interfere with the normal pharmacology of

some drugs with potentially fatal consequences. 21 Ginkgo biloba, for example has been associated with bleeding, especially when combined with conventional antithrombotics or anticoagulants.<sup>22</sup> Similarly garlic and ginkgo biloba both have an antiplatelet constituent and hence should be used with caution with other antiplatelet drugs.<sup>23</sup> Cases reporting spinal hemorrhage caused by combined use of ginkgo biloba and high dose of acetaminophen are documented in literature.<sup>24</sup> St John's wort has become the most documented herbal product which is involved in drug interactions.<sup>25</sup> This gives a clear message that all the physicians should routinely include questions related to the use of herbal medicines into their history taking, so as to avoid potentially serious consequences. Rather it is imperative that both physicians and consumers should be aware of the side effects and possibility of potential herb-drug interactions.

The side effects reported with the use of neem tablets emphasize the fact that herbal products are complex mixture of organic and inorganic chemicals, which are further modified during extraction, compounding and packaging for the market use, thereby drifting them away from their original traditional milieu. This might cause a negative impact on the patients' health.<sup>4</sup>

Until now there were no regulations or legal standards that apply to harvesting, processing or packaging of herbal products. But recently in 2011, initiative was taken up in this direction in United Kingdom where Medicines and Healthcare products regulatory agency (MHRA) was set up. It is now mandatory for all herbal remedies to be registered with MHRA. Product packaging of these herbal remedies will display a traditional herbal registration (THR) certification mark which will establish their required standards for safety, quality and evidence of traditional use. This will help in minimizing the use of potential harmful products among users. <sup>26</sup>

Majority of the participants preferring herbal medicine over allopathic medicine indicated their belief on the efficacy and safety of herbal products reflecting a positive attitude towards using these medications. At the same time quoting "Herbs are natural with no side effects" reflected their lack of knowledge and exposure to herbal medicines in their formal education. Keeping in view the sharp upward trend in the acceptance of herbal substances as part of mainstream health milieu, the need of the hour is to increase awareness and knowledge about safety, potential harmful effects, herb-drug interaction and rational use of such medicines.<sup>27</sup>

This can be achieved by organizing continuing medical education programs or incorporating relevant topics in herbal medicine in pharmacology curriculum, as majority of the students in this study also expressed their will to know more about these drugs. This will go a long way in ensuring rational use of herbal products among students and preparing future clinicians who can address such issues in their patients responsibly.

#### **CONCLUSION**

It is evident from the present study that the students' awareness of potential harmful effects and interaction between herbal medicine and conventional medicine is lacking. So it needs to be emphasized that given the widespread use of these products students should be equipped with appropriate knowledge in order to keep

them away from possible harms and at the same time preparing them for providing optimal care and counseling for their future patients.

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#### **APPENDIX-1**

#### Questionnaire

Title: Awareness about available herbal products and their medicinal usage amongst the second professional dental students.

Age/Sex -

- 1. Are you aware that natural products can be used as medicines?
  - a) No knowledge
  - b) Little knowledge
  - c) Fully aware
- 2. Have you ever used herbal product as medicine?

Yes/No

2a. If yes name the herbal product and the condition in which it is used.

Name

Condition for which used-

- 3. Was the treatment
  - a) Effective
  - b) Ineffective
- 4. What was the source of information regarding the product?
  - a) Elders at home
  - b) Media (newspaper/internet/TV)
  - c) Friend advice
- 5. Any side effect observed-

Yes/No

If yes mention-

6. Are you familiar with the name of following products?				
		Yes or No	Condition in which it is used	
	St. John Wort			
	Garlic			
	Cinnamon			
	Gingko biloba			
	Clove			
	Aloe vera			
	Turmeric			
	Neem			
7. Do you	a discuss taking these	medications with your	physician?	
Yes/	No			
8. If not 1	reason of not discussin	g about these-		
a) V	ewing them as irreleva	ant		
b) O	f no interest to physici	an		
c) Su	ich remedies are not re	elated to physician's fi	eld of expertise	
d) D	octor did not ask			
9. Prefero	ence of treatment-			
a) Herbal products or traditional medicine				
b) A	llopathic medicine			
10. If preference is Herbal products, mark reasons-				
a) Tł	ney are natural with no	side effect		
b) Tl	ney promote general w	ell being		
c) Fa	mily tradition			
d) Ar	y other reason?			
11. Are y	ou aware of safety cor	ncerns with herbal med	dicines or possible interactions with allopathic drugs?	
Yes	/No			
12. Do you wish to know more about these herbal products?				
Yes	/No			

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