

Involvement of Ayurveda in Dental Care:

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Authors

Medha Rajiv Ranjan

UG Student

Saveetha Dental College and Hospitals,
Saveetha Institute of Medical and Technical Sciences,
Saveetha University,
Chennai- 77

E-mail ID: medharranjan@gmail.com

L. Leelavathi

Reader

Department of Public Health Dentistry
Saveetha Dental College and Hospitals,
Saveetha Institute of Medical and Technical Sciences,
Saveetha University,
Chennai-77

E-mail ID: leelavathi.sdc@saveetha.com

Corresponding Author

L. Leelavathi

Reader, Department of Public Health Dentistry
Saveetha Dental College and Hospitals,
Saveetha Institute of Medical and Technical Sciences,
Saveetha University,
Chennai- 77

E-mail ID: leelavathi.sdc@saveetha.com

ABSTRACT

Introduction:

Ayurveda has been in practice since the vedic period. It is the approach towards holistic treatment of patients with fewer side-effects due to its long-lasting benefits. Ayurvedic herbal extracts maintain and coordinate the functions of the body and are also helpful in treating various oral diseases such as gingivitis, dental caries, periodontitis and inflammation of the gums. Hence a study was conducted to assess the awareness among outpatients about the advantages of Ayurvedic products and their uses in dental healthcare.

Materials and Methods:

The sample size used for the study is hundred. A self structured questionnaire had been prepared and uploaded in Google forms. The standard questionnaire in the Google forms was used for interviewer administered questions to outpatients in person. At the end of the survey all the data was collected and analysed using chi-square analysis. The chi-square analysis was done using the statistical software IBM SPSS.

Results:

The results of this study revealed that 66.1% of the study population was using ayurvedic products whereas 28.4% of them were still unaware about the advantages and effects of using ayurvedic products, 31.2% of the individuals did not use ayurvedic products for treating toothache. Majority of the graduate and post graduate respondents were

aware about the advantages of ayurvedic products in oral health when compared with respondents who had primary, secondary and higher secondary education. (p value - 0.01) 44.95% of the study population was aware that curcumin products are helpful in treating periodontal diseases. Majority of the outpatients were unaware that aloe vera can be used for reducing teeth sensitivity.

Conclusion:

From the present study it was inferred that nearly half of the outpatients were aware about the benefits of Ayurvedic products and they used it in their day to day life. Education of the participant is positively associated with awareness.

KEYWORDS: Ayurvedic products, dental care, herbal extracts, innovative analysis, oral diseases, natural treatment, traditional practitioners.

INTRODUCTION

Ayurveda is known to be one of the oldest sources of natural medicine that originated from the vedic period. It is an approach towards the holistic treatment of patients, ayurveda has been used in the treatment of several diseases and is used as a medication for consultation and surgical practises because of its fewer side-effects. Ayurveda is a strong source of organic treatment in which natural plant extracts are used for therapeutic antibacterial effects. It also plays an important role in dental health for treatment of diseases such as periodontitis, gingivitis, dental caries and other oral bacterial diseases. Chemotherapeutic drugs also called western medicine have chemical compounds that are curative, however they have drastic side-effects, an alternative approach to this is natural ways of curation such as ginger, amla, which are cost-effective with less side-effects and a better way of treatment as compared to standard treatment methods. Oral diseases can be managed by the integration of therapeutic Western drugs and Ayurvedic herbal medicines and extracts.(1) Usage of herbs in the management and treatment of oral diseases according to statistical analysis has proved to be effective in relation to special chemical receptors present in the body.

Ayurveda has various benefits, it helps in weight loss and maintenance of sound overall health, it cleanses the body and reduces inflammation and stress in the body. Various methods of Ayurvedic treatment for oral diseases were recommended such as medicinal stick chewing, use of clove oil, Datun, Amla, eucalyptus oil and aloe vera for toothache and use of herbal mouthwash which would prevent microbial growth in the oral cavity.

Ayurvedic herbal extracts maintain and coordinate functions of the body and mind, various plant products have cured ailments and created a balance between body and mind thereby maintaining sound health leading to happiness. Dental practitioners need to create awareness about the importance and effects of natural medicine and their path of curation among themselves as well as their patients, by integrating their therapeutic standard methods of treatment and Western drugs along with Ayurveda and Ayurvedic products such as herbal mouthwash, toothpaste, creams which cannot only be effective in curing oral problems but also helps in preventing them.(2) (3,4) Maintenance of oral health and its treatment involving Ayurvedic herbs used in dentistry has healed gingivitis, dental caries, periodontitis, oral lesions and prevented halitosis with beneficial effects. Method of medicinal stick chewing has been used and recommended by Vaidya and other traditional practitioners. The medicinal stick is chewed and obtained from medicinal plant stems such as margose, the stick must be extracted from healthy plants. Medicinal stick chewing is believed to help in levelling the occlusion surface and helps in plaque control. Oil pulling is another Ayurvedic method used for maintenance of oral health, it induces swishing of oil in the oral cavity which keeps the teeth and gums strong. Herbal tooth and gum rub includes rubbing of certain selected herbal extracts and spices on the teeth and gum, the spices acts on the enamel layer of the tooth by deeply cleansing it and it is also said to be protective in function, herbs such as salt, mango leaves, Amla and garlic are used for this purpose of strengthening the teeth and gums. Herbal mouth rinsing techniques help in alleviating oral ulcers, herbs such as yashtimadhu are first boiled and then allowed to cool and are rinsed when lukewarm. Lemon water rinsing and eating fresh guava also helps in preventing halitosis. A mixture of salt and lime can be used as tooth powder along with rubbing orange peels on teeth at night which can be helpful in preventing yellow and dirty teeth and

consumption of dairy products such as milk, yoghurt and including raw vegetables in the daily diet prevents tooth decay. Brushing teeth with neem twig and massaging it on the gums with a mixture of alum, mustard oil and table salt helps in preventing gum bleeding.

These are the various ways in which ayurveda can be inculcated in dental practice. Awareness about the proper and safe usage of herbal products is important,(5) Our team has extensive knowledge and research experience that has translate into high quality publications([Lekha et al. 2014](#); [Neelakantan et al. 2015](#); [Sahu et al. 2014](#); [Kavitha et al. 2014](#); [Vijayakumar et al. 2010](#))([PradeepKumar et al. 2016](#); [Dhinesh et al. 2016](#); [Lekha et al. 2014](#); [Soh and Narayanan 2013](#); [Krishnan and Lakshmi 2013](#))([Rajendran et al. 2019](#); [Ashok et al. 2017](#); [Sureshababu et al. 2019](#); [Mohan and Jagannathan 2014](#); [Menon et al. 2018](#))

Hence a study was conducted to assess the awareness among outpatients about the advantages of Ayurvedic products and their uses in dental healthcare.

MATERIALS AND METHODS

Study design and study setting: A questionnaire based study was conducted among adult patients visiting private dental colleges in Chennai.

Ethical clearance and Informed consent: Approval was obtained from the scientific review board and institutional ethical committee of saveetha university. Oral consent was obtained from all the participants prior to the start of the study.

Sample size: Sample size was arrived as 100 in reference with the key article

Sampling methodology: Non probability random sampling

Study tool: Interviewer administered questionnaire was framed in google forms and collected from out patients visiting a private hospital. The questionnaire has two parts, the first part comprises demographic details of the patients which includes gender, age and educational qualification; the second part comprises awareness and practice questions of ayurveda in oral care.

Data analysis: Data analysis was done using SPSS software (statistical package for social sciences). Descriptive statistics were done and chi square was done to find the association between variables.

RESULTS

From the study that was conducted, the results of the survey revealed that 66.1% of individuals use Ayurvedic products in their day-to-day life. According to the statistics, 28.4% of the population was still unaware about the beneficial effects of Ayurveda and its products while 70.6% were well aware about its benefits and inculcated it in their daily life. Out of the hundred outpatients from whom the data was collected 25 of them used herbal toothpaste for brushing their teeth. 55% of the outpatients use Ayurvedic products for curing toothache, the products used for treating toothache by them were the most readily available ones. 22.9% of them used clove oil, 18.3% of them use Amla whereas 31.2% of the outpatients did not use Ayurvedic products for treating their teeth. Maximum number of the outpatients preferred undergoing dental treatment instead of using ayurvedic products.

From the evaluation conducted it was found that 66.97% of the study population used ayurvedic products in their day to day life whereas 33.03% of the study population did not use ayurvedic products in their day to day life. (Figure 1) 44.95% of the study population was aware that curcumin products are helpful in treating periodontal diseases and they help in preventing pre cancerous changes (Figure 2). 32.11% of the study population was aware that eucalyptus oil can be used to treat inflamed gums whereas a majority of 39.45% of the individuals were unaware about the same (Figure 3). It was found that 44.95% of the study population was unaware that aloe vera can be helpful in reducing the chances of teeth sensitivity whereas 42.20% of the study population was unaware about the same (Figure 4). Majority of the graduate and post graduate respondents were aware about the advantages of ayurvedic products in oral health as compared with respondents who had primary, secondary and higher

secondary education(Figure 5). Majority of the post graduate respondents brushed their teeth twice when compared with respondents with primary, secondary, higher secondary and graduation (Figure 6). Respondents who had secondary education, higher secondary education, and graduates were more aware about the importance of datun in oral care when compared with respondents with primary education.(Figure 7)

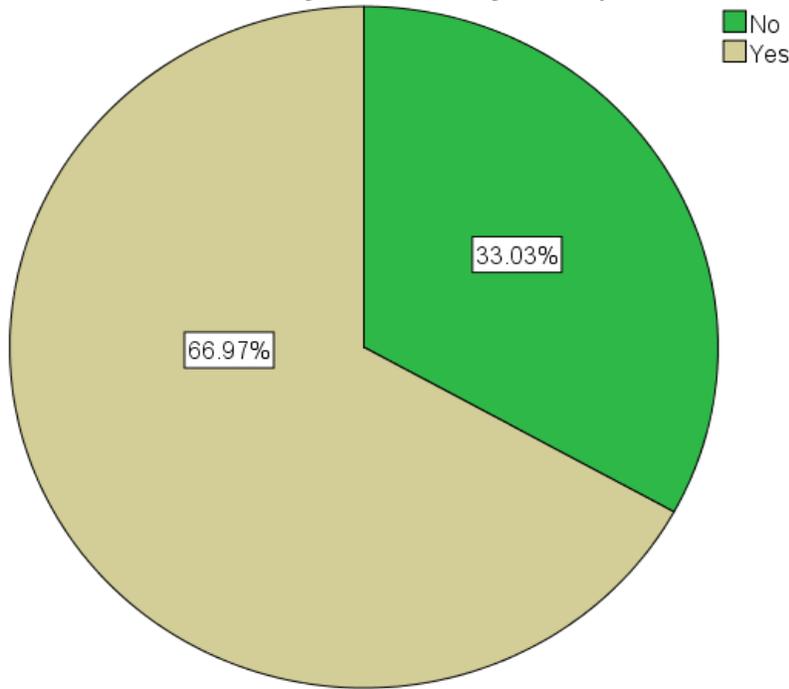


Figure 1: Pie chart showing percentage distribution of people who have used ayurvedic products. Green represents no (33.03%) and beige represents yes (66.79%) . 66.97% of the study population used ayurvedic products in their day to day life.

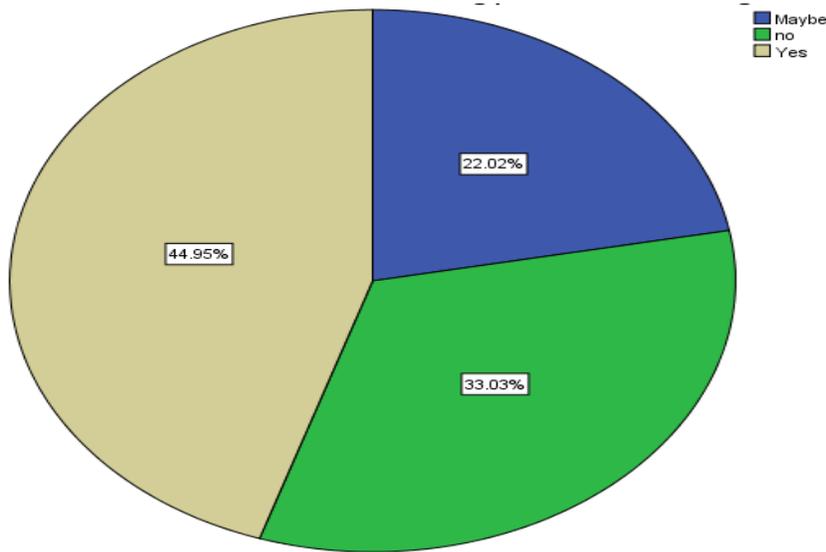


Figure 2: Pie chart represents awareness about curcumin products and their beneficial effects in treating periodontal diseases and resisting pre cancerous changes. Blue represents maybe (22.02%), Green represents no (33.03%) and beige represents yes (44.95%). Nearly half of the study population was aware that curcumin products are helpful in treating periodontal diseases and they help in preventing pre cancerous changes.

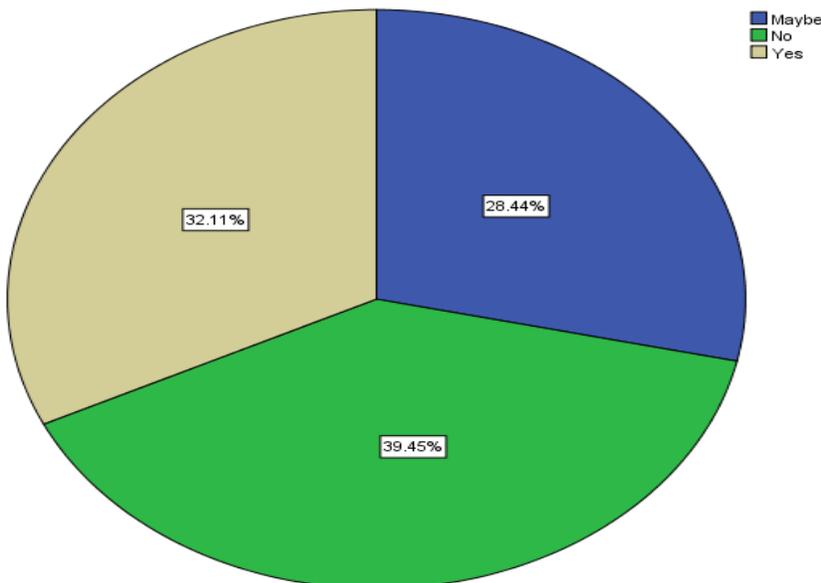


Figure 3: Pie chart represents awareness about eucalyptus oil that can be used to treat inflamed gums. Green represents no (39.45%), beige represents yes (32.11%) and blue represents maybe (28.44%) . One third of the outpatients were unaware that eucalyptus oil can be used for treating inflamed gums.

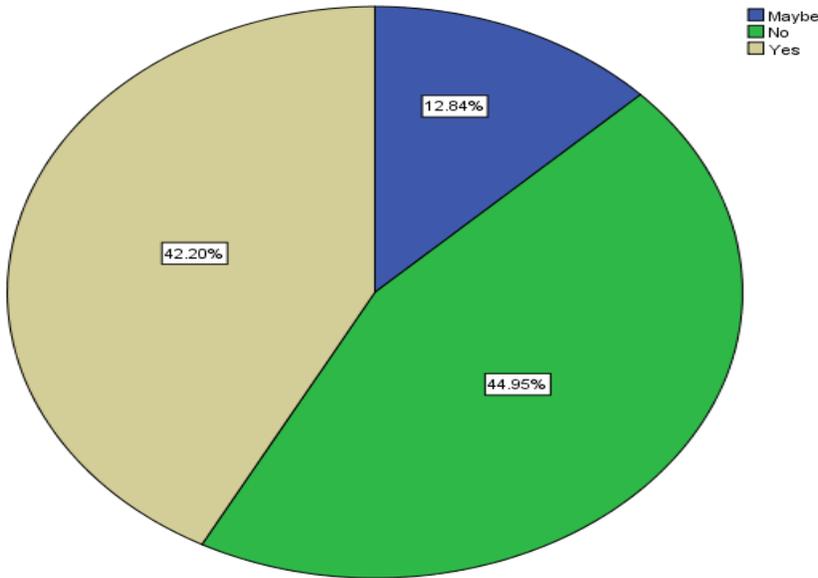


Figure 4: Pie chart represents awareness about use of aloe vera in reducing teeth sensitivity. Green represents no (44.95%), beige represents yes (42.20%) and blue represents maybe (12.84%) . Majority of the outpatients were unaware that aloe vera can be used for reducing teeth sensitivity.

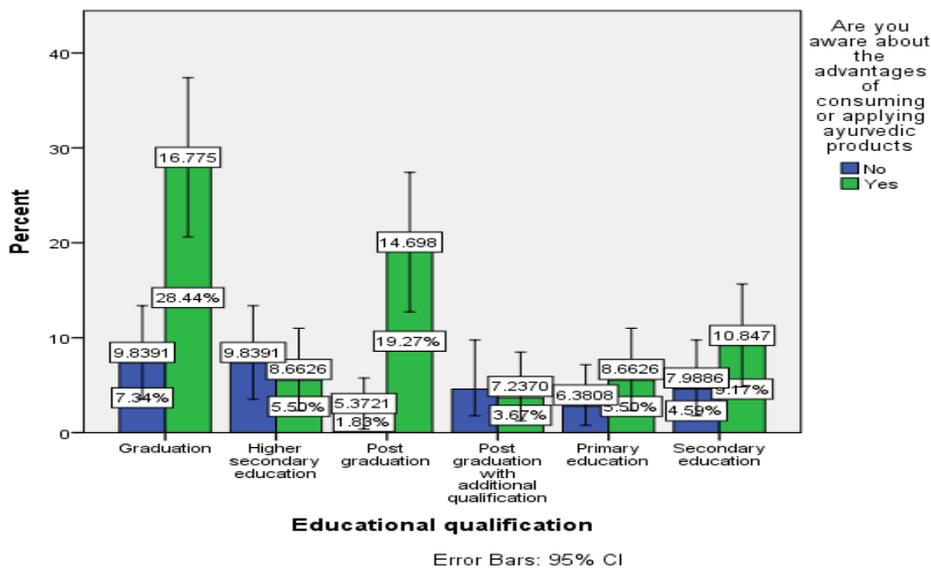
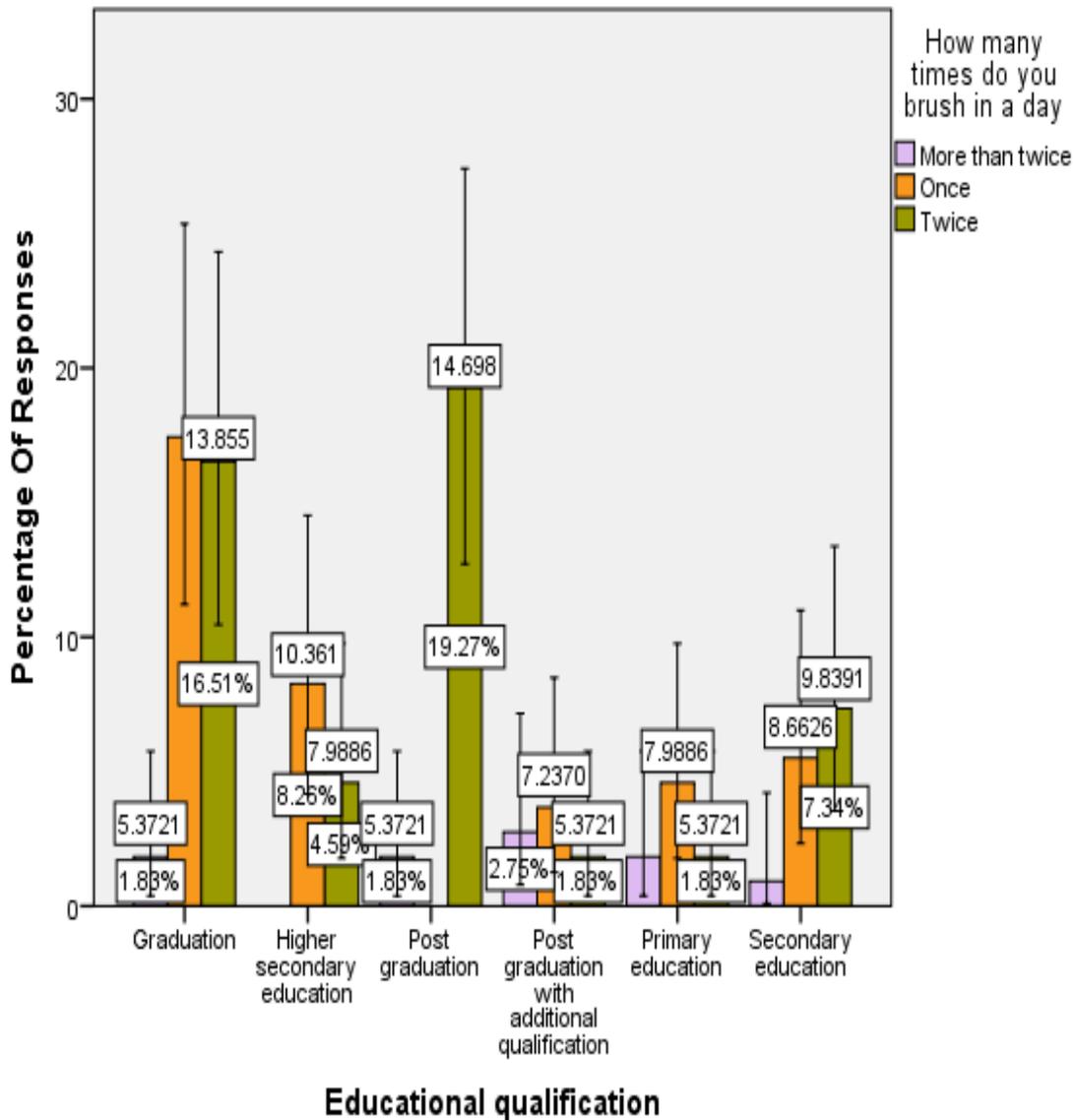


Figure 5: Bar Graph showing the association between awareness about advantages of ayurvedic products in oral health and respondent's educational qualification. Green represents no and beige represents yes. X represents educational qualification and Y represents response percentage. Majority of the graduate and post graduate respondents were aware about the advantages of ayurvedic products in oral health when compared with respondents who had primary, secondary and higher secondary education. This difference was found to be statistically significant. (Chi Square value - 14.811; p value - 0.01)



Error Bars: 95% CI

Figure 6: Bar graph showing association between frequency of tooth brushing and participant’s educational qualification. Orange represents more than twice, purple represents once and olive green represents twice. X axis represents educational qualification and Y axis represents response percentage. Majority of the post graduate respondents brushed their teeth twice when compared with respondents with respondents with primary, secondary, higher secondary and graduation. This difference was found to be statistically very highly significant. (Chi Square value - 33.248; p value - 0.000)

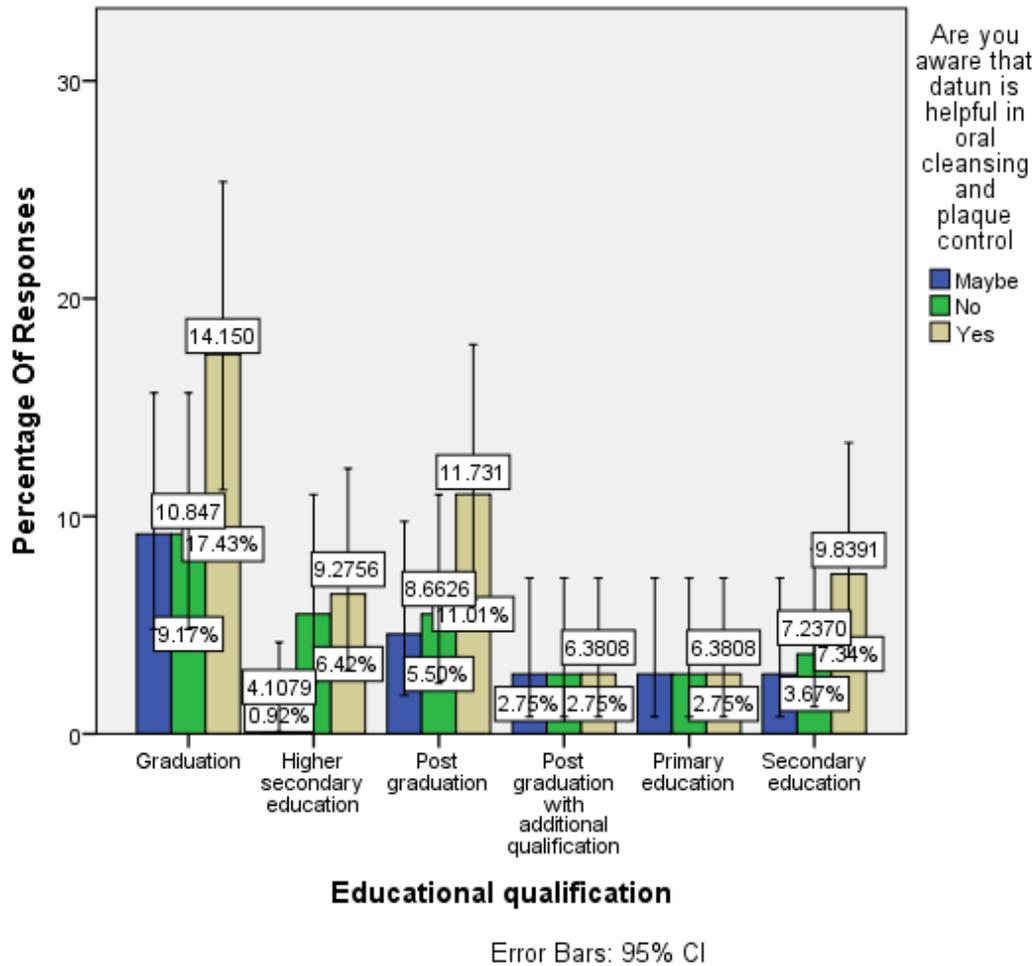


Figure 7: Bar graph showing association between awareness about datun being helpful in oral cleansing and the educational qualification of the respondents. The X axis represents educational qualification and the Y axis represents the responses. Blue represents maybe, green represents no and beige represents yes. Respondents who had secondary education, higher secondary education, and graduates were more aware about the importance of datun in oral care when compared with respondents with primary education. However, this difference was not statistically significant. (Chi Square value - 4.835; p value - 0.912)

DISCUSSION

The results of the study revealed that 70.6% individuals were aware about the advantages of ayurvedic products and 66.1% of them used these products in their day to day life. In the study conducted it was found that 49% of the general population-outpatients from whom the data was collected were aware about curcumin products which was helpful in treating periodontal diseases and that it resists pre-cancerous changes. In a previous study conducted it was found that curcumin exhibited anti-carcinogenic, antibacterial, antioxidant and antiviral activity; it is resistant to

precancerous changes. (6) In the study it was found that 18 out of 20 people who had completed graduation as a level of educational qualification were aware about the effects of datun in cleansing and plaque control whereas 5 out of 20 of higher secondary education and 12 out of 20 of post graduates were aware about the same. In a study conducted by Ajay Bhambhal it was revealed that babool chewing sticks inhibited plaque formation and it prevented microbial growth and activities, chewing datun is believed to remove plaque from the interproximal region through exertion of a mechanical cleansing action. (7) In the study it was found that 14 out of 20 postgraduates, 9 out of 20 higher secondary students and 17 out of 20 graduates were aware that eucalyptus oil can be used to treat inflamed gums. In another study conducted, it was revealed that administration of eucalyptus oil should be done after it is diluted, eucalyptus oil is used as a solvent for root canal fillings and as a potent mouthwash it is believed to reduce lesions, gum inflammation and prevent microbial growth and bacterial infections in the oral cavity. (8) In the study it was found that 19 out of 20 graduates, 13 out of 24 graduates and 10 out of 20 secondary education students were aware about the benefits of aloe vera and that is helpful in reducing teeth sensitivity. In a study conducted by SP Mangaiyarkarasi, the results revealed that aloe vera was available in the market at a medial cost which could be easily used for its antibacterial and anti-inflammatory effects, aloe vera was believed to show higher assistance towards microbial activity and it helps in significant reduction of tooth sensitivity. (9) For the patients who were unaware about the benefits of ayurveda and herbal products, this research study helped create awareness among those groups of individuals from the general population about the advantages of ayurvedic products and how it can be inculcated in dentistry.

CONCLUSION

It was concluded from the above conducted study that nearly half of the outpatients were aware about the benefits of Ayurvedic products and they used it in their day to day life. Education of the participant is positively associated with awareness.

AUTHOR'S CONTRIBUTION:

Medha Rajiv Ranjan-Literature search, data collection analysis, manuscript drafting.

L. Leelavathi- Aided in conception of the topic, has participated in the study design, statistical analysis and has supervised in preparation and final corrections of the manuscript.

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CONFLICT OF INTEREST

The author declares that there was no conflict of interest in the present study

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