

AN OBSERVATIONAL PILOT STUDY REGARDING DIFFERENT PRODUCTS USED FOR ORAL HYGIENE BY STUDENTS OF BAMS**Dr. Rituraj Tripathi*¹, Dr. Kiran Tripathi², Dr. Neha Gadgil³, Dr. Akshar Kulkarni⁴**

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ABSTRACT

This pilot observational study was planned to observe how students of Batcheler of Ayurvedic Medicine and Surgery (BAMS) of the corresponding author's institute maintain oral cleanliness. A total of 44 volunteers were included in the study by purposive sampling. The data was collected by using a Google Form. From the collected data, it was concluded that in the pilot observational study of 44 volunteers, most of the volunteers were brushing teeth once a day, using toothpaste and a soft-bristle brush. Volunteers tend to use different brands of toothpaste available in the market. Visiting the dentist as a preventive measure was uncommon.

KEYWORDS: oral hygiene, toothpaste, BAMS Students.

INTRODUCTION

Good oral hygiene is considered a reflection of a healthy status. There are multiple regimens mentioned in Dinacharya in order

to maintain oral hygiene, like Dantadhavana,^[1] Jivhanirlekhana,^[2] Kavala, Ganudha^[2] and Tamboola Patra sevana,^[3] etc. Not only Ayurveda, but also many ways are practised traditionally to maintain oral health, like the use of salt for brushing the teeth. Maintaining oral hygiene is essential for preventing aspects. Being future practitioners, BAMS students must be aware of maintaining oral hygiene. This study was intended to observe how students of Batcheler of Ayurvedic Medicine and Surgery (BAMS) maintain oral cleanliness.

Need for the study

This pilot observational study was planned to serve the following purposes –

- To check the awareness about oral hygiene among the BAMS students
- To observe the variety of products used by the students to maintain oral hygiene
- To check awareness about the daily regimens described in Dinacharya among the BAMS students
- To set background data for the research proposal as further scope.

Research question

- How is oral hygiene maintained among the BAMS students
- Which types of products are used by students of the BAMS for oral hygiene?

AIM AND OBJECTIVE

To observe how oral hygiene is maintained and which types of products are used by students of the BAMS for oral hygiene.

METHODOLOGY

Study type – pilot, survey

Sampling technique – purposive sampling

Sample size – 44

Inclusion criteria

- Student studying BAMS
- Irrespective of academic year
- Either gender
- Willing to participate in the study

Exclusion criteria

- K/C/O oral diseases

Method of collection of data – by Google Form

Steps in the study

Selection of the volunteers was done based on inclusion and exclusion criteria

↓
Informed written consent was taken

↓
The Google Form was circulated

↓
Volunteers were asked to fill out the Google form in front of the investigator

↓
The data collected was analysed.

OBSERVATIONS AND RESULTS

A total of 44 volunteers participated in the study.

Distribution of age in years

| Age in years | N | % |
|--------------|----|-------|
| 20.00 | 5 | 11.4% |
| 21.00 | 7 | 15.9% |
| 22.00 | 11 | 25.0% |
| 23.00 | 7 | 15.9% |
| 24.00 | 6 | 13.6% |
| 25.00 | 5 | 11.4% |
| 27.00 | 1 | 2.3% |
| 28.00 | 2 | 4.5% |

Out of 44 volunteers, 11.4% were of age 20 years, 1.9% were of age 21 years, 25% were of age 22 years, 15.9% were of age 23 years, 13.6% were of age 24 years, 11.4% were of age 25 years, 2.3% were of age 27 years, and 4.5% were of age 28 years.

Distribution of gender

| Gender | N | % |
|--------|----|-------|
| Female | 26 | 59.1% |
| male | 18 | 40.9% |

Out of 44 volunteers, 59.1% were females and 18% were males.

Distribution of academic year

| Academic year | N | % |
|---------------|----|-------|
| 1st year BAMS | 41 | 93.2% |
| 2nd year BAMS | 3 | 6.8% |

Among 44 respondents, 93.2% were studying at first year of BAMS and 6.8% were studying in their second year of BAMS.

Related to the frequency of brushing/cleaning the teeth

| Frequency of brushing/cleaning the teeth | N | % |
|--|----|-------|
| Once | 29 | 65.9% |
| Twice | 15 | 34.1% |

Among 44 respondents, 65.9% reported brushing their teeth once a day and 34.1% twice a day.

Related to products used for brushing the teeth

| Products used for brushing the teeth | N | % |
|---|----|-------|
| Herbal paste | 2 | 4.5% |
| Herbal paste, Neem stick (Datun), Mouthwash, Salt and mustard oil | 1 | 2.3% |
| Toothpaste | 29 | 65.9% |
| Toothpaste, Herbal paste, Neem stick (Datun) | 1 | 2.3% |
| Toothpaste, Mouthwash | 1 | 2.3% |
| Toothpaste, Mouthwash, Salt and mustard oil | 1 | 2.3% |
| Toothpaste, Neem stick (Datun) | 6 | 13.6% |
| Toothpaste, Toothpowder | 2 | 4.5% |
| Toothpaste, Toothpowder, Neem stick (Datun), Salt and mustard oil | 1 | 2.3% |

Out of 44 respondents, 4.5% reported that they use herbal paste. 2.3% reported that they use multiple options like herbal toothpaste, neem stick (Datun), mouthwash, salt and mustard oil. 65.9% reported that they use only toothpaste. Use of toothpaste along with mouthwash, use of toothpaste, herbal paste and neem stick (Datun) and use of toothpaste, mouthwash, salt, and mustard oil were reported by 2.3% of volunteers each. 13.6% reported the use of toothpaste with neem stick (Datun), whereas 4.5% reported the use of toothpaste and tooth powder. 2.3% reported the use of Toothpaste, Toothpowder, Neem stick (Datun), salt, and mustard oil.

Related to the type of toothbrush

| Type of toothbrush | N | % |
|--------------------|----|-------|
| Medium | 18 | 40.9% |
| Soft | 26 | 59.1% |

Among 44 volunteers, 40.9% reported that they use a medium soft-bristle toothbrush, where as 59.1% reported that they use a soft-bristle toothbrush.

Related to the frequency of change of the toothbrush

| Frequency of change of the toothbrush | N | % |
|---------------------------------------|----|-------|
| as and when required | 11 | 25.0% |
| Every 3 months | 18 | 40.9% |
| Monthly | 11 | 25.0% |
| Rarely | 4 | 9.1% |

Out of 44 respondents, 25% reported that they change their toothbrush as and when required. 40.9% reported that they change their toothbrush every 3 months. 25% reported that they change their toothbrush monthly. 9.1% reported that they rarely change their toothbrush.

Related to the name of the toothpaste used

| Name of the toothpaste used | Frequency | Percent |
|-----------------------------|-----------|---------|
| Ayurvedic | 1 | 2.3 |
| Close up | 6 | 13.6 |
| Colgate | 13 | 29.5 |
| Colgate max fresh | 1 | 2.3 |
| Dabur Red toothpaste | 3 | 6.8 |
| Dant kanti | 9 | 20.5 |
| Emoform paste | 1 | 2.3 |
| Herbal | 1 | 2.3 |
| Himalaya | 2 | 4.5 |
| Sensodyne | 5 | 11.4 |
| Toothmin | 1 | 2.3 |
| Vico vajradanti | 1 | 2.3 |
| Total | 44 | 100.0 |

The names of the toothpastes used by 44 volunteers were noted as follows – Ayurvedic by 2.3%, Close Up by 13.6%, Colgate by 29.5%, Colgate Max Fresh by 2.3% dabur red toothpaste by 6.8%, Dant Kanti by 20.5%, Emoform Toothpaste, herbal, toothmin and vicovajradanti by 2.3% each, Himalaya by 4.5%, and Sensodyne by 11.4%.

Related to the use of a tongue cleaner

| Use of a tongue cleaner | N | % |
|-------------------------|----|-------|
| No | 12 | 27.3% |
| Yes | 32 | 72.7% |

Out of 44 subjects participated in the survey, 27.3% reported that they use a tongue cleaner, and 72.7% reported that they don't use a tongue cleaner.

Related to any other product used for oral hygiene

| Any other product used for oral hygiene | N | % |
|--|----------|----------|
| Clove | 1 | 2.3% |
| Coconut oil | 2 | 4.5% |
| Datun | 1 | 2.3% |
| Gargling | 1 | 2.3% |
| Mouthwash | 3 | 6.8% |
| No | 27 | 61.4% |
| oil and salt paste | 1 | 2.3% |
| Salt and mustard oil | 1 | 2.3% |
| Salt water | 2 | 4.5% |
| Shauff (fennel seed) | 2 | 4.5% |
| Tooth stick | 1 | 2.3% |
| Toothpaste | 1 | 2.3% |
| Turmeric and alum | 1 | 2.3% |

The use of any other product used for oral hygiene was analysed as follows: Clove, Datun, gargling, oil, salt and paste, tooth stick, toothpaste, turmeric and alum were used by 2.3% of volunteers each. Coconut oil was used by 4.5%, whereas mouthwash was used by 6.8%. Salt water and shauff were used by 4.5% of volunteers each. 61.4% volunteers stated that they do not use any other product for oral hygiene.

Related to the use of any traditional or home remedy used for oral hygiene

| Use of any traditional or home remedy used for oral hygiene | N | % |
|--|----------|----------|
| No | 31 | 70.5% |
| Yes | 13 | 29.5% |

Among 44 subjects, 70.5% reported that they do not use any traditional or home remedies for oral hygiene, whereas 29.5% reported that they use any of the traditional or home remedies for oral hygiene.

Related to names of traditional remedies used for oral hygiene

| Names of traditional remedies used for oral hygiene | N | % |
|--|----------|----------|
| Clove | 1 | 2.3% |
| Coconut oil | 1 | 2.3% |
| Cow dung ash | 1 | 2.3% |
| Datun | 1 | 2.3% |
| Haldi ,elaichi and other ingredients mixture | 1 | 2.3% |
| Haldi namak and oil paste | 1 | 2.3% |
| Mouth freshener | 1 | 2.3% |
| Neem twig | 1 | 2.3% |
| No | 27 | 61.4% |
| Oil , turmeric powder and salt mixture | 1 | 2.3% |

| | | |
|----------------------------------|---|------|
| Oil and salt | 1 | 2.3% |
| salt | 2 | 4.5% |
| Salt and mustard oil | 1 | 2.3% |
| Salt&oil | 1 | 2.3% |
| Sauff | 1 | 2.3% |
| Tooth stick and hot salted water | 1 | 2.3% |
| Turmeric and alum | 1 | 2.3% |

From the responses of 44 volunteers, the names of traditional remedies used for oral hygiene were analysed as follows – Clove, Coconut oil, Cow dung ash, Datun, Haldi, elaichi and other ingredients mixture, Haldi namak and oil paste, Mouth freshener, Neem twig, Oil, turmeric powder and salt mixture, Oil and salt, Salt and mustard oil, Salt & oil, Sauff, Tooth stick and hot salted water and Turmeric and alum were used by 2.3% of volunteers each. Only salt was used by 4.5% of volunteers. 61.4% volunteers reported that they don't use any product.

Related to visiting the dentist regularly

| Visiting the dentist regularly | N | % |
|--------------------------------|----|-------|
| No | 40 | 90.9% |
| Yes | 4 | 9.1% |

Out of 44 volunteers, 90.9% reported that they don't visit the dentist regularly, whereas 9.1% reported that they visit the dentist regularly.

Related to the oral issues faced in the last 6 month

| Oral issues faced in the last 6 months | N | % |
|--|----|-------|
| Bad odour and bleeding gums | 1 | 2.3% |
| Blood coming in tooth | 1 | 2.3% |
| No | 32 | 72.7% |
| Pain in gums , yellowing of teeth | 1 | 2.3% |
| Pyeria | 1 | 2.3% |
| sensation to cold | 2 | 4.5% |
| Sometimes pain in molars | 1 | 2.3% |
| Sometimes pain in root of teeth | 1 | 2.3% |
| tooth ache | 3 | 6.8% |
| wisdom tooth ache | 1 | 2.3% |

Among 44 volunteers, various oral issues faced in the last 6 months were analysed as follows: bad odour and bleeding gums, Blood coming in the tooth, Pain in gums, yellowing of teeth, Pyeria, sometimes pain in molars, sometimes pain in the root of teeth, and wisdom tooth ache were reported by 2.3% of volunteers. Sensation to cold was reported by 4.5% of volunteers.

Toothache was reported by 6.8% of volunteers. 72.7% reported that they did not face any oral issues in the last 6 months.

DISCUSSION

Related to the frequency of brushing/cleaning teeth

Brushing the teeth twice a day helps to maintain oral hygiene. According to Ayurveda, twice 'Dantapavana' is advised in Dinacharya^[3] Brush your teeth twice a day for two minutes each time, typically in the morning and before bed, to effectively remove plaque and prevent decay.^[4] Some research studies stated that increasing the tooth brushing frequency to 3 times/day may be a suitable strategy to control dental caries and tooth loss among high-risk adolescents.^[5]

Related to products used for brushing the teeth

There is a variety of different products available in the market, as well as in practices from traditions. The use of a suitable product depends upon personal choice.

Related to the type of tooth brush – softness of bristle

The use of a toothbrush with different softnesses of bristles depends on personal convenience. The American Dental Association (ADA) recommends soft-bristled toothbrushes to avoid gingival injury.^[6] Ultra-soft toothbrushes are recommended for individuals with sensitive gums and teeth or signs of enamel erosion.^[7]

Related to the frequency of change of the toothbrush

The research article 'Toothbrush wear in relation to toothbrushing effectiveness,^[8] concludes that - Toothbrush wear per individual patient is fairly consistent. Toothbrushes with extreme wear were less effective than those with no or light wear. Therefore, bristle splaying appears to be a more appropriate measure of brush replacement time than the commonly used toothbrush age. Splaying of the outer tufts beyond the base of the toothbrush is a condition that indicates it is time to change the brush. The Indian Dental Association recommends that you replace your toothbrush every 3-4 months.^[9]

Related to the toothpaste used (brands)

The use of any specific brand of toothpaste is a personal preference. However, the research article titled 'Consumer Preferences and Perceptions of Ayurveda Toothpaste: A Shift towards Natural Oral Care^[10], concludes that - The results indicate that 68% of respondents prefer

using toothpaste for oral hygiene, while 26% prefer Datuin, 12% opt for tooth powder, and 10% use liquid mouthwash. A significant 90% of respondents favor Ayurvedic toothpaste over chemically formulated alternatives, with only 10% preferring chemical-based toothpaste. Furthermore, 68% of participants use regular toothpaste, while 32% use gel-based toothpaste. In terms of market share, Patanjali leads with 48%, followed by Dabur at 24%, Colgate Ved Shakti at 18%, Sudanta at 8%, and other Ayurvedic toothpaste brands collectively holding 2%. The findings also reveal that Patanjali and Dabur Ayurvedic toothpaste outperform Colgate Ved Shakti and Himalaya toothpaste in key aspects such as taste, price, packaging, and overall quality. Additionally, Patanjali's ingredients and product quality are perceived as more satisfactory, contributing to its strong brand image in the Ayurvedic toothpaste market. Overall, Patanjali and Dabur have established a stronger brand presence and consumer preference compared to other Ayurvedic toothpaste brands, with Patanjali emerging as the most favored option among respondents.

Related to the use of a tongue cleaner

According to Ayurveda, Jivhanirlekhana has a place in Dinacharya with respect to maintain oral hygiene.^[11] The research article 'Effects of tongue cleaning on Ayurvedic digestive power and oral health-related quality of life: A randomised cross-over study'^[12] concludes that Tongue cleaning may be an effective method to improve digestive power. The research article titled 'Is the oral hygiene complete without the tongue cleaning?'^[13] states that - In summary, a clean tongue not only creates a sense of freshness, but at the same time assures a pleasant breath as well as promotes overall health. Prioritising oral hygiene, including tongue cleaning, is crucial for achieving good health and well-being, contributing significantly to SDG 3: Good Health and Well-being.

Related to visiting the dentist regularly

Visiting the dentist regularly is advisable for the preventive aspect.

The research article titled 'The Importance of Regular Dental Care and Follow-ups in Maintaining a Lifetime Smile,'^[14] stated that the critical role of consistent oral hygiene practices and routine dental check-ups in maintaining long-term oral health. The research titled 'Long-term Dental Visiting Patterns and Adult Oral Health.'^[15] concludes that this prospective study supports the notion that routine dental attendance is associated with better oral health outcomes. It is therefore appropriate for current oral health messages to strongly promote regular dental visiting.

CONCLUSION

In the pilot observational study of 44 volunteers, most of the volunteers were brushing teeth once a day, using toothpaste and a soft-bristle brush. Volunteers tend to use different brands of toothpaste available in the market. Visiting the dentist as a preventive measure was uncommon.

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