

A CASE STUDY ON THE SURVEY BASED RESEARCH OF CUSTOMER'S CHOICE OF TOOTHPASTE IN RAJASTHAN'S POPULATION

Ashwin Singh Chouhan¹
Riya Raisinghani
Anam Khan
Manish Solanki
Arshi Khan

Received 21.03.2023.

Revised 12.09.2023.

Accepted 28.10.2023.

Keywords:

ABSTRACT

Toothpaste; Oral hygiene; Dental care; Oral hygiene aids; Dental carries.

Case report



Toothpastes are essential part of dental hygiene and help prevent multiple and widespread tooth and gum diseases. The customer's choice of toothpaste sheds light on this knowledge of dental hygiene among the customers of various ages, sexes, ethnicity, financial statuses, geographical locations, etc. In present article, a survey was conducted among 300 people from different parts of Rajasthan. The questionnaire used was kept consistent and covered various aspects to generate ultimate customer satisfaction, while assessing future needs and satisfaction level of consumers. Results have been evaluated with the help of pie charts and further evaluation and studies on them have been done to give detailed conclusion. The information can help understand the type of oral hygiene methods that patients feel comfortable to approach and use. It can also help to understand the knowledge level of patients regarding dental hygiene.

© 2024 Journal of Innovations in Business and Industry

1. INTRODUCTION

Although preventable, dental caries continues to be the most common non communicable disease worldwide. As much as 80% of caries incidence is experienced by only 20–25% of children, with 10% having untreated cavities, and those from low socioeconomic and minority groups experiencing significantly higher rates and at younger ages (Acharya, 2018).

Toothpastes are highly complex semisolid pastes that contain several active ingredients. Starting off with

abrasives to remove dental plaque as effectively as possible. Many different abrasives are used in toothpastes, for example, hydrated silica, calcium carbonate, calcium phosphates, perlite, alumina, and sodium bicarbonate. Different abrasives differ in relative hardness values and consequently in their cleaning efficacy and abrasion properties. In general, there is a trend of improvement to highly efficient abrasives, which show good plaque disruption or removal abilities, while having reduced radioactive dentin abrasion (RDA) values. Fluoride has been

¹ Corresponding author: Ashwin Singh Chouhan
Email: ashwinsingh26061992@gmail.com

identified as a potent caries preventive agent with significant benefits. Daily brushing with fluoride toothpaste is the most common topical fluoride application method. However, there are problems associated with fluoride applications, such as toxicity at high doses. The availability of fluoride over the past few decades has now led to the evolution of fluoride-resistant *S. mutans* and other oral bacterial species; hence, its actions on acid-producing microbes may be diminishing (Vaikunthavasan, 2014).

In addition to delivering therapeutic agents to combat caries and gingivitis, toothpastes are formulated to remove dental plaque, as well as stains, as effectively as possible while being gentle to teeth and gingiva.

This survey discusses the factors that influence the customer's choice, this information can help understand the type of oral hygiene methods that patients feel comfortable to approach and use. It can also help to understand the knowledge level of patients regarding dental hygiene (Sudhakar, 2019) Prevention of oral disease is considered to be the most effective, acceptable and efficient method to attain oral health. The attitude of people toward their own teeth, and the attitude of dentists who provide dental care, play an important role in determining the oral health condition of the population (Dagli et al., 2008) There seems to be a lack of knowledge and awareness about how to choose a dentifrice and toothbrush, so education of people on the importance of oral hygiene maintenance, proper selection and method of use of oral hygiene products is needed (Kote, 2013).

Consumer behavior is not exactly predicted one; somewhat it is predicted with the help of research activity. Starting and ending of the survey ends with only one statement 'consumer is king'. So the companies concentrate in analyzing the requirement of people thoroughly to satisfy and retaining the consumer (Van et al., 2010)

Previous experience seems to be a very strong factor in the choice of both the toothbrush and toothpaste in a study, which suggest that for as long as the respondents are satisfied with a particular product, they will stick to it (Opeodu & Gbadebo, 2017).

Another factor that may go a long way in determining the choice of toothpaste by a consumer is the content of the paste. Some consumers are concerned with the herbal contents, while others are concerned about the fluoride content. Anecdotal reports have it that the majority of consumers of toothpaste in Nigeria are more concerned about the herbal content, while the dentists are those more concerned about the fluoride content. (Mohankumar et al., 2013, Goldman et al., 2008).

Herbal tooth pastes have similar antibacterial effect as conventional tooth pastes. Tooth paste with multiple herbal ingredients is more efficient than the tooth pastes with fewer herbal ingredients in an anticariogenic property (Mohankumar et al., 2013). Although, homemade toothpaste seems dangerous, a study evaluating 84 homemade formulations stated that none of the formulas analysed contained any fluoride salts

also highlighting that it is impossible to predict their abrasiveness and microbiological quality.

There is a need for the dental professionals to be aware of the ever-increasing development and marketing of oral hygiene products from various databases. Hence, the education of people regarding the importance of oral hygiene maintenance, proper selection of oral hygiene products is essential (Logaranjani et al., 2015).

In present study, customer expectations, usage, attitude and brand comparison were studied for the toothpaste category, wherein the primary benefits that the consumer seeks while using a particular brand was analyzed with its purchasing pattern and behavior, and the core triggers to purchase their favorite brand (Dani, 2013; Vaikunthavasan, 2014; Septiani, et al., 2022). The effect of demographic factors like age, gender, occupation, income level was observed with respect to the purchase of toothpaste. Switching behavior between various brands was analyzed with the help of factors like offering attractive discounts, use of samples, price points and availability (Umoh, 2013).

2. MATERIAL & METHODS

Problem formulation: The survey addresses only what the participants answered based on their personal experiences. The number is only limited to 300 people due to limited reach of researchers involved, despite that the survey covers all regions of state widely.

A cross sectional study was conducted among 300 people from different parts of India. Questionnaires were distributed to all subjects of various age groups, gender, ethnicities, financial backgrounds and geographical locations.

Consumers choose their options among the various choices given below the questionnaire. The following gives the list of questions and the respective answer depicted in the pie chart.

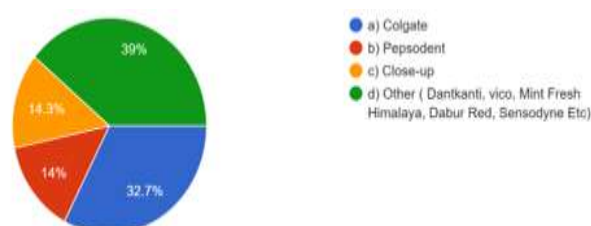


Figure 1.What is the brand of toothpaste that you are using at present?

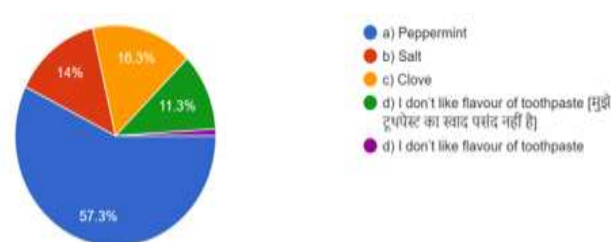


Figure 2.Which flavour of toothpaste do you prefer?

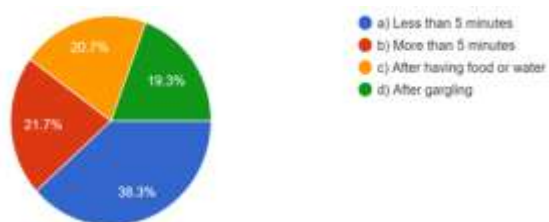


Figure 3. After how long does the flavour of toothpaste recede from your mouth?

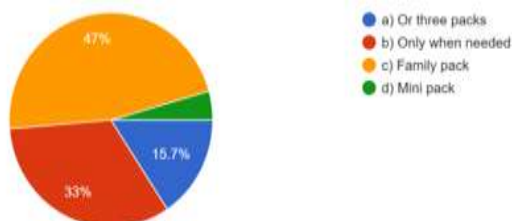


Figure 4. Do you buy toothpastes in stock or when needed?

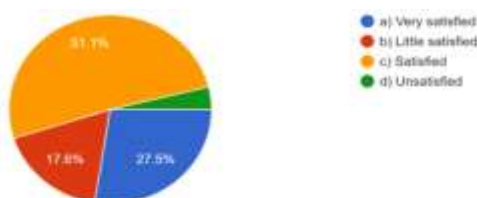


Figure 5. How satisfied are you with your current toothpaste?

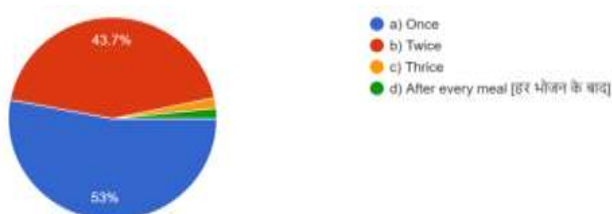


Figure 6. How many times do you brush your teeth a day?

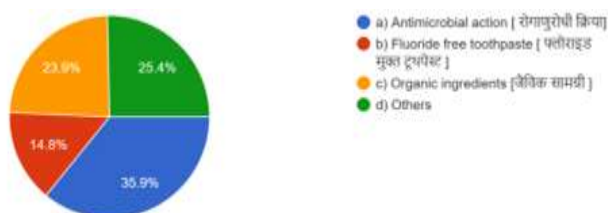


Figure 7. What additional features would you like to see in your toothpaste?

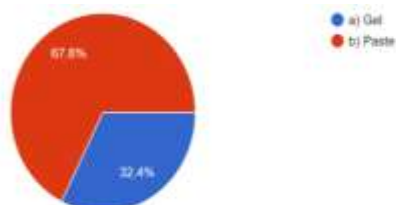


Figure 8. What texture do you desire in your toothpastes?



Figure 9. What actions are you considering to prevent tooth decay in future considering 1/3th of world population is affected by it each year?

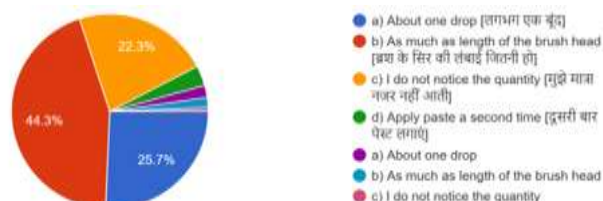


Figure 10. What is the quantity of toothpaste you use?

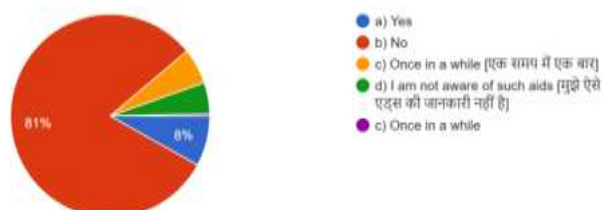


Figure 11. Do you have the habit of using any other oral hygiene aids such as mouthwash?

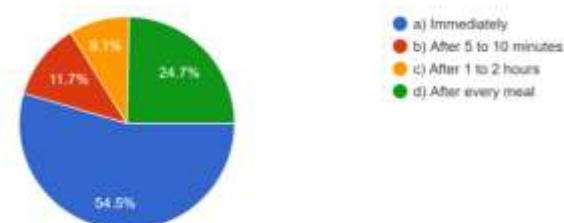


Figure 12. If Yes, How long after brushing do you use a mouthwash?

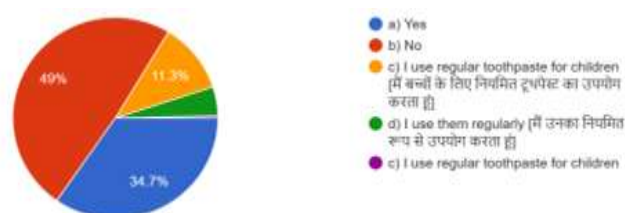


Figure 13. Do you know there are toothpastes specific for children?

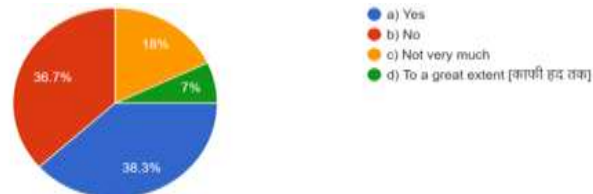


Figure 14. Does the taste of the toothpaste affect your choice of brand selection?

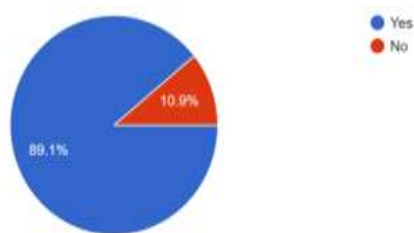


Figure 15. Do you feel like there is less awareness between people for oral hygiene?

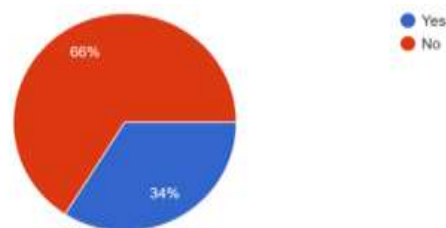


Figure 21. Does the cost of the toothpaste affect your selection?

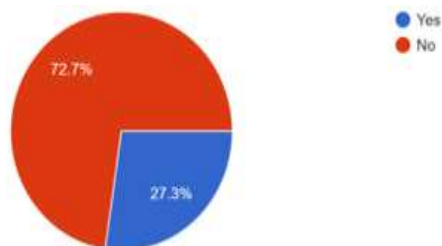


Figure 16. Have you tried using Herbal toothpaste?

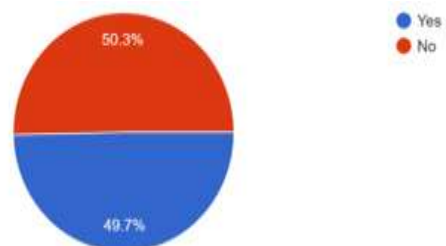


Figure 22. Do you believe packaging, advertisement or cost has nothing to do with the quality of the paste?

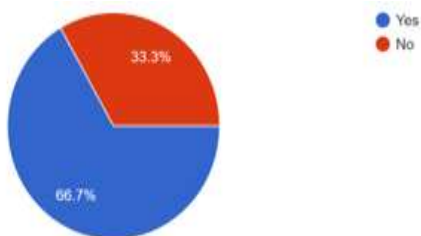


Figure 17. Is your current brand prescribed by a dentist?

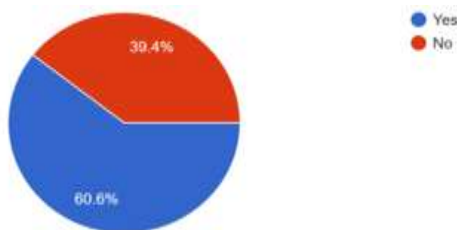


Figure 23. Does foaming action in your toothpaste affect your choices?

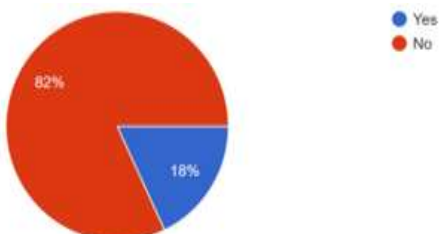


Figure 18. Have you used any natural brushing aids?

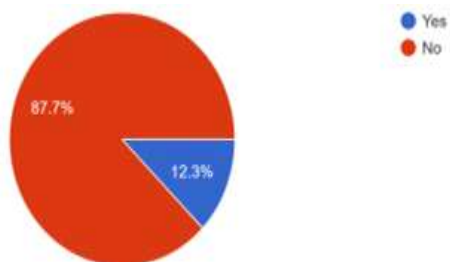


Figure 19. Do you change your toothpaste regularly?



Figure 20. If Yes, why?

3. RESULTS

A total of 23 questions were included in the survey. the first question addressed the brand being used at present by most customers and 39% customers agreed to using brands like Patanjali, Himalaya, Dabur, Sensodyne, Vico (Figures 1 to 23). The most common reason for choosing a brand was found to be Flavour as 62.3% of the population prioritises it. In another question, taste of toothpaste was not found to be a huge factor as 54.7% customers were either not affected by taste at all or it wasn't a significant factor for them, although peppermint holds the most preferred flavour spot with 57.3% votes. For about 38.3% of people, this taste recedes within 5 minutes of brushing.

Mouthwashes play an important role in dental hygiene, yet 81% of the population doesn't use them, moreover 5% of the population doesn't know of the presence of such aids in market. Similarly, toothpastes for children are unknown to 60.3% population. 89.1% need more awareness about dental hygiene as they find their current knowledge lacking. About 30% of the population has not given consideration to their dental health, and 44.7% use good quality toothpaste to prevent decay. Amount used commonly is as much as the length of their brush head for 46% people. For about

60% of the population brushing and whitening of teeth are not correlated and only 2 people in the entire population had undergone bleaching to whiten their teeth.

Herbal toothpastes have had more share in the market now than ever, it is seen as 66.7% of the population have used herbal toothpaste at least once. Yet natural brushing aids uses were limited to 18% of population. About 72.7% of the population doesn't consult a dentist for the choice of their toothpastes.

About 50% customers have been using the same brand since 1 to 2 years, and more than 37% have been using their brands for more than 5 years. Brand loyalty again comes into play as 87.7% of the population doesn't change their toothpaste brands regularly. Out of 12.3% that actually do change, it's mostly for reasons other than dentist recommendations, advertisements and results of toothpastes. Only 15.6% of the population gives importance to results of toothpaste before changing brands and 16.9% value advertisement as a factor for brand switching.

About 66% of people were unconcerned with the price of their toothpastes. Only 12% have bought them as gifts or amenities. Packaging, advertisement or cost can have association with quality of product divided the population as 50% votes were for either option. About 67% population stocks up on one or other kind of packages, most popular ones being family packs with 47% votes. 53% people brush once a day.

Future trends suggest, antimicrobial action (35.9%), fluoride free nature (25%) and organic ingredients (25%). 67.6% customers wished for paste consistency over gel. Foaming action can affect brand selection too and about 60.6% customers agreed to foaming ability affecting their choices. Customer satisfaction is the ultimate goal, and 78.6% seem adequately satisfied with their current choices.

4. CONCLUSION & FUTURE ASPECT

Decreasing trust for various ingredients used in industry has led to development of a trend and consequently the herbal products demand started growing. Dabur has first mover advantage in market, after that came brands like Himalayas and Patanjali, who have gained unique position as well. With increasing acceptance of herbal products by consumers various MNE's like Colgate, HUL and P&G have realised the demand and have launched various herbal products for the same.

Excess fluoride consumption while teeth are developing can result in visibly detectable changes in enamel structure such as discoloration and pitting. Therefore, Centers for Disease Control and Prevention recommends that children should start using fluoride toothpaste at age 2 years. Children aged <3 years should use a just the size of a rice grain, and children aged >3 years should use no more than a pea-sized amount (0.25 g) until age 6 years. Although in an in vitro study the cleaning efficacy of medium-abrasive toothpaste showed that 1.00 g has a significantly higher cleaning efficacy than 0.25 g toothpaste and 0.125 g toothpaste. Rajasthan's population should be made aware of need for children specific toothpastes and amount they have been using. To solve the problem of excess fluoride content being used in toothpastes, 10% hydroxyapatite can provide comparable efficacy with in remineralizing initial caries and preventing demineralization. Also incorporation of 2% arginine into fluoride toothpaste significantly increases its remineralization properties, as demonstrated by increased mineral gain, percent remineralization, surface Ca/P ratio with fluorine concentration, and enamel fluoride uptake.

Although the qualities like flavouring and foaming are important for consumer satisfaction but these should not be the whole and sole selling point for pastes. Proper advice from a trusted dentist should be taken before purchasing a tooth paste.

Acknowledgment: We grateful thanks to all the sincere and extremely helpful friends for their support and help for the completion of work. Last but not the least, we thankful to all those who cooperated and helped me directly or indirectly to carry out this work.

References:

- Acharya, S., Ubeja, S., Jain, P., & Loya, A. (2018). Consumer buying behaviour towards toothpaste. *International Journal of Computer Sciences and Engineering*, 6(9), 74-82.
- Dagli, R. J., Tadakamadla, S., Dhanni, C., Duraiswamy, P., & Kulkarni, S. (2008). Self reported dental health attitude and behavior of dental students in India. *Journal of oral science*, 50(3), 267-272.
- Dani, V. (2013). Buying behavior of toothpaste in Urban India: A study on Pune city. *Pacific Business Review International*, 5(11), 48-58
- Goldman, A. S., Yee, R., Holmgren, C. J., & Benzian, H. (2008). Global affordability of fluoride toothpaste. *Globalization and Health*, 4, 1-8.
- Kote, S., et al. (2013). Knowledge, attitude and behaviour for choosing oral hygiene aids among students of management institutes, Ghaziabad, India. *West Indian Medical Journal*, 62(8), 758-763.

- Mohankumar, K. P., Priya, N. K., & Madhushankari, G. S. (2013). Anti-cariogenic efficacy of herbal and conventional tooth pastes-a comparative in-vitro study. *Journal of International Oral Health: JIOH*, 5(2), 8.
- Logaranjani, A., Mahendra, J., Perumalsamy, R., Narayan, R. R., Rajendran, S., & Namasivayam, A. (2015). Influence of media in the choice of oral hygiene products used among the population of Maduravoyal, Chennai, India. *Journal of Clinical and Diagnostic Research: JCDDR*, 9(10), ZC06- ZC08.
- Opeodu, O. I., & Gbadebo, S. O. (2017). Factors influencing choice of oral hygiene products by dental patients in a Nigerian teaching hospital. *Annals of Ibadan postgraduate medicine*, 15(1), 51-56.
- Sudhakar, U., et al. (2019). A survey on the various factors that influence a customer's choice of toothpaste in mogappair population. *International Journal of Current Research*, 11(03), 1959-1964.
- Septiani, S., Indrawan, D., Arista, G. S., Rakhmat, A., Sari, Y. W., Nuzulia, N. A., & Wahyuni, W. T. (2022). Choosing Herbal Toothpaste: Study on Consumer Behavior and Preferences in The Greater Jakarta Area. *Jurnal Aplikasi Bisnis dan Manajemen (JABM)*, 8(3), 758-758.
- Umoh, G. I., Awa, H. O., & Ebitu, P. T. (2013). Markovian application to brand switching behaviour: A survey of toothpaste. *European Journal of Business and Management*, 5(22), 110-125.
- Van, G., et al. (2010). Toothpaste Brands -A Study of consumer behavior in Bangalore city. *Journal of Economics and Behavioral Studies*, 1(1), 27-39.
- Vaikunthavasan, S. (2014). Factors Affecting the Consumers' Choices of Toothpaste in Jaffna, Sri Lanka. In Proceedings of Jaffna University International Research Conference (JUICE-2012), Sri Lanka (pp. 70-8).

Ashwin SinghChouhan

Jai Narain Vyas University (New Campus) Jodhpur, Rajasthan, India

ashwinsingh26061992@gmail.com

ORCID: 0000-0003-2853-4250

RiyaRaisinghani

Jai Narain Vyas University (New Campus) Jodhpur, Rajasthan, India

riyaraisingh4@gmail.com

ORCID: 0000-0002-4414-0684

Anam Khan

Jai Narain Vyas University (New Campus) Jodhpur, Rajasthan, India

iqrakhan0210ak@gmail.com

Arshi Khan

Jai Narain Vyas University (New Campus) Jodhpur, Rajasthan, India

arshikhan91666@gmail.com

Manish Solanki

Jai Narain Vyas University (New Campus) Jodhpur, Rajasthan, India

solankimanish487@gmail.com
