

Research Article

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Marketing of Dental Hygiene Products and their Use by the Population

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ABSTRACT

In the article, maintenance of dental health (SS) is important not only for the normal functioning of the oral cavity and the long-term maintenance of tooth rows, but also for the protection of the health of the body in general, and a sales analysis was given. According to the World Health Organization, among the causes of human diseases, 20% are hereditary factors, 25% are environmental conditions, and 55% are lifestyle-related. An analysis of the sale of toothpaste in the Azerbaijani market was carried out, the results of which show that the sales leaders in the local market are Lacalut, Colgate, Paradontax, Blend-a-med, Sensodyne, Aquafresh. The population survey revealed both opportunities and barriers to the growth of the hygiene products market at the level of the toothpaste segment. The research was conducted in two stages. At the first stage, toothpastes were evaluated according to their composition, abrasive type and pH indicator. In the second stage, a set of international questionnaires was used, 534 questionnaires were distributed in 8 markets, including 4 supermarkets.

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Introduction

Dental health is a fundamental part of the overall health of the body. A healthy smile is not only beautiful, but also essential for overall health. Dental health implies freedom from congenital defects, acute and chronic pain, head and neck cancer, other problems that pose a physical and psychological threat to general health and well-being, reduce a person's functioning and quality of life. Undoubtedly, a person's dental health is formed under the influence of a number of external factors: economic conditions, social status, etc. Common factors that pose a risk to dental health include unbalanced consumption of nutrients from the main groups (insufficient intake of proteins, fats, carbohydrates, vitamins and minerals) and a lack of fluoride intake, which is necessary for human health in general. The main cause of caries is dental plaque. Plaque is a thin, sticky layer of bacteria located on the surface of the tooth. If plaque is not removed in time, tartar forms. Bacteria in plaque produce acid, which, in turn, destroys tooth enamel and forms cavities [1-3].

Maintaining dental health (DH) is important not only for the normal functioning of the oral cavity and the long-term preservation of the teeth, but also for the health of the body as a whole. For this purpose, various hygienic means have been used since ancient times - brushes, powders, pastes, floss, mouthwashes, etc. However, mistakes made in oral hygiene care lead to the fact that people from a young age face dental diseases and tooth loss. Therefore, the question of the extent to which people use oral hygiene products and the demand for them has not lost its relevance. Oral hygiene is aimed not only at an attractive white smile and fresh breath, but, first of all, at maintaining health and

preventing the development of dental diseases. Experts conditionally divide all toothpastes into hygienic and therapeutic and preventive. If there are any problems with teeth, a toothpaste should be chosen that will help solve them. For this purpose, therapeutic and prophylactic pastes are intended. They meet a fairly wide range of requirements, so they are usually divided into groups [4-6].

The increase in dental diseases worldwide is one of the main factors driving the growth of the oral care and hygiene products market. The competitive landscape of the oral care and hygiene market provides detailed information about competitors. Detailed information includes the company's financial performance, revenue, market potential, investment, production capacity. The above information relates only to the company's activities related to the oral care and hygiene market. The oral care market is a diverse, dynamic industry segment dedicated to the development, production, and distribution of products designed to maintain and improve oral hygiene and health. These products are specifically designed to address various aspects of dental care, including cleaning, preventing problems, and improving overall oral health.

The oral care market offers consumers a wide range of oral care products, such as toothpaste, mouthwash, dental floss, and teeth whitening products, each designed to meet specific needs and individual preferences. This abundance of choices provides consumers with a wide range of products to suit their oral care needs. Increasing consumer awareness about the importance of oral health and hygiene is a key factor driving the growth of the oral care products market. In recent years, there has been a noticeable shift in consumer behavior towards prioritizing oral health and hygiene. This can be attributed to various factors, such as increased access to information through

the Internet and social media platforms. As people become more aware of the link between oral health and overall well-being, they are actively seeking products and services that promote good oral hygiene practices, resulting in an increase in the demand for dental care products and regular dental check-ups [5,6].

Prominent companies are focusing on several key business strategies, such as partnerships, mergers, product innovation, and joint ventures, to expand their product portfolios and increase their market shares in various regions. Expansion and investment are the main strategic initiatives undertaken by companies in this sector. Currently, the consumer is faced with a situation where stores and pharmacies offer him a variety of toothpastes. The decision to purchase a particular toothpaste is often not based on knowledge about the composition of toothpastes, their effect on oral health, but on advertising benefits and value. The toothpaste market is widely classified, differing in composition and purpose. Depending on the additives, the pastes are divided into hygienic, therapeutic and prophylactic, special, professional, medical [2,3,7].

Hygienic toothpastes do not contain special therapeutic and prophylactic additives. They refresh the oral cavity, clean the teeth well, give them shine and whiteness. Therapeutic and prophylactic toothpastes include vitamins, extracts, salts, microelements intended for daily oral care, caries prevention, oral mucosal diseases, and periodontal disease prevention [3,8]. In addition, therapeutic and prophylactic toothpastes for children are characterized by a reduced content of fluoride in the child's body to prevent an overdose [4]. Anti-caries toothpastes are classified as therapeutic and prophylactic. They help strengthen the mineral tissue of the tooth and prevent the formation of plaque. This is achieved by adding fluorine, phosphorus, and calcium compounds to toothpastes. Then the effectiveness of fluoride-containing pastes against caries is significantly reduced.

Thus, it is advisable to use them mainly to prevent dental caries in childhood [1,9]. The use of fluoride-containing toothpastes in our country is associated with some peculiarities. The vast expanse of the country, with different climatic and geographical conditions and uneven fluoride content in drinking water and food products in different regions, does not allow for the widespread and widespread use of fluoride-containing toothpastes. In this case, toothpastes containing fluoride are not only useless, but their use can be harmful. Special toothpastes are divided into whitening and for smokers. Professional toothpastes have high whitening properties. They are used by dentists for professional cleaning and polishing teeth. Medical toothpastes are registered as medicines and are used intermittently. Anti-inflammatory pastes are recommended for use by people who experience bleeding and inflammation of the gums. The composition of this type of pastes necessarily includes extracts of medicinal plants that help normalize microflora and heal wounds. Pastes for sensitive teeth contain potassium and strontium salts that prevent tooth sensitivity. In addition, they do not contain strong abrasive components.

It is necessary to approach the whitening type of paste very carefully, since whitening occurs due to increased abrasive substances or products containing hydrogen peroxide, active oxygen. Such paste should be used no more than twice a week. Salt pastes are recommended for people suffering from periodontal disease and periodontitis. They contain various mineral salts that improve blood circulation, stimulate metabolic processes and have an analgesic effect. For children, it is recommended to use special toothpastes for children under six years of age.

The Purpose of the Study. The purpose of the study is to analyze the importance of hygiene products in the prevention of oral diseases, consumer preferences in the choice of toothpastes.

Materials and Research Methods

The study was conducted in two stages. In the first stage, the mentioned pastes were evaluated according to their composition, type of abrasive and pH value. The pH indicator was determined using a universal paper indicator. In the second stage, a survey was conducted among 534 market visitors in Baku.

Research Results and Discussion

The leaders of the oral care products market are Colgate-Palmolive, Procter & Gamble Company, Church & Dwight Co., Inc, GlaxoSmithKline PLC, Unilever PLC. The global oral care products market is segmented by product type, distribution channel and geography. The market is segmented by distribution channels: supermarkets, hypermarkets, convenience stores, pharmacies, online stores and others. Based on visual data obtained from testing with acrylic plates that most closely resemble tooth enamel in hardness, we can rank the tested toothpastes by degree of abrasiveness (from highest to lowest) as follows:

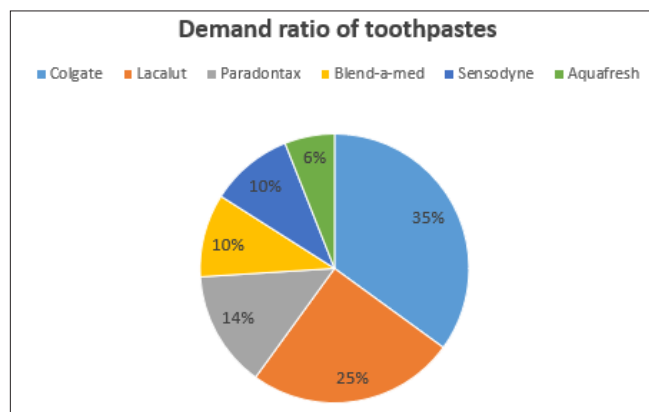
- "Lacalut" (Aqueous Silicon Dioxide)
- Colgate (Calcium Carbonate)
- Paradontax (Silicon Dioxide)
- Blend-a-Med (Compound of Wetted Silicon)
- Sensodyne (Silicon Dioxide)
- Aquafresh (Silicon Dioxide)

From this study it is clear that the vast majority of abrasives currently used are silica and chemically precipitated chalk or calcium carbonate. It should be noted that although chalk provides high-quality cleaning of the tooth surface at a fairly low cost, its disadvantage is the inevitable interaction of fluoride ions present in toothpaste with free calcium ions, which leads to the formation of insoluble calcium fluoride and uncontrolled calcium. decrease in the concentration of active fluorine. However, silicon dioxide meets all safety requirements for food and pharmacological products, is well compatible with all other components of toothpastes and does not reduce the activity of fluoride-containing drugs and surfactants, antibacterial, vitamin and other additives [5,8].

Table

Toothpastes	Most popular	Ph	Toothpaste demand ratio, %
Colgate	1	7	35
Lacalut	2	6	25
Paradontax	3	8	14
Blend-a-med	4	7	10
Sensodyne	5	6	10
Aquafresh	6	7	6

The pH value of the toothpaste primarily affects the restoration of the acid-base balance in the oral cavity. Since the mouth is acidic due to the action of bacteria, the higher the pH value, the more active the neutralization process.



Figure

It was found that pastes containing silicon dioxide (with the exception of Lacalut paste, which is an aqueous solution of this substance) are superior in terms of abrasive properties to those containing calcium carbonate, which neutralizes all the beneficial properties of fluoride. The acidic environment of the oral cavity, formed as a result of the activity of bacteria, is better neutralized by pastes with a pH value higher than 7.5, but not more than 10.5. According to the analyzed questionnaires, the most common in terms of frequency of choice is Colgate paste (chosen by 35% of respondents). In second place in terms of frequency of purchase is “Lacalut” toothpaste, which is used by 25% of respondents, and the share of those satisfied with the quality of the product is 90% of respondents.

Conclusion

The toothpaste market is widely classified, differing in composition and purpose. In order to prevent dental diseases, oral hygiene should be carried out regularly. Pastes containing enzymes improve the hygienic condition of the oral cavity. They are recommended for use in oral hygiene in the treatment of periodontal diseases and oral mucosa

in the acute stage [2,5]. The most important for human oral health are fluorides, which strengthen tooth enamel and prevent the development of caries. Based on comparative studies of toothpastes, it is clear that toothpastes containing silicon dioxide (with the exception of Lacalut paste) are superior in abrasive properties. It has been established that the frequency of oral care is also influenced by the quality of the hygiene products used, their selling price, the level of information on dental health, the tendency to hygienic procedures, financial status, the number of members of the family and other factors.

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