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The Effectiveness of Gargling with Salam Leaf Boiled Water Reducing Plaque Score

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ABSTRACT

Background: Health is the most important part in human life. Plaque is a soft deposit, which is firmly attached to the surface of the teeth. Bay leaves (Syzygium polyanthum) which contain active compounds such as tannins, flavonoids and essential oils that can inhibit bacterial growth. Title: The Effectiveness of Gargling with Bay Leaf Decoction on Decreasing Plaque Score in Adults in Sukabangun 1 RT 19 Sukarami District. Objective: To determine the effectiveness of gargling boiled water with bay leaves on reducing plaque scores. Methods: this study uses a quasi- experimental research method (quasi-experimental). Respondents: adults in Sukabangun 1 RT 19, Sukarami District. Results: The results of the One Way Annova statistical test on plaque index examination before gargling with boiled water, 1 hour after, and 2 hours after with good, moderate, and bad criteria, obtained a P-value of 0.010 which means significant, meaning for gargling water Salam leaf decoction with PHP can reduce plaque scores. Conclusions: 1. The average plaque index before gargling with bay leaf boiled water was 3.09 (Medium) 2. The average decrease in plaque index after gargling was 2.45 (Medium) 3. The effectiveness of bay leaf decoction is able to reduce plaque scores in the treatment before rinsing and after rinsing, this is evidenced by the decrease in plaque scores and the One Way Annova statistical test.

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1. INTRODUCTION

Health is the most important part of human life. A person is said to be healthy not only from his body but also in the oral cavity and teeth. Maintaining the health of one's teeth and mouth can avoid caries and periodontal disease. Caries and periodontal disease are still serious problems in dental and oral health, especially in the adult community in Indonesia (Salsabila, 2021).

Plaque is a soft, colorless deposit that adheres tightly to the tooth surface consisting of microorganisms that multiply in an intercellular matrix when a person neglects dental and oral hygiene. Plaque containing these bacteria always forms on the surface of the teeth even though the teeth are always cleaned (Pratiwi, Setianingtyas, 2018)

Bay leaves (Syzygium polyanthum) are often used as a flavor enhancer in dishes containing tannins, phenols, flavonoids, saponins, triterpenes, polyphenols, alkaloids and essential oils. The content of active compounds such as tannins, flavonoids and essential oils consisting of eugenol and citral provides anti-bacterial properties, the content of these active compounds can inhibit the growth of Streptococcus sp in the oral cavity, and can inhibit the growth of Candida albicans.

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The results of the research from the review article above from the data. According to research by Niken Merrystia (2013), the results showed that bay leaves contain ingredients such as tannins, flavonoids, and essential oils consisting of eugenol and citrate. Flavonoids, essential oils, and tannins are active ingredients that have antimicrobial effects.

2. RESEARCH METHOD

The method used in this study is a quasi-experimental research method (quasi-experimental), this experiment has not or does not have the characteristics of an actual experimental design, because the variables that should be controlled or manipulated The sample in this study is Adults in Sukabangun 1 RT 19 Sukarami District with a sample of 32 people.

The data analysis of this research is univariate and bivariate analysis. Univariate analysis aims to explain or describe each research variable, while bivariate is an analysis carried out on several variables that are suspected to be related or correlated (Notoadmojo, 2018). In this study, statistical testing can be carried out, namely One Way Annova.

3. RESULTS AND ANALYSIS

This research was conducted in Sukabangun 1 RT 19, Sukarami District. Respondents in this study were adults as many as 32 people. Where respondents were divided into 2 groups, namely 16 people given treatment with gargling water boiled bay leaves and 16 people given mineral water gargling treatment. To determine the effect of bay leaf decoction in reducing plaque scores, plaque scores were measured after gargling with bay leaf boiled water. The plaque index used was the PHP (Personal Hygiene Performance) plaque index. Based on research conducted on adults in Sukabangun 1 RT 19, Sukarami District in 2022, the following results were obtained.

Tabel 3.1
Distribution of plaque index frequency before gargling with boiled water of bay leaves and mineral water on decreasing plaque index in adults in Sukabangun 1 RT 19 Sukarami District

	Criteria	Bay Leaf Stew		Mineral Water	
		N	%	N	%
Before gargling	Good	0	0	2	12,5
	Medium	11	68,75	12	75,0
	Bad	5	31,25	2	12,5

Source: Primary Data 2022

From the table above, it is found that the highest frequency results before gargling with mineral water in the medium category, because there are sufficient magnesium, calcium, and sodium content for dental health.

Tabel 3.2
Distribution of plaque index frequency after 1 hour and 2 hours using boiled water of bay leaves and mineral water on the reduction of plaque scores in adults in Sukabangun 1 RT 19 Sukarami District

		Bay Leaf Stew		Mineral Water	
1 hour after gargling	Criteria	N	%	N	%
	Good	1	6,25	2	12,5
	Medium	15	31,25	13	81,25
	Bad	0	0	1	6,25

		Bay Leaf Stew		Mineral Water	
2 hour after gargling	Criteria	N	%	N	%
	Good	1	6,25	1	6,25
	Medium	15	31,25	13	81,25

Bad	0	0	2	12,5

Source: Primary Data 2022

From the table above, it was also found that the highest results were 1 hour after and 2 hours after boiling water of bay leaves with a medium category, because in bay leaves there are tannins, flavonoids and essential oils that can reduce plaque scores.

Tabel 3.3
Distribution of the average score of bay leaf decoction plaque and mineral water plaque scores on respondents

	N	Average plaque score before	Average plaque score after 1 hour	Average plaque score after 2 hours	Average plaque score reduction	Average difference before 1 hour after	Average difference 1 hour – 2 hours
Bay Leaf Stew	16	3,09	2,19	2,07	2,45	0,9	0,12
Mineral Water	16	2,41	2,34	2,44	2,39	0,07	-0,1

Source: Primary Data 2022

The table above shows that gargling boiled bay leaves is better than mineral water in reducing plaque. Judging from the average on the examination of plaque index scores from before to 1 hour and 2 hours after gargling.

Tabel 3.4.
One Way Annova Statistical Test before gargling bay leaves, 1 hour after gargling, 2 hours after gargling.

Crteria	Bay Leaf Stew			p value
	Before gargling	1 hour after	2 hour after	
Good	0	1	1	0,010
Medium	11	15	15	
Bad	5	0	0	

Sumber : Data Primer,2022

Based on the results of the One Way Annova Statistic Test on plaque index examination before gargling with boiled water for 1 hour and 2 hours after gargling, the p-value = 0.010. Because p <0.05, which means that there is a significant (significant) effect on the leaf boiled water.

From tables 3.1 and 3.2, it can be concluded that the total frequency of plaque index before gargling with boiled water of bay leaves, 1 hour after gargling, and 2 hours after gargling has a difference with the total frequency of plaque index in mineral water, so it can be seen from the table that the use of water bay leaf decoction is able to reduce plaque index scores. Because the bay leaf contains active compounds such as tannins, flavonoids and essential oils consisting of eugenol and citral which provide anti-bacterial properties, the content of these active compounds can inhibit the growth of Streptococcus sp in the oral cavity, and can inhibit the growth of Candida albicans. The content of these flavonoids can cause a decrease in the plaque index score on the teeth.

From table 3.3, it can be concluded that the average score for gargling with bay leaf after 1 hour is 2.19 and after 2 hours is 2.07, while the average score for gargling with mineral water after 1 hour is 2.34 and after 2 hours. 2.44. So there is a difference between the average gargling water boiled bay leaves and the average gargling water. However, when gargling the boiled water of bay leaves, there were weaknesses in the respondents, namely, there were some respondents who were a little uncomfortable when gargling because of the rough taste on the tongue.

From table 3.4 it can be concluded that the results of the One Way Annova Statistical Test on plaque index examination before gargling with boiled water of bay leaves, 1 hour after, and 2 hours after with good, moderate, and bad criteria, obtained a p -value of 0.010 which means a significant effect. significant because (p<0.05).

Based on several opinions from the results of the research from the review article above from the data. According to research by Niken Merrystia (2013), the results show that bay leaves contain ingredients such as tannins, flavonoids, and essential oils consisting of eugenol and citrate. Flavonoids, essential oils, and tannins are active ingredients that have antimicrobial effects. So, it can be concluded that based on the results of research

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conducted on gargling boiled water of bay leaves with PHP values, there is a statistical difference because significant results are obtained, meaning that gargling boiled water of bay leaves with PHP can reduce plaque scores .

4. CONCLUSION

Based on the results of research and discussion on the effectiveness of gargling boiled water with bay leaves on reducing splak scores in adults in Sukabangun 1 RT 19, Sukarami District in 2022, the following conclusions can be drawn:

1. The average plaque index before gargling the boiled water of bay leaves is 3.09 (Medium)
2. The average decrease in plaque index after gargling was 2.45 (Medium)
3. The effectiveness of bay leaf decoction is able to reduce plaque scores in the treatment before rinsing and after rinsing, this is evidenced by the decrease in plaque scores and the One Way Annova statistical test.

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