

Oral Health Practices Among Adults Of Badjao Community in Barangay Malitam, Batangas City

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Abstract – The Philippines, a country with a rich cultural diversity, is home to between 14 and 17 million Indigenous People (IPs) who represent 110 ethnolinguistic groups. The names of the native communities are based on their location and specialization. Originally from the Sulu Islands in Mindanao, Badjaos are referred to as the sea tribes that live in houseboats. Some Badjaos have moved to metropolitan areas in search of additional employment and revenue due to their lack of entitlement and bad living conditions, but the majority of them end up as beggars due to their lack of education, knowledge, and skills. For this research, a survey was conducted to find answers through data collection. As far as data collection tools were concerned, the research involved a checklist type of questionnaire, which was used as an interview guide. The study utilized a two-part adapted survey questionnaire mainly from WHO's OHQ for adults (2013) and Kapoor et al. (2014) oral hygiene awareness and practice among patients visiting the Department of Periodontology at a Dental College and Hospital in North India. The first part deals with the respondent's socio-demographic variables such as age, sex, occupation, civil status, and educational attainment. The second part assesses the knowledge and practices of the respondents related to their oral hygiene. The study results showed that most respondents exhibit acceptable oral routine habits and the importance of these practices and their impact on oral health. Moreover, when grouped according to profile variables, the differences in the respondents' oral health habits were interpreted to be significant in terms of occupation. Age and educational attainment were interpreted to be highly significant. On the other hand, sex and civil status were translated as not significant. The difference in responses on awareness of oral health when grouped according to profile was found significant for age, sex, and occupation while educational attainment attained a high significant response. However, civil status was interpreted as not significant. This research designed a proposed plan of action to improve the oral health practices of the Badjao community in Barangay Malitam, Batangas City.

Keywords – Badjao Community, Indigenous People, Oral Hygiene, Awareness to Oral Health

INTRODUCTION

One of the oldest dental associations in the world, the FDI World Dental Federation, described a new idea for oral health as “multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence and without pain, discomfort, and disease of the craniofacial complex.” The purpose of oral health education is to raise awareness, which may encourage people to adopt healthy habits that will benefit their oral health.

The Philippines, a country with rich cultural diversity, is home to between 14 and 17 million Indigenous People (IPs) who represent 110 ethnolinguistic groups [1]. The names of the native

communities are based on their location and specialization. However, the majority of their indigenous population now lives outside the communities they were accustomed to, among them is the Badjao community. Originally from the Sulu Islands in Mindanao, they are called the sea tribes that live in houseboats. By depending on them, they try to live decently as fishermen, divers, and navigators, on the water. Some Badjaos have moved to metropolitan areas in search of additional employment and revenue due to their lack of entitlement and bad living conditions, but most of them end up as beggars due to their lack of education, knowledge, and skills [2].

The Badjao migrants' lack of knowledge about health and sanitation contributed to the spread of illnesses like diarrhea, pneumonia, skin allergies,

cough, flu, and even dental caries. The participants' ethnicity and socioeconomic status may also contribute to the development of dental caries. Family priorities were sometimes not centered on teeth because of how one was raised [3].

This study was pursued to dive deeper into the oral health status and practices of the Badjao community since the prevalence of dental caries is crucial. Oral health for them is usually left unnoticed because of ignorance and just as important, they were not taught the benefits of maintaining a healthy mouth or how to take care of their teeth. Practicing oral hygiene is frequently expensive to maintain since they have so many other things to think about and worry about in their day, that care of their teeth isn't always on the front of their minds. Moreover, they do not realize that their bad habits, such as smoking and/or chewing, can cause a permanent condition called periodontal disease. Furthermore, prevention is a crucial strategy for promoting good oral health in the Badjao community. The tribe's willingness and patience to learn are more crucial than how quickly they absorb the oral health practices being taught to them.

The Badjao community experiences poverty has limited access to healthcare and leads traditional lifestyles that may put their oral health at danger. Effective programs aimed at promoting and preventing oral health must consider their distinct cultural behaviors and beliefs. Comprehensive information on dental health in the Badjao population is, nevertheless, lacking. Through its insights into the frequency, severity, and causes of oral health issues, research can help close this knowledge gap. It is possible to create targeted treatments, such as expanding dental care accessibility, encouraging good oral hygiene habits, and offering culturally competent health education. Researching oral health in the Badjao community can help other vulnerable communities and advance our understanding of oral health inequities among marginalized populations.

OBJECTIVES OF THE STUDY

This study determined the oral health practices of the Badjao Community in Barangay Malitam, Batangas City. More specifically, it described the demographic profile of the Badjao in terms of age, sex, civil status, occupation, and current educational status and assessed their oral health practices. It also determined the significant difference in responses on oral health practices when grouped according to profile.

MATERIALS AND METHODS

The overall strategy used by the researchers to identify solutions to the research questions that are the basis of the study is known as the research design. Descriptive research seeks to characterize a population, circumstance, or phenomenon correctly and methodically, according to Shona McCombes [4]. By gathering quantitative data for statistical analysis of the population sample, it employs a quantitative research methodology. A descriptive study can look at one or more variables using a wide range of research techniques. This study used a quantitative descriptive research design to accurately describe the personality traits of a specific person and the circumstances of a group to assess the oral health practices of the Badjao Community in Barangay Malitam, Batangas City.

The method of purposive sampling was used to develop the sample of the research under discussion. According to this method, which belongs to the category of non-probability sampling techniques, sample members are selected based on their knowledge, relationships, and expertise regarding a research subject. Using the Raosoft calculator to get the sample size from the population of 845 adult Badjaos, the participants of this study were 265 Badjaos aged 18-60 years old who are knowledgeable about their oral health status and practices. Reliability results showed that the Cronbach's alpha for oral hygiene practices (0.703), and awareness of oral health (0.738) suggest that the items have an acceptable level of internal consistency. The first part deals with the respondent's socio-demographic variables such as age, sex, civil status, and educational background. The second part assesses the oral habits and respondent's awareness related to their oral hygiene. The procedures used by the researchers to collect and obtain the data required for the investigation are outlined below.

The researchers properly constructed a questionnaire in which the questions were based on the study's statement of the problem. The researchers have an authorized professional in dentistry to review the questions to be asked on the questionnaire and ensure they are relevant to the research topic.

Following the final approval of the questionnaire, the researchers requested permission to administer the study via letter to the research adviser and the department Dean. Upon approval, the questionnaires were distributed individually to the study's participants. The researchers then conducted the survey and organized the data for the statistician to review.

Frequency and percentage distribution were used to describe the demographic profile of the Badjao in

terms of age, sex, civil status, occupation, and current educational status. Weighted mean and rank were used to determine the oral health practices. A four-point Likert Scale was used to measure the respondent’s oral health practices. The Shapiro-Wilk Test result showed p-values of all variables were less than 0.05, meaning the data set was not normally distributed. Therefore, the Mann-Whitney U test for two groups and the Kruskal Wallis test for more than two groups were used as part of the non-parametric tests to determine the significant differences. All analyses were performed using SPSS version 28.

The procedure is explicitly stated and explained as the researchers work with the respondents. The respondents' consent as well as the confidentiality of their information were considered. Finally, no respondents were hurt or disrespected while participating in this research. A thorough description of the research, including its risks and benefits, was given. The study has been approved by the LPU-B Research Ethics Review Committee.

RESULTS AND DISCUSSION

The distribution of respondents' profiles based on age in our research study reflects a diverse participant demographic. The majority of respondents fall within the 31 to 45-year-old category, constituting 40.8% of the sample with a frequency of 108. Following closely, the age group of 18 to 30 years old comprises 32.1% of the respondents, with a frequency of 85. The 46 to 60 years old category represents 27.2% of the participants, with a frequency of 72. This distribution indicates a balanced representation across different age brackets, allowing for a comprehensive analysis of oral health habits and awareness within a varied age range. Understanding the perspectives of individuals at different life stages is crucial for tailoring oral health interventions and educational campaigns that cater to the diverse needs of the population.

In analyzing the distribution of respondents' profiles, the results reveal a noticeable gender disparity among participants. Most respondents identified as female, comprising 61.5% of the total sample, while males constituted 38.5%. This gender distribution underscores the importance of considering gender-specific perspectives in the subsequent analysis of research findings. The relatively higher percentage of female participants may influence the generalizability of results and necessitate a thoughtful examination of potential gender-related implications within the research context. Researchers should be attentive to the

potential impact of this gender skew on the study's outcomes and ensure that conclusions drawn are reflective of the broader population under investigation.

Table 1
Distribution of Respondents' Profile

Profile Variables	Frequency	Percentage
18 - 30 years old	85	32.1
31 - 45 years old	108	40.8
46 - 60 years old	72	27.2
Male	102	38.5
Female	163	61.5
Employed	21	7.9
Self-employed	77	29.1
Unemployed	148	55.8
Student	19	7.2
Married	203	76.6
Single	62	23.4
Elementary	80	30.2
High School	60	22.6
College	11	4.2
Not able to go to school	114	43

The examination of respondents' profiles, particularly in terms of occupation, sheds light on the diverse employment statuses within the study cohort. The majority of participants fall into the unemployed category, constituting 55.8% of the sample, highlighting the prevalence of this demographic group in the study. Meanwhile, the self-employed group represents a substantial portion at 29.1%. Employed individuals make up 7.9% of the respondents, whereas students comprise 7.2%. These findings underscore the importance of recognizing the occupational heterogeneity within the sample, as it may influence perspectives, experiences, and responses. Researchers should be cognizant of these occupational dynamics when interpreting and generalizing the study's outcomes, ensuring that the conclusions drawn are reflective of the diverse occupational landscape represented by the research participants.

The analysis of respondents' profiles, with a focus on civil status, reveals a substantial prevalence of married individuals within the study cohort, constituting a significant majority at 76.6%. This dominance of married participants suggests that the research may reflect the perspectives, experiences, and behaviors more representative of individuals in marital unions. Conversely, the single respondents, while comprising a smaller proportion at 23.4%, represent a

noteworthy demographic that warrants consideration in the interpretation of study outcomes. Understanding the distribution of civil statuses among participants is crucial for contextualizing findings, as marital status can impact various aspects of individuals' lives and potentially influence the research variables under investigation. Researchers should be attuned to the implications of this civil status distribution to ensure a nuanced and comprehensive understanding of the study's outcomes.

The examination of respondents' educational attainment unveils a diverse range of academic backgrounds within the study population. Notably, a substantial proportion of respondents have not been able to attend school, comprising 43% of the sample. This highlights a significant segment of the population facing barriers to formal education. In contrast, elementary-level education represents 30.2% of participants, while high school and college-educated respondents constitute 22.6% and 4.2%, respectively. The prevalence of respondents without formal education underscores the need for sensitivity to potential disparities in understanding, communication, and participation in the research process. Researchers must carefully consider the influence of varied educational backgrounds on the interpretation of study findings, recognizing the potential impact of educational disparities on the research outcomes and ensuring the inclusivity of the study's conclusions.

The results of Table 2 on oral hygiene behaviors offer an alternative viewpoint on personal habits. Remarkably, most respondents (ranked 1 with a weighted mean of 3.74), strongly believe that brushing and toothpaste are the best ways to clean teeth. The respondents perceive that toothpaste and toothbrushes are important partners in maintaining a healthy and confident smile. Their combined power protects the teeth and gums from many problems, which leads to several important benefits. According to Sarembe's study [5] using more toothpaste and brushing for longer periods will improve cleaning effectiveness. The practice of brushing twice or three times a day comes in second place and confirms the common opinion regarding the significance of consistent brushing, with a weighted average of 3.34. Kumar et al. [6] have reported that although brushing once a day with stringent techniques was also useful, it has been suggested that individuals brush twice a day for effective teeth cleaning. This was the result of the individuals' inadequate maintenance of the brushing techniques they had chosen. Using a toothbrush to clean the tongue is equally well-received, coming in third

place with a weighted average of 3.22. On the other hand, with a weighted mean of 3.18, using a toothpick to manage plaque was rated as ok and came in fourth place.

Table 2
Oral Habits

Indicators	WM	VI	Rank
I clean my teeth using a toothbrush and toothpaste.	3.74	Strongly Agree	1
I brush my teeth twice or thrice a day.	3.34	Agree	2
I use dental floss for plaque control.	1.75	Disagree	6
I use a toothpick for plaque control.	3.18	Agree	4
I clean my tongue using a toothbrush.	3.22		3
I visit the Dentist once or twice a year.	1.67	Disagree	7
I only visit the Dentist when I have an emergency dental problem.	2.09	Disagree	5
Composite Mean	2.71	Agree	

With a weighted mean of 2.09, the notion of only obtaining dental care in an emergency also comes fifth in terms of disagreement. Similarly, in the survey of Tadin et. al. [7], when asked how frequently they see the dentist, fewer respondents (43.2%) said they go as needed, while just 26.6% said they visit the dentist every six months. The usage of dental floss, on the other hand, ranks sixth with a weighted mean of 1.75, indicating a considerable degree of participant disagreement. Interestingly, with a weighted mean of 1.67, seeing the dentist once or twice a year comes in seventh place, suggesting significant variation among respondents. In the research by Kumar et al., [6] it is stated that although dentists are crucial in recommending efficient oral hygiene maintenance aids to sustain optimal oral health, there is little data to support this claim. The range of oral health behaviors is demonstrated by these results, which also emphasize the necessity for focused oral health education that considers people's differing degrees of agreement and disagreement.

Table 3 shows the oral health awareness shed light on various aspects of individuals' perceptions and concerns. Notably, a significant emphasis is placed on the apprehension about bad breath, as evidenced by the highest-ranking indicator with a weighted mean of 3.60, indicating a strong agreement among participants. The fifth rank is occupied by

the awareness of the potential development of caries and gum diseases due to excessive consumption of sugary foods and tobacco, with a weighted mean of 3.29. According to Moynihan [8], a $\leq 10\%$ calorie intake of free sugars is linked to a decreased incidence of dental caries, according to the systematic review; nevertheless, dental caries is not completely prevented by this threshold. Low levels of dental caries in children are concerning since it is a progressive, cumulative illness that lasts a lifetime. A decreased incidence of dental caries was indicated by some evidence, albeit of low quality, according to the systematic review, when the consumption of free sugars was comparable to less than 5% of calories.

Table 3
Awareness on Oral Health

Indicators	WM	VI	Rank
I am concerned about having bad breath.	3.6	Strongly Agree	1
I am aware of the possibility of developing caries and gum diseases if I consume too much sugary food and tobacco.	3.29	Agree	5
I am aware that brushing my teeth regularly maintains good oral hygiene.	3.43	Agree	3
I am aware of the use of secondary aids (e.g., mouthwash, dental floss, interdental brush) for oral hygiene.	2.7	Agree	8
I am aware that regular dental check-ups and cleanings are important.	2.75	Agree	7
I am concerned about experiencing tooth sensitivity.	3.28	Agree	6
I am concerned about the possibility of tooth loss.	3.48	Agree	2
I am aware of the importance of oral health for overall well-being.	3.36	Agree	4
Composite Mean	3.24	Agree	-

Following closely in the third position is the recognition of the importance of regular teeth brushing for maintaining good oral hygiene, with a weighted mean of 3.43. However, the awareness of using secondary aids like mouthwash, dental floss, and interdental brush for oral hygiene ranks eighth, suggesting room for improvement in this area despite an overall agreement (weighted mean 2.70). Similarly,

the acknowledgment of the importance of regular dental check-ups and cleanings ranks seventh, with a weighted mean of 2.75. According to Richards [9] the main risk factors for many oral illnesses are poor oral hygiene habits, smoking, alcohol consumption, and improper food. tooth caries, tooth erosion, periodontitis, oral cancer, and several other disorders affecting the soft tissues of the mouth are all influenced by diet. Oral cancer, gingival and periodontal disease, periimplantitis, tooth discoloration, halitosis, altered taste buds, and trouble healing wounds following surgery have all been related to smoking. Excessive alcohol use has been linked to a higher incidence of periodontitis, dental caries, xerostomia, and oral cancer, among other potentially fatal conditions. In addition to being linked to diabetes, cancer, and heart disease, poor oral hygiene can cause periodontitis and dental cavities. Concerns about tooth sensitivity and the possibility of tooth loss rank sixth and second, respectively, with weighted means of 3.28 and 3.48, both falling under the category of agreement.

Lastly, participants express a general awareness of the connection between oral health and overall well-being, ranking fourth with a weighted mean of 3.36. These findings underscore the need for targeted education and interventions to enhance awareness on specific aspects of oral health, ensuring a comprehensive understanding among individuals.

Table 4
Differences in the Responses on Oral Health Habits when Grouped according to Profile

Profile Variables	U/H	p-value	Interpretation
Age	12.851	0.002	Significant
Sex	12065.5	0.013	Significant
Occupation	12.347	0.006	Significant
Civil Status	5752	0.303	Not Significant
Educational Attainment	19.883	<.001	Highly Significant

Legend: Significant at p-value < 0.05

There was a statistically significant difference in responses on oral health habits when grouped according to age, occupation, and educational attainment because the obtained p-values were less than 0.05. In terms of age, the test showed that there was a high significant difference of responses between 46 – 60 years old and 18 – 30 years old, and between 46 – 60 years old and 31 – 45 years old garnering a p-value of <.001. Based on the results, those younger

respondents have a higher assessment on oral health habits as compared to the older respondents. It was shown in the study of Marquez-Arrico et. al [10], that age was a predictor of having less awareness about dental health. It was also shown that older participants had a nearly 2% higher chance of knowing less about dental health. In terms of occupation, the test revealed that there was a significant difference in responses between unemployed and employed, and between self-employed and employed with a p-value of 0.002. Based on the findings, those employed respondents have a higher assessment on oral health habits. Regular dental appointments are made easier by steady employment with dental coverage, which leads to early management for oral health issues. Stress related to job uncertainty or unemployment can also aggravate oral health problems. Having access to dental insurance via one's work boosts the proportion of people who visit the dentist regularly and enhances oral health in general. Oral health issues that can be prevented can be exacerbated by limited access to preventative treatment [1].

In terms of educational attainment, the test showed that there was a highly significant difference of responses between not being able to go to school and high school, between not able to go to school and college, and between elementary and college with a p-value of <.001. Based on the results, those respondents with higher educational attainment have higher assessments on oral health habits. According to the data shared by Chen et al. [12], parents who have completed more schooling typically have greater oral health awareness and require more dental care. Furthermore, children of parents with higher levels of education also often follow better dental hygiene habits.

Conversely, Márquez-Arrico et al. [10] found a correlation between the educational degree of subjects and their understanding of oral health. However, adopting healthy practices does not always correspond with oral health knowledge. Greater awareness of oral health is correlated with higher educational attainment. When compared to subjects with medium or high educational levels, it was discovered that a low educational level was a predicted factor for a poor level of oral health awareness. By raising health literacy, education may help people make more informed decisions regarding their health. Patients are more likely to adopt good hygiene habits if they have a better awareness of oral health and the disease process.

Examining the relationship between educational attainment and oral health knowledge found that

individuals' oral health knowledge improved in step with their educational attainment, with a linear trend throughout the categories. These findings are consistent with previous research, which showed that participants who did not pursue further education scored lower across all knowledge categories and overall.

Table 5
Difference in Responses in Oral Awareness when grouped according to profile

Profile Variables	U/H	p-value	Interpretation
Age	12.851	0.002	Significant
Sex	12065.5	0.013	Significant
Occupation	12.347	0.006	Significant
Civil Status	5752	0.303	Not Significant
Educational Attainment	19.883	<.001	Highly Significant

Legend: Significant at p-value<0.05

There was a statistically significant difference in responses on awareness on oral health when grouped according to age, sex, occupation, and educational attainment because the obtained p-values were less than 0.05.

In terms of age, the test revealed that there was a significant difference in responses between 46 – 60 years old and 18 – 30 years old having a p-value of 0.002. Based on the results, those respondents belonging to the age bracket of 18 – 30 years old have a higher assessment of awareness of oral health. Khanam [13] agreed that most individuals who were in the 18–30 age range and had the best mean oral health, also exhibited good oral hygiene habits. OHL scores had a higher mean REALD score of 24.99 ± 10.07 , and the bulk of research participants were between the ages of 18 and 30.

In terms of sex, having a p-value of 0.013, there was a significant difference in responses between males and females where the female respondents had a higher assessment of awareness of oral health as compared to male respondents. It was shown that more women than men knew more about oral health in connection to sex, as Batista [14] supported. This is in line with the results of Macek et al. [15] who found that when results were classified by domain, women scored significantly higher. In the study by Batista et al. [14] women performed better than males, although there was no statistically significant difference. However, Lipsky [16] felt that while gender variations in health have been the focus of much research, there are few empirical results about the attitudes and values that set

gender psycho-sociology apart when it comes to oral health care. Su et al. wholeheartedly concurred that research indicates women seek dental treatment more frequently and have better oral health than males. These results suggest that there may be gender differences in attitudes, actions, and perceptions.

In terms of occupation, the test showed that there was a significant difference in responses between self-employed and employed, and between unemployed and employed with a p-value of 0.006. Based on the findings, those employed respondents have a higher assessment on awareness of oral health.

In terms of educational attainment, the test revealed that there was a significant difference in responses between elementary and college, between not being able to go to school and college, and between high school and college with a p-value of <0.001. Based on the results, those respondents able to attend college have a higher assessment on awareness of oral health. One could argue that there is a correlation between the educational attainment of the adult population under study and the subjects' levels of oral health knowledge—that is, subjects' oral health knowledge increased as their educational attainment increased. Batista [14] strongly agreed that assessing the relationship between educational attainment and oral health knowledge, it was found that subjects' oral health knowledge increased in step with their educational attainment, with a linear trend across the categories. These findings are consistent with previous research, which showed that participants who did not pursue higher education received lower overall scores across all knowledge domains and individual knowledge domains

CONCLUSION AND RECOMMENDATION

Based on the result of the study, the following conclusions and recommendations were made. Most of the respondents were from ages 18-30, females, able to go until high school, self-employed, and married. The respondents have acceptable oral health habits, particularly in cleaning their teeth using a toothbrush and toothpaste, and are mostly concerned about bad breath and the impact on oral health.

When grouped according to profile variables, the differences in the respondents' oral health habits were interpreted to be significant in terms of occupation. Age and educational attainment were interpreted to be highly significant. On the other hand, sex and civil status were translated as not significant. The difference of responses on awareness of oral health concluded age,

sex, and occupation as significant while educational attainment attained a highly significant response indicating that the more educated the individual, the better is their oral habits. However, civil status was interpreted as not significant.

College of Dentistry may actively participate in community outreach programs to engage with the Badjao community; and conduct oral health screenings, workshops, and educational sessions to raise awareness about proper oral hygiene practices and preventive care.

Collaborating with local health authorities, Dentistry students may set up mobile dental clinics capable of reaching various locations within the Badjao community. This initiative guarantees easy access to oral health services, effectively overcoming challenges associated with transportation or distance.

Barangay officials, specifically from Barangay Malitam, Batangas City may organize interactive workshops in collaboration with local health authorities and community leaders to educate the Badjao community about the importance of oral health; and tailor the content to align with cultural beliefs and practices, promoting a two-way dialogue to better understand community needs.

Future researchers may conduct more health literacy levels within the Badjao community concerning oral health and identify areas where targeted education and awareness efforts are needed to enhance overall health awareness.

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