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# Oral health knowledge and practices among elementary pupils attending Saint Louis College, City of San Fernando, La Union, The Philippines

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ABSTRACT

**Introduction**
The mouth and the rest of the body are intricately connected. Whatever affects the health of the mouth may also affect general health. And, sometimes, general health is reflected in the mouth. Because of this, it is important to keep the mouth clean and healthy to prevent common oral diseases, especially, among children who live in developing countries.

**Purpose**
The purpose of this study was to assess oral health knowledge and practices among elementary pupils attending Saint Louis College in the City of San Fernando, La Union, The Philippines.

**Materials and Methods**
This was a descriptive study. Data were collected from 293 pupils of grades 4 to 6 in the College that were selected using the purposive sampling technique and studied, using the questionnaire. The questionnaire was validated by four external dental experts and was subjected to pilot testing. Data collected were analysed using descriptive statistics of frequencies, percentages, and mean scores.

**Results**
The study found that most of the pupils manifested satisfactory knowledge about the causes (87.23%) and preventive measures (86.21%) of oral diseases but moderately practiced oral hygiene disciplines (55.80%). These results inferred that oral health knowledge concerning the causes and preventive measures of oral diseases were identified as strengths, while oral hygiene practices were found to constitute areas of weaknesses.

**Conclusion**
It is imperative for the parents of the respondents, the school dentist, and teachers to jointly develop a way of making sure that the pupils translate their knowledge into practice.

## INTRODUCTION

Oral health is essential to overall health and well-being. A healthy mouth enables an individual to talk, eat and socialize without experiencing active disease, discomfort, or embarrassment. The two most common oral diseases are dental caries and periodontal disease, often beginning in childhood (Kidd, 2005). Health is an essential part of citizens' quality of life; therefore, poor oral health affects society's general progress, and oral health conditions can also have a detrimental effect on a person's well-being. In the school setting, pupils' health conditions are important to parents, teachers, and staff in the school clinic; otherwise, pupils suffering from oral health problems and have higher absenteeism than those present in the school will be missing and unproductive (Carneiro et al., 2011).

The mouth is the main entrance to the body; whatever affects oral health will also involve general health. Thus, the practice of keeping the mouth clean to prevent common oral diseases is necessary, especially in children who live in developing countries (Peterson, 2009; World Health Organization [WHO], 2010; Saadu et al., 2012).

In some parts of the world, oral health care for children is provided systematically with complete coverage of the entire child population. For example, In Tanzania, where such studies were carried out among secondary school students, most students, 84%, had an adequate level of knowledge on oral health but a common oral health practice because oral health education has been part of the primary school curriculum since 1982. It was implemented by teachers at primary schools (Carneiro et al., 2011).

The Philippines' primary oral health challenges are dental caries (tooth decay) and periodontal disease (gum disease). These two oral diseases are so common that 87% of people suffer from tooth decay, and 13% have gum disease (Dental Health Service, 2011). The combined ill effects of these two significant diseases (except oral cancer) weaken the bodily protection and serve as an anchor of entry to other more serious, potentially dangerous, and opportunistic infections.

The national government of the Philippines primarily tasked the Department of Health (DOH) to implement an Oral health plan for public health services (AO 2007-007) through its local government units; the strategy aims to reduce the major rate of dental problems and diseases by the end of 2016.

The program seeks to achieve these objectives by providing preventive, curative, and promoting Filipinos' dental health care through a life cycle approach. It offers a continuum of quality care by establishing a package of essential primary oral health care (BOHC) for every childhood stage from infancy to old age. It will provide health facilities, schools, or home—dental health education to the public and private schools. Parents' involvement can be beneficial because, according to different researchers, parents' prior knowledge and practices can affect the children's oral health status. Indeed, adopting good oral health habits in childhood often takes place with parents, especially with mothers. Since parents are the primary social force in influencing the child's development in the early childhood years, interventions targeting parental oral health beliefs and practices play beneficial roles in the intervention of oral health problems (Dental Health Service, 2011).

There is strong evidence that oral health knowledge is associated with better oral health practices (Mwangosi et al., 2006; Stella et al., 2007; Cheah et al., 2010). Hence, this study aims to determine the oral health knowledge and practices of elementary pupils in Saint Louis College in the City of San Fernando, La Union to recommend improvement strategies.

## MATERIALS AND METHODS

### *Research design*

This study used a cross-sectional survey research design. The use of the descriptive research method was the most appropriate for this study.

### *The Study Area*

The study was conducted at Saint Louis College in the City of San Fernando, La Union, The College is a private school that offers medical and dental examinations to elementary pupils. The school has a total population of more than 5,000 pupils and students.

### *Sample size and sampling technique*

The sampling technique that was used for this survey was the purposive sampling technique. 316 pupils in Grade 4-6, who could read and respond to the questionnaire were selected for this study. On the day the questionnaires were administered, 23 pupils were absent from school on account of ill health. Consequently, 293 pupils were used for the study.

### *Instrument for data collection*

The study used a questionnaire for this study. The questionnaire was constructed based on accepted oral health knowledge and oral hygiene practices described in various relevant books and e-sources.

### *Data collection*

The instrument for data collection was validated by four external dental experts and was subjected to pilot testing. The degree of validity obtained was 4.64, interpreted as very highly valid.

The questionnaires were given to the pupils and they were assisted in filling them out.

### *Data Analysis*

Data gathered were collated, tabulated, and analysed using simple percentages and mean scores.

Questions with a mean score of 235-293 (81-100%) were considered 'Very Highly Knowledgeable' or 'Very Highly Practiced'. Those with a mean score of 176–234 (61-80%) were considered 'Highly Knowledgeable' or 'Highly Practiced'. Those with a mean score of 117-175 (41-60%) were considered 'Moderately Knowledgeable' or 'Moderately Practiced', and the ones with a mean score of 58-116 (21-40%) were considered 'Low Knowledgeable' or 'Seldom Practiced'.

## RESULTS

Results of this study showed that most of the respondents were in grade 6 (38.23%) and of the male gender (55.29%). And the majority of their parents had only a College education (38.91%) **(Table 1)**.

**Table 1:**
Distribution of respondents by grade, gender, and HEA of the parents

| *A. Grade Level* | *Frequency (f)* | *Percentage (%)* |
|---|---|---|
| *4* | *95* | *32.42* |
| *5* | *86* | *29.35* |
| *6* | *112* | *38.23* |
| ***Total*** | ***293*** | ***100*** |
| ***B. Gender*** | | |
| *Male* | *162* | *55.29* |
| *Female* | *131* | *44.71* |
| ***Total*** | ***293*** | ***100*** |
| ***C. Highest Educational Attainment of the Parents*** | | |
| Doctorate Graduate | *20* | *6.83* |
| Master Graduate | *43* | *14.68* |
| College Graduate | *114* | *38.91* |
| Tech-Voc Graduate | *53* | *18.08* |
| High School Graduate | *50* | *17.06* |
| Elementary Graduate | *13* | *4.44* |
| **Total** | ***293*** | ***100*** |

Results also indicated that pupils' level of knowledge on causes of oral diseases generated an overall mean score of 256 (87.23%), which is interpreted as "Very Highly Knowledgeable" **(Table 2)**.

**Table 2:**
Level of knowledge of respondents concerning causes of oral diseases

| Indicator Causes of Oral diseases | Number of Students with Correct answers | Rate% (N=293) | DE |
|---|---|---|---|
| 1. It is necessary to brush your teeth after breakfast in the morning and before going to bed at night. | 291 | 99.31 | VHK |
| 2. It is necessary to regularly rinse your mouth with water after each meal to remove food remnants trapped between teeth. | 272 | 92.83 | VHK |
| 3. Poor oral health causes diseases such as swollen and bleeding gum. | 248 | 84.64 | VHK |
| 4. Taking foods and drinks with sugar such as sweets, chewing gums, and soft drinks regularly without cleaning teeth harmful to your teeth. | 260 | 88.73 | VHK |
| 5. It is necessary to go for a dental check-up at least twice a year. | 207 | 70.65 | HK |
| **Overall Mean** | **256** | **87.23%** | **VHK** |

***Kay:*** *Very Highly Knowledgeable (VHK); Highly Knowledgeable (HK)*

Additionally, concerning the level of knowledge on the prevention of oral diseases, an overall mean score of 253 (86.21%) was obtained, which is interpreted as "Very Highly Knowledgeable" **(Table 3)**.

**Table 3:**
Level of knowledge of the respondents on oral disease preventive measures

| Indicator Preventive Measure | Number of Students with Correct answers | Rate% (N=293) | DE |
|---|---|---|---|
| 6. It is possible to prevent oral diseases by brushing. | 247 | 84.30 | VHK |
| 7. It is possible to prevent oral diseases by flossing. | 201 | 68.60 | HK |
| 8. It is possible to prevent oral diseases by avoiding sugar. | 256 | 87.37 | VHK |
| 9. Caring for your mouth is as important as caring for other parts of your body | 275 | 93.86 | VHK |
| 10. It is possible to prevent oral diseases by the use of fluoride rinses or mouthwashes containing fluoride. | 284 | 96.93 | VHK |
| **Overall Mean** | **253** | **86.21%** | **VHK** |

***Key:*** *Very Highly Knowledgeable (VHK); Highly Knowledgeable (HK)*

Concerning the extent of oral hygiene practice, an overall mean score of 162 (55.80%) was obtained, which is classified as "Moderately Practiced" **(Table 4)**.

**Table 4:**
The extent of oral hygiene practice

| Indicator<br>The extent of Oral Hygiene Practice | Number of Students with Correct answers | Rate% (N=293) | DE |
|---|---|---|---|
| 1. How often do you visit the dentist? | 240 | 81.91 | VHP |
| 2. How often do you brush your teeth? | 164 | 55.97 | MP |
| 3. How often do you use a toothbrush? | 253 | 86.34 | VHP |
| 4. How often do you use dental floss to clean your teeth? | 202 | 68.94 | SP |
| 5. How often do you brush your teeth using up-down –sideways techniques? | 69 | 23.63 | SP |
| 6. How often do you rinse your mouth with water after each meal? | 198 | 67.57 | HP |
| 7. How often do you use dental floss in removing food remnants between your teeth | 160 | 54.60 | MP |
| 8. How often do you change your toothbrush? | 91 | 31.05 | SP |
| 9. How often do you use mouth wash to clean and gargle your mouth? | 140 | 47.78 | MP |
| 10. What do you use for removing food remnants between your teeth? | 110 | 37.54 | SP |
| **Overall Mean** | **163** | **55.80%** | **MP** |

*Key: Very Highly Practiced (VHP); Highly Practiced (HP); Moderately Practiced (MP); Seldom Practiced (SP).*

The summary of the strengths and weaknesses of pupils on their oral health knowledge and oral hygiene practice showed that oral health knowledge concerning the causes and preventive measures of oral diseases were identified as strengths, while oral hygiene practices were found to constitute areas of weakness **(Table 5)**.

**Table 5. Strength and Weaknesses of pupils on Oral Health Knowledge and Oral Hygiene practice**

| Indicator<br>Oral health knowledge | Rate% | Descriptive Equivalent | Strengths/Weaknesses |
|---|---|---|---|
| **Knowledge on Causes of Oral Diseases** | | | |
| 1. It is necessary to brush your teeth after breakfast in the morning and before going to bed at night. | 99.31 | VHK | Strength |
| 2. It is necessary to regularly rinse your mouth with water after each meal to remove food remnants trapped between teeth. | 92.83 | VHK | Strength |
| 3. Poor oral health causes diseases such as swollen and bleeding gum. | 84.64 | VHK | Strength |
| 4. Taking foods and drinks with sugar such as sweets, chewing gums, and soft drinks regularly without cleaning teeth harmful to your teeth. | 88.73 | VHK | Strength |
| 5. It is necessary to go for a dental check-up at least twice a year. | 70.65 | HK | Strength |
| **Knowledge on Preventive Measures of Oral Diseases** | | | |
| 6. It is possible to prevent oral diseases by brushing. | 84.30 | VHK | Strength |
| 7. It is possible to prevent oral diseases by flossing. | 68.60 | VHK | Strength |
| 8. It is possible to prevent oral diseases by avoiding sugar. | 87.37 | VHK | Strength |
| 9.Caring for your mouth is as important as caring for other parts of your body | 93.86 | VHK | Strength |
| 10. It is possible to prevent oral diseases by the use of fluoride rinses or mouthwashes containing fluoride. | 96.93 | VHK | Strength |
| **The extent of Oral Hygiene Practices** | | | |
| 1. How often do you visit the dentist? | 81.91 | VHP | Strength |
| 2. How often do you brush your teeth? | 55.97 | MP | Weakness |
| 3. How often do you use a toothbrush? | 86.34 | VHP | Strength |
| 4. How often do you use dental floss to clean your teeth? | 68.94 | HP | Strength |
| 5. How often do you brush your teeth using up-down –sideways techniques? | 23.63 | SP | Weakness |
| 6. How often do you rinse your mouth with water after each meal? | 67.57 | HP | Strength |
| 7. How often do you use dental floss in removing food remnants between your teeth | 54.60 | MP | Weakness |
| 8. How often do you change your toothbrush? | 31.05 | SP | Weakness |
| 9. How often do you use mouth wash to clean and gargle your mouth? | 47.78 | MP | Weakness |
| 10. 10. What do you use for removing food remnants between your teeth? | 37.54 | SP | Weakness |

*Key: Strength (Str); Weakness (Wk); Rate (%); Percentage (%)*

## DISCUSSION

The findings of this study showed that most of the respondents were in grade 6 (38.23%) and of the male gender (55.29%). The majority of their parents had only a College education (38.91%). This implied that the parents were educated enough to know the central place of health in a child's life. This ideal is reflected in the pupils' oral health knowledge.

Results further indicated that the pupils' level of knowledge on the causes of oral diseases generated an overall mean score of 256 (87.23%), which is interpreted as "Very Highly Knowledgeable". It implies that the pupils were very aware of the causes of oral diseases. Given that the majority of their parents had a college education (38.91%), in one way or another, the parents of these respondents may have had the opportunity to read or listen to a message on oral health. And this may have rubbed off on their children. This assertion agrees with the position of Horowitz (2014) who noted that parents who finished college degrees could efficiently work and make sure that their children were also knowledgeable about oral health and health in general, knowing fully well that their children are their future. In the same vein, Muhammed (2014) pointed out that the role of parents is very important in developing healthy habits among young children. Children of educated parents showed a higher level of knowledge and practice of oral health if their parents impact the understanding and monitor them in practicing what they have learned.

Additionally, concerning the level of knowledge on the prevention of oral diseases, an overall mean score of 253 (86.21%) was obtained, which is interpreted as "Very Highly Knowledgeable". The pupils' knowledge about the preventive measures of oral diseases could be attributed to their relationship with their school dentist at Saint Louis College. Once every school year, the pupils undergo a dental and medical check-up at the school clinic ("Field observation"). However, question 2 elicited a mean score that is lower than the score in other questions (201 [68.60%]). Fortunately, this is still rated as "Highly Knowledgeable", meaning that few pupils knew that flossing can still be part of preventive measures of oral diseases. This finding is supported by the work of Frencken and Holmgren (2009) about preventive care provided through schools, which varies according to the local situation. Extensive treatment is typically limited to locations with the highly–equipped school-based clinic. Most pupils have good knowledge about the preventive measures of oral disease, as most of them accepted that caring for the mouth was as essential as caring for other parts of the body and that it was crucial to brush the teeth in the morning after breakfast. The findings of Ogunsile and Ogundele (2008); Emmanuel and Chang'endo (2009) found out that knowledge about the preventive measures of oral diseases would go a long way in preventing oral health problems among pupils.

Concerning the extent of the practice of oral hygiene, an overall mean score of 162 (55.80%) was obtained, which is interpreted as "Moderately Practiced". This implies that even though the pupils of Saint Louis College had adequate knowledge about the causes and preventive measures of oral diseases, they still practiced oral hygiene disciplines in moderation. Redmond et al. (2009) inferred that in oral health, the more knowledgeable the pupils are regarding their health care and causes of ill-health, the more they can consistently achieve better positive practice. This finding harmonized with the results of Al-Omiri et al. (2006). They found out that most of the pupils' scores were 1920 (90.9%) had an understanding and highly knowledgeable about causes, similar to other studies done.

This means that the pupils attending Saint Louis College left something undone and allowed many things to take the place of their oral hygiene practices. Some oral hygiene practices still needed more concentration for pupils as they seldom practiced them. The finding of this present study also agrees with the assertions of Al-Omiri et al. (2006), who stated that the extent of the practice of oral hygiene by pupils may be irregular.

Overall, the present study implied that Saint Louis College elementary pupils were highly knowledgeable or very much familiar with the causes and preventive measures of oral diseases but not practicing what they knew on oral hygiene practices, which has been identified as a weakness. This may be because they received information and knowledge from their parents, the school dentist, and the school nurse, most especially when they go to the school clinic for their yearly dental and medical check-ups but could not utilize these fully in their oral hygiene habits. Nosayaba (2011) mentioned that it is not always easy to train a child regarding their oral health habits. This is why the school, together with the parents should work hard to

improve the pupils' oral hygiene habits. Besides, Ogunsile and Ogundele (2008) opined that parents, school dentists, and teachers also need to do more to significantly impact children's oral health so that when healthful knowledge is allowed to influence oral hygiene practice, the occurrence of common oral health diseases will be reduced.

## CONCLUSIONS

In the light of the enumerated findings of this study, we conclude that oral health knowledge, which is identified as a strength, is insufficient to catalyse a high level of oral hygiene practices, which is recognized as a weakness. It is imperative for the parents of the respondents, the school dentist, and teachers to jointly develop a way of making sure that the pupils translate their knowledge into practice.

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**Ethical Approval:** Ethical approval for this study was obtained from the Saint Louis College Ethics Review Board.

**Conflict of Interest:** The authors declare no conflict of interest.

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