

# A Study of Knowledge and Practice about Oral Hygiene among Senior Secondary School Students in Bansa Village of Jaipur District of Rajasthan

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## Abstract

Context: Several studies have shown that there is knowledge of oral hygiene among children but there is lack of practice to maintain the oral hygiene among children. This maintenance of oral hygiene is neglected among children as they feel it to be not important. Oral route is a door to all kind of diseases and oral health is the mirror of general health. In case of Rajasthan this field has been neglected. Although there is National Oral Health Programme going on in Rajasthan State for increasing the knowledge about oral health maintenance but still public awareness about maintaining oral hygiene is very poor. So, this study has been done to know the knowledge and practice about oral hygiene among school going students of Government Adarsh Senior Secondary School of Bansa village of Jaipur district.

Methods and Material: School going students of class 9<sup>th</sup> and 11<sup>th</sup> selected using stratified simple random sampling. Data collected using close ended interview schedule and data analysed using Statistical Package for Social Sciences (SPSS) version 20 and MS Excel 2010.

Statistical analysis used: Proportions, frequency and percentages.

Results: Among the participants only 44% of the students follow specific tooth brushing techniques (circular), 34% doesn't know the exact time of brush their teeth, 40% students know about National Oral Health Program and rest 60% have no knowledge about it. The source of knowledge about National Oral Health Program among knowledgeable students was mainly from media i.e. 55%, from teachers is 32.5% and 12.5% from parents.

Conclusions: Poor practice of oral hygiene among participants though having good knowledge on best oral hygiene practices. More than half of the participants visit dentist on dental issues and very few for regular check-ups.

**Key-words:** DMFT, HHI, NHI, OHI-S, IEC, OHE, PCR, PHC, CHC.

## Introduction

Diseases affecting oral cavity is one of the major public health problems which can potentially cause significant social impact. Studies on oral health awareness in rural areas show lack of awareness among them. Among oral diseases, dental caries is a prevalent dental problem among children, as they consume lots of sweets and aerated drinks. Brushing and flossing are practices to maintain good dental health, along with regular dental visits.

Oral health knowledge is essential for proper oral hygiene and better oral health. People living in developing countries, and concomitantly, of lower socio-economic status have lacunae in oral health awareness mirrored in their practice of oral hygiene habits. This study aimed to evaluate oral hygiene practices and knowledge among 13-18 year old school going children.

The mouth is the major gateway to the body; whatever affects oral health may also affect general health (Nyamuryekung'e, 2012)<sup>1</sup>. Oral health can be defined as a Being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss and other diseases and disorders that affect the mouth and oral cavity.

The oral tissue forms an integral part of every human being and extremely vulnerable to disease as it is an intimate relationship with the external environment, and it is also subjected to mechanical, chemical, and bacterial interactions (Dilip, 2005)<sup>2</sup>. According to Peterson (2004)<sup>3</sup>, oral diseases may be considered a public health problem due to their high prevalence and significant social impact.

Oral health is an essential aspect of general health, as such, oral health knowledge is considered to be an essential prerequisite for health related practices ( Carneiro, Kabulwa, Makyao, Mrosso & Choum, 2011)<sup>4</sup>. According to Symth et al. (2007)<sup>5</sup>, there is strong evidence between oral

health knowledge and better oral health practice by giving adequate information, motivation, and practice of oral health measures to individuals.

According to the WHO General Assembly (2009)<sup>6</sup>, there is a need to develop a “mechanism to provide coverage of the population with essential oral health care and to promote the availability of oral health services that should be directed towards diseases prevention and health promotion for poor and disadvantage countries.”

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## **OBJECTIVES**

### **GENERAL OBJECTIVES**

To assess the knowledge and practice about oral hygiene among school going students of Government Adarsh Senior Secondary School of Bansa village of Jaipur district.

### **SPECIFIC OBJECTIVES**

1. To assess knowledge of oral hygiene among students of Government Adarsh Senior Secondary School.
2. To establish oral hygiene practices among students of Government Adarsh Senior Secondary School.
3. To suggest appropriate recommendations on oral hygiene for program implementation.

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## **METHODOLOGY**

### **STUDY DESIGN**

The descriptive cross-sectional research was used in the study.

### **STUDY AREA**

The study has been conducted at the Government Adarsh Senior Secondary School, Bansa, Jaipur district of Rajasthan, India.

### **STUDY POPULATION**

The study population were school going students of class 9<sup>th</sup> and 11<sup>th</sup> at the Government Adarsh Senior Secondary School, Bansa, Jaipur district of Rajasthan, India.

### **SAMPLE SIZE**

Sample size for this study was 100 equally distributed between class 9 and 11 as well as among boys and girls.

### **INCLUSION CRITERIA**

To ensure inclusion in the sample, the respondent met the following criteria:

1. Students of class 8<sup>th</sup> and 11<sup>th</sup> were selected.
2. Both male and females were included.
3. Those who gave consent.

## **EXCLUSION CRITERIA**

1. Those who didn't give consent.
2. Those who were unable to respond or ill.

## **SAMPLING TECHNIQUE**

The students were selected by stratified simple random sampling technique.

## **DATA COLLECTION METHODS**

The data was collected using close ended interview schedule after taking the consent.

### **Data Collection Tools & Techniques**

The following tools & techniques were used:

INTERVIEW SCHEDULE: Close ended interview schedule for students were used

SECTION 1: General information

SECTION 2: Knowledge of oral health

SECTION 3: Practice of oral health

## **DATA ANALYSIS**

Data entry and analysis was done using MS EXCEL 2010 and SPSS version 20.

## **ETHICAL CONSIDERATION**

Written consent of the participant as well as guardian of the participant/headmaster of the school was obtained prior to the conduction of the study.

## Results & Findings

**Table 1: Socio-Demographic Data**

Age	Class				Total	
	Class 9		Class 11			
<b>13</b>	7	7%	0	0%	7	7%
<b>14</b>	25	25%	1	1%	26	26%
<b>15</b>	17	17%	4	4%	21	21%
<b>16</b>	0	0	15	15%	15	15%
<b>17</b>	1	1%	22	22%	23	23%
<b>18</b>	0	0	8	8%	8	8%
<b>Count Total</b>	50	50%	50	50%	100	100%

Table 1 shows age and class distribution of the students. Out of 100 students 50% students from class nine and 50% students from class eleven. And table also shows that 7% students aged 13 years, 26% students aged 14 years, 21% students aged 15 years, 15% students aged 16 years, 23% students aged 17 years, 8% students aged 18 years.

**Table 2: Socio-Demographic Data**

Category	Occupation of father			Source of drinking water		
	Farmer	Business	Total	Tap	RO	Total
<b>Frequency</b>	76	24	100	94	6	100
<b>Percentage</b>	76%	24%	100%	94%	6%	100%



Table 2 shows that out of 100 students 76% belong to farmer's family and 24% students from service or business family. It shows that 94% of students use tap water at home and remaining 6% uses RO/filtered water.

**Figure 1: Reasons for brushing teeth**

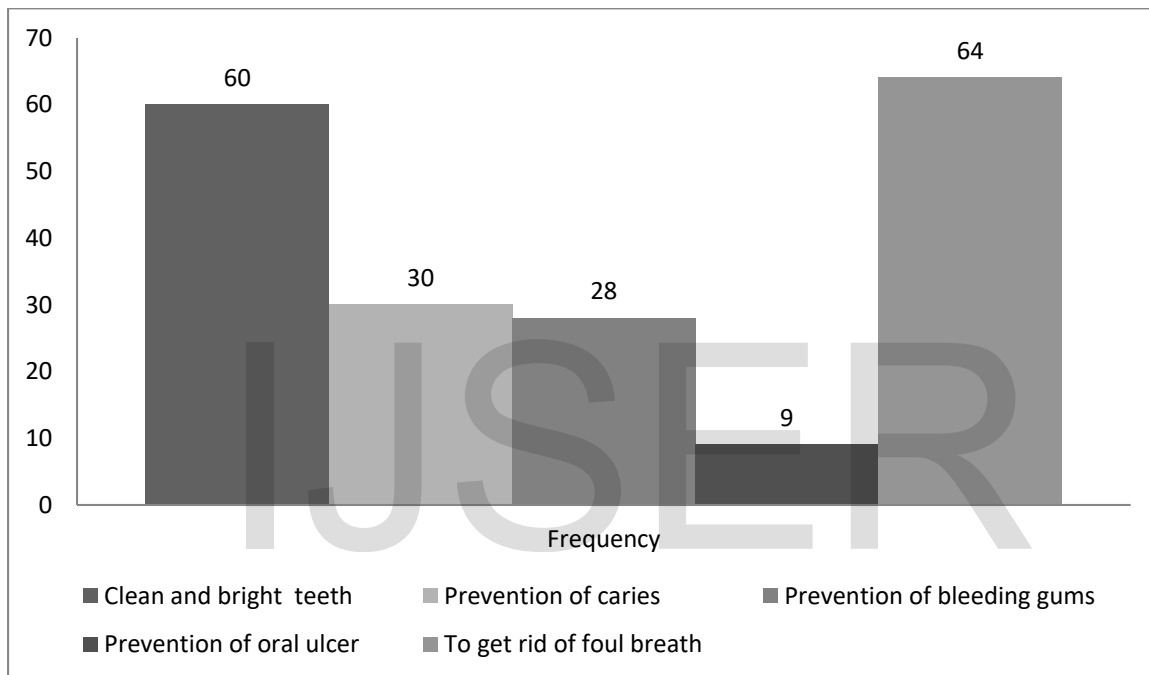


Figure 1 shows reasons of students for tooth brushing, 60 students says that to clean and bright teeth, 64 says that to get rid of foul breath, 30 says to prevent caries, 28 says to prevent bleeding gums and 9 students says to prevent oral ulcer.

**Table 3: Knowledge about oral health**

Category	Variables	Frequency	Percentage
<b>1.Cause of dental caries</b>	• Sweets and toffees	68	68%
	• Soft drinks	20	20%
	• Chocolates	48	48%
	• Bad food	28	28%
	• Not brushing teeth	64	64%
	• Don't know	6	6%
<b>2.Knowledge about fluoride</b>	➤ Yes	53	53%
	➤ No	47	47%

Table 3 shows that 68 students say the cause of dental caries is by eating toffees and sweets, 64 students say by not brushing teeth, 48 say eating chocolates, 28 say of bad food consumption, 20 say by soft drinks. But 6 students not aware of cause of dental caries. More than half that is, 53% students know about fluoride and 47% are unaware.

**Table 4: Knowledge about oral hygiene**

<b>Variables</b>	<b>Necessary to brush twice a day</b>	<b>Necessary to rinse mouth after each meal</b>	<b>Knowledge about poor oral health being cause of periodontal disease</b>	<b>Necessary to visit dental checkup</b>
<b>Strongly agree</b>	67%	64%	54%	66%
<b>Agree</b>	27%	31%	33%	32%
<b>Disagree</b>	5%	5%	8%	1%
<b>Strongly disagree</b>	1%	0%	5%	1%
<b>Total</b>	100%	100%	100%	100%

Table 4 shows that knowledge wise 67% students strongly agreed that it is necessary to brush after breakfast in the morning and last at night. 94% students agreed that it is necessary to brush twice a day. 64% students strongly agreed to necessary always rinse mouth with water after every meal, 31% agree to rinse mouth whereas only 5% disagree. 54% students strongly agree that poor oral health is cause of periodontal diseases 33% agree to that. 66% students strongly agreed and 32% students agreed that it is necessary to visit dentist for regular dental checkup.

**Figure 2: Knowledge about National Oral Health Program**

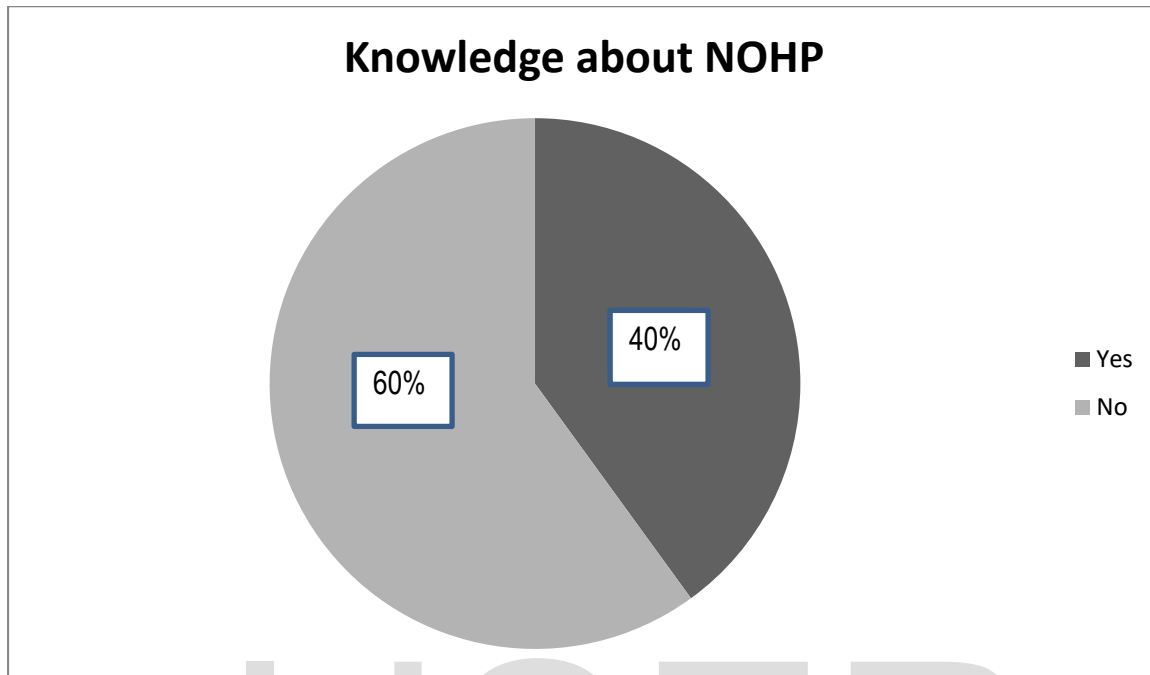


Figure 2 shows that only 40% students know about national oral health program, rest 60% students doesn't have knowledge about NOHP. This table indicates that's although government is trying to promote oral health via program but people have no knowledge about it so how will they utilize the same.

**Figure 3: Source of knowledge about NOHP**

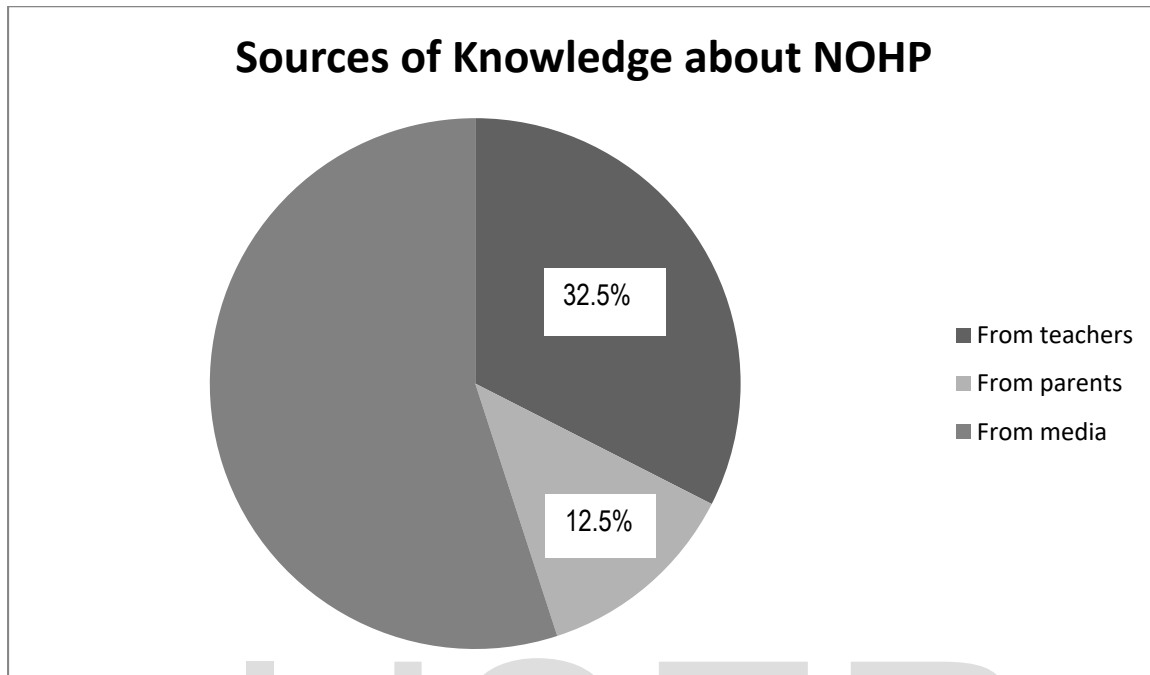


Figure 3 shows that source of knowledge among knowledgeable students were mainly from media i.e. 55%, 32.5% from teachers and 12.5% from parents. So that main source of knowledge about NHOP is media and IEC. Thus telling that to raise knowledge among children/students, media's role has to be taken into consideration.

**Table 5: Findings about practices regarding oral health**

<b>Variabl es</b>	<b>Frequen cy of brushing in a day</b>	<b>Variabl es</b>	<b>Frequen cy of brush timing</b>	<b>Variabl es</b>	<b>Frequen cy of changin g of tooth brush</b>	<b>Ever visite d dentis t</b>	<b>Variabl es</b>	<b>Tooth Brushing Techniqu e</b>
<b>Once</b>	83	<b>Mornin g</b>	81	<b>Every month</b>	43	51 (yes)	<b>Circula r</b>	44
<b>Twice</b>	17	<b>Noon</b>	2	<b>Every two month</b>	35	49 (No)	<b>Sidewa ys</b>	56
<b>Total</b>	100	<b>Mornin g and night</b>	17	<b>More than two month</b>	22	100 (total)	<b>Total</b>	100

Table 5 shows that only 17% students practicing tooth-brushing twice a day, while knowledge wise almost 94% agreed twice a day practice. This is a gap between knowledge and practice. 81% students brush daily in morning, 2% students brush at noon, 17% students brush two times in a day. 43% students changed their brush every month, 35% students changed their brush in every two months and 22% students used their brush more than two months. 51% students

visited dental clinic ever, 49% students did never visit dental clinic. 44% of students use circular method of tooth brushing and 56% of students using sidewise tooth brushing technique.

**Figure 4: Reasons for visiting dentist**

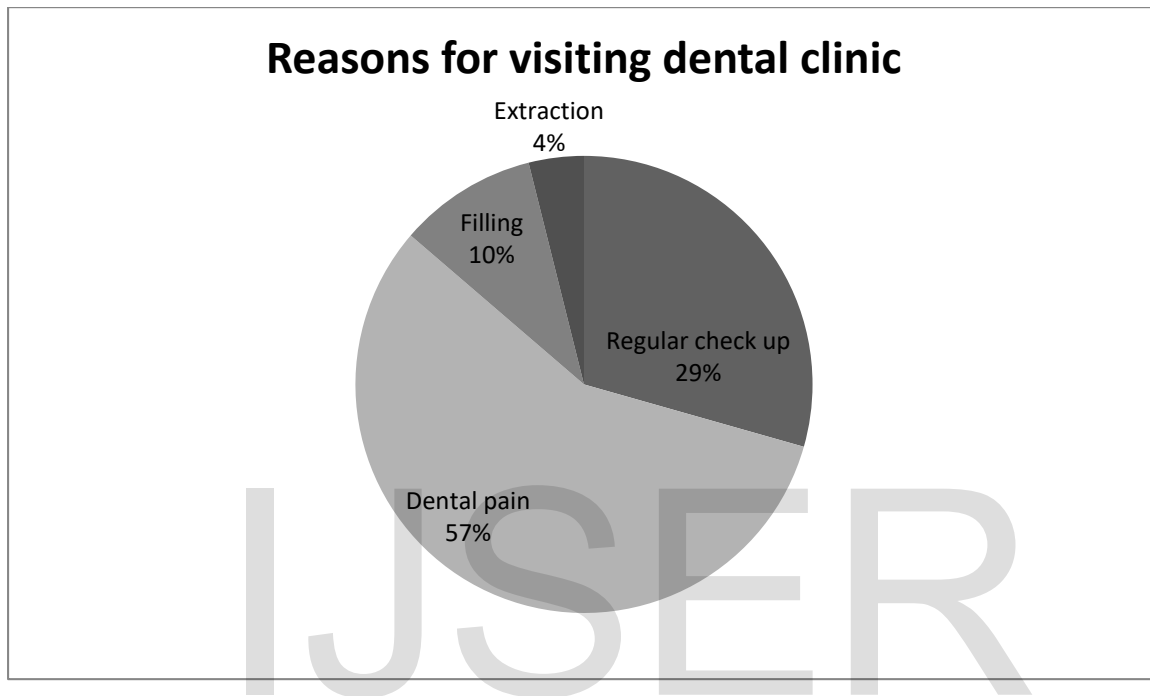


Figure 4 shows that 29.4% students visited dental clinic for regular check-up, and 56.9% students visited dental clinic due to dental pain.

In this study 100 school children were given the questionnaire, the data was then analyzed and has been tabulated along with charts for each question. When asked about brushing habits, the results show that 17% brush their teeth twice a day, while 83% brush once daily. All of students (100%) practice brushing with tooth paste. 56% of the student population use random direction methods to brush their teeth, 44% of the students follow specific tooth brushing techniques (circular).

14% of student population said that they brush for less than 3 minutes and 52% of students brush more than 3 minutes, 34% doesn't know the exact time of brush their teeth. When students were asked how often they change their tooth brush, 35% change their brush within 2 months and 43% of students change their brush every month, 22% more than 2 months.

When asked about the rinse of mouth after meal than 64% students strongly agreed that it is necessary to always rinse mouth with water after every meal whereas, 31% agree and 5% disagree with the same.

When asked about regular dental checkup to dentist every year, 66% students strongly agreed and 32% students agreed i.e. almost 98% of students consider dental checkup is important. When asked about knowledge of National Oral Health Program, only 40% students know about it and rest 60% have no knowledge about it. It indicates that although government is trying to promote oral health via program but people have no knowledge about it and therefore no utilization of the program.

The source of knowledge about National Oral Health Program among knowledgeable students was mainly from media i.e. 55%, from teachers is 32.5% and 12.5% from parents. Therefore main source of knowledge about the program is from media and IEC. It indicates that to raise knowledge among children/students, media's role has to be taken into consideration.



## DISCUSSION

Similar study conducted in Kerala by Jayakumary et al [6] reported that more than 75% of students brush twice a day but the present study result can be compared with study conducted by Zhu et al [7], which shows that 44.4% student brush twice a day. While here only 17% students practicing, tooth brush twice a day.

A study conducted in Rajasthan shows that in 2011, 95% of the population uses tap water (hand pumps, Tap, Wells) and rest uses filtered water. In present study 94% of respondents use tap water and other uses filtered water.

Tooth brushing habit which is learnt in early childhood plays a very important role in dental hygiene. Ideally there is need to brush twice daily but many people don't practice it which in turn leads to dental caries. A study conducted in the Sunderban (Datta, 2013)<sup>7</sup> shows that 16.67% of students brush more than twice daily which is almost similar to the result of present study i.e. 17% and only 44% of student uses circular motion technique of brushing (most recommended by dentist).

In a similar study conducted in Kerala among adolescents to know about their oral health behavior shows that 75% of students brush their teeth twice daily but only 32% follow brushing recommended method (Jayakumary et al, 2009)<sup>8</sup>. In Norway, Austria, Germany, Denmark and Swedan, 73-83% of the children as young as 11 years old brushed more often than once a day. The present study shows that 100% of the respondents use tooth brush and tooth paste as the cleaning aids as compared to Patiala where, 92.2% uses tooth paste and rest uses datum or finger as cleaning aid.

There is generally a failure in the use of inter-dental aid as preventive tool. In a study conducted in Saudi Arabia in 2001 where no subjects used dental floss for inter-dental cleaning (Daljit et al, 2014)<sup>9</sup>. Similar results are found in the present study.

Tooth brushes and dentifrices are widely used for tooth cleaning. Tooth brushes are over the counter products and therefore no special instructions for their use or renewal are mentioned. There is little data which suggests when tooth brush has to be replaced. Surveys have been conducted to find out wide variation in tooth brush replacement periods, with the suggested average period of 2, 5-6 months. A previously conducted study has suggested that worn tooth brush may be significantly less effective than new tooth brush (Pradeep et al, 2013)<sup>10</sup>.

The present study shows that 43% of students change their tooth brush every month which is very good indicator. According to American Dental association, we should change our tooth brush approximately every three to four months and we should see the dentist once in six months. Promoting regular dental visits is one of the cornerstones of preventive dentistry.

The present study revealed that 29.4% of respondents visit regularly to dentist and rest of the respondents visit due to dental issues, mainly dental pain (56%). In a study done by Jain et al 54% of the subjects visited dentist when they have dental pain, which is same with our study (Jain et al, 2012)<sup>11</sup>.

Bleeding gum is one of the most common periodontal diseases, which are caused by the building up of the plaque in the gum line and which in turn leads to poor oral health. The student's awareness regarding periodontal health was satisfactory in terms of recognizing signs and symptoms of gum diseases which is good as compared to the study done by Dayakar et al

(2016)<sup>12</sup>, which has 75% awareness regarding periodontal diseases. Some studies have reported unsatisfactory knowledge regarding periodontal health among school going children.

Fluoride is a mineral that occurs naturally in food and water. Fluoride helps prevent tooth decay by making tooth more resistant to acid attack, from plaque bacteria and early decay. The present study shows that almost half (47%) of the students have knowledge about fluoride as compared to the study conducted at Qatar, to know about oral health knowledge, behavior and practice among school children where less than half 38.9% of the children, actually had heard about fluoride (Al-Darwish 2016)<sup>13</sup>.

The student's knowledge about sweets (chocolates/ candies) as a carcinogenic diet was quite adequate. Only 20 students considered soft drink as a harmful substance for dental health.

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## CONCLUSION

The participants have good knowledge about oral hygiene but practice regarding oral hygiene is poor.

All the participants use tooth brush and paste to clean their teeth.

94% of participants have knowledge to brush twice a day, but in practice only 17% follow.

40% of participants have knowledge about National Oral Health Program.

51% participants visited at least once to dentist, among them 57% visited due to dental pain and 29% visited for regular check up.

66% participants strongly agreed that they should go for regular checkup.

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## RECOMMENDATIONS

- There is need for awareness generation of National Oral Health Program.
- There should be awareness for oral health hygiene in schools and societies.
- There is a need to improve the practice regarding oral health.
- There is a need to bring behavioral change in children regarding oral hygiene.
- The Government should organize dental camps in schools to promote practices regarding oral health.
- There is need to adopt inter-sectoral approach by collaborating health sector with education sector.

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