A Study to Assess Prevalence of Oral Problems and Awareness Regarding Oral Hygiene among Secondary School Children in Selected Schools at Shimla, Himachal Pradesh India

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Abstract: *The present study will be on "A descriptive study on the assessment of awareness regarding oral hygiene and prevalence of oral problem among school children at selected BSF Arya school of Sohana, Mohali, Punjab.2015-2016 The purpose of this study is to know the awareness of oral hygiene and prevalence of oral problems in selected school .Sample size will be 150 school children of target population including 7th ,8th, 9th class students. of selected schools. An interview will be conducted to know the identification and sociodemographic variables of study subjects. A structured questionnaire will be made to know the awareness of study subjects regarding oral hygiene. A protocol on the assessment of oral cavity to know the prevalence of oral problems. Tools will be validated by various concerned experts. Ethical permission will be taken from the principal of school before conducting the research. verbal permission will be taken from study subjects. The calculated value of chi-square is (5.278) which is less than the tabled value (12.592) at 0.05% level of significance, with (6df). Hence, we can conclude that age of the children and awareness regarding oral hygiene is not significantly associated with each other. The obtained data will be compiled, tabulated and analyses by using appropriate statistical method.*

Keywords: Awareness**,** Prevalence, dental problems

1. Introduction

Oral health is a part of general health. Oral health also influences the quality of life. Dental caries and periodontal diseases are the common diseases in populations. These diseases are highly irreversible, once occur and also have complex etiology. Although primary preventive techniques exist to total protection.[1]

Dental caries contributes to be a major problem in many countries, especially in India, where it has consistently reflected an increasing trend in the last couple of decades. The point prevalence surveys have shown persistence of "untreated carious lesions" among children in rural areas. It reflects either non-availability of oral health care services or poor oral health seeking behaviour of rural people.[2]

Dental caries are a leading dental problem of children. 90% of all children have some tooth decay by 12 years of age. Children from socioeconomically deprived areas have more dental caries than those from other groups. Tooth brushing, use of fluorides regular dental check-up, diet and habits are important in the prevention of dental caries.[3]

The children frequently suffer from dental diseases and defects. Dental caries and periodontal diseases are two common diseases in India.[4]

Awareness related to oral health among the children is also found to be poor. It is a common saying mere teaching of cleanliness of body and surrounding is not enough unless it is effectively demonstrated, essential and obligatory "Cleans" to be observed by all children include clean environment, clean hands, clean food, clean water, clean mouth and clean teeth said, and also the house of the most important sense organ,' the tongue'. Therefore, the mouth has to be kept clean and healthy. School age is a period of overall development.[5]

1.1 Research Problem

A Descriptive study to access the awareness regarding oral hygiene and prevalence of oral problems among school children at selected school, Mohali, Punjab, 2015-16.

1.2 Objectives of the study

a) To assess the awareness regarding oral hygiene.
b) To assess and describe prevalence of oral problems.
c) To determine the association between awareness regarding oral hygiene and prevalence of oral problems.
d) To find out the association between awareness and prevalence with selected sociodemographic variable.

2. Review of Literature

The review of literature for the present study has been from published articles, text books, reports of news, letters, Medline and internet search on topics related prevention of home tragedies. [26]

Benley George at all (2015) a descriptive study was conducted on dental caries. A stratified Cluster sampling technique was employed in the selection of 39 schools in the geographical region. A total of 5688 students were screened.1623 students were 5-year-old, 1936 were 12-year-old and 2129 were15-year-old students. The level of significance was set to be $P < 0.05$. The present study revealed that the majority (73.9%) of the12 year's students had healthy gingival. It was revealed that among girls, 21.8% had calculus and 2.5% had bleeding gums.5 year's students who belonged to the lower socioeconomic status (41.5%).

2.1 Research Methodology

Qualitative research approach, Research design selected for the study is descriptive research design. The study was conducted at BSF, Arya Senior Secondary School, Sohana, Mohali (Punjab). Total samples 150 school children of BSF, Arya Senior Secondary School, Sohana, Mohali (Punjab). Purposive sampling technique is used

3. Analysis and Interpretation of Data

In order to find an answer to research problem, the data must be processed, analyses in systematic and some orderly coherent fashion so that pattern and relationship can be discerned. Analysis is the process of organizing and synthesizing data such a way that research questions can be answered .Interpreting the finding is the most challenging and least structured step in findings which requires the investigator to be creative. The purpose of this chapter is to summaries, compose and draw inference related to the generalizations of findings. The data was collected by observing 150 students of BSF, Arya Senior Secondary School Sohana, Mohali (Punjab). The collected data was tabulated and analyzed using descriptive and inferential statistics under following headings:

Organization of data analysis is as follows:

Part-A Finding related to socio- demographic variables.

Table No. 1

| Part-A Socio- Demographic Proforma		Percentage (%)	Frequency (f)
Age in Year	12 Years	20	30
	13 Years	44	66
	14 Years	36	54
Class	7th	20	30
	8th	44	66
	9th	36	54
Sex of the Child	Male	100	150
	Female	0	0
Education of Father	illiterate	0	0
	Middle	8	12
	Matric	41	62
	Senior Secondary	41	62
	Graduate and Above	9	14
Education of Mother	illiterate	0	0
	Middle	26	39
	Matric	35	53
	Senior Secondary	31	47
	Graduate and Above	7	11
Family Monthly Income in Rs.	5000-10000	33	49
	10000-15000	63	94
	15000-20000	5	7
	20000-30000	0	0
	More than 30000	0	0
Locality of Residence	Rural	35	53
	Urban	65	97
Type of Family	Joint Family	20	30
	Nuclear	80	120
Religion	Hindu	42	63
	Sikh	48	72
	Muslim	9	13
	Christian	1	2
Occupation	Govt. Employee	52	78
	Private Employee	48	72
	Unemployed	0	0
	Pensioner	0	0
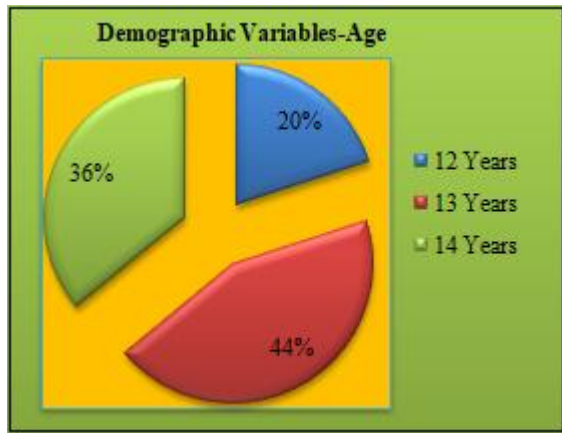
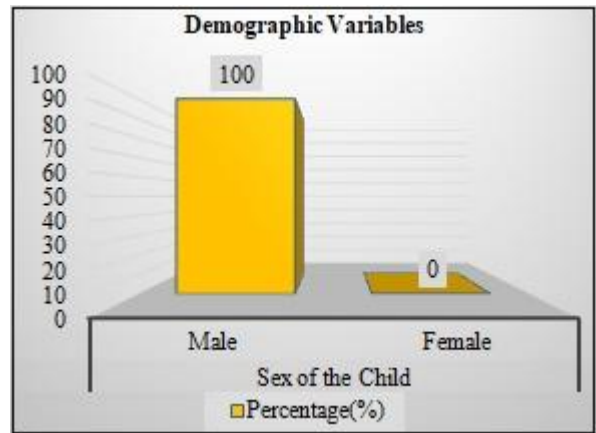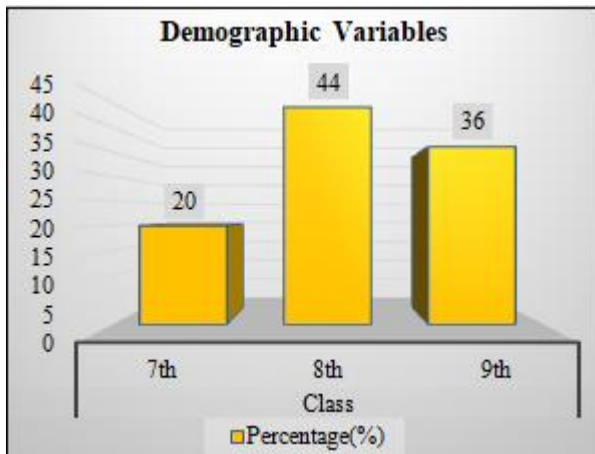**Figure 2:** Figures Shows the Age of Students

Figure 3: Shows the Percentage of the Students.

Figure 4: Figure Shows the Percentage of the Sex of Students

Figure 5: Figure shows the percentage of the sex of the students

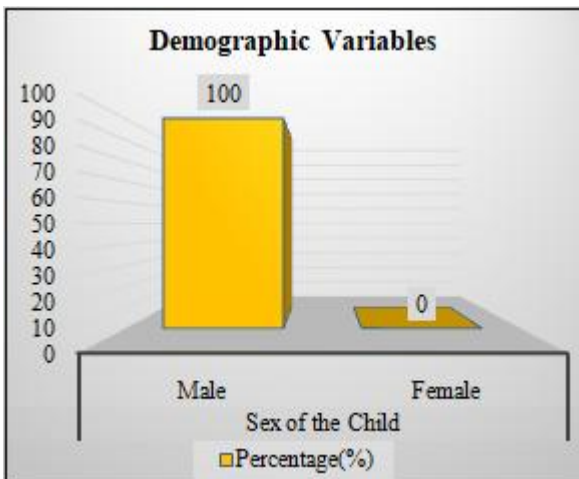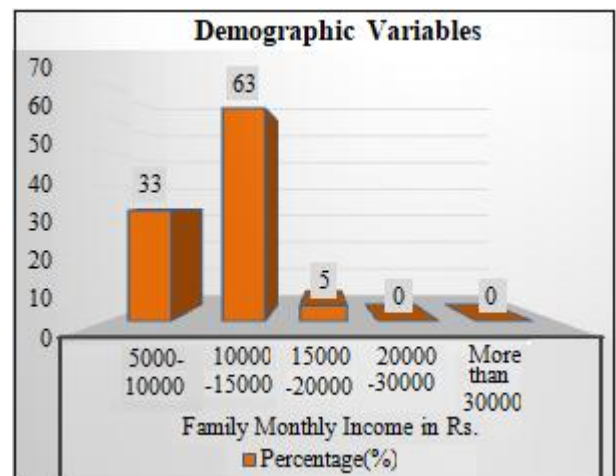**Figure 6:** Figure shows the percentage [%] of the education of mothers

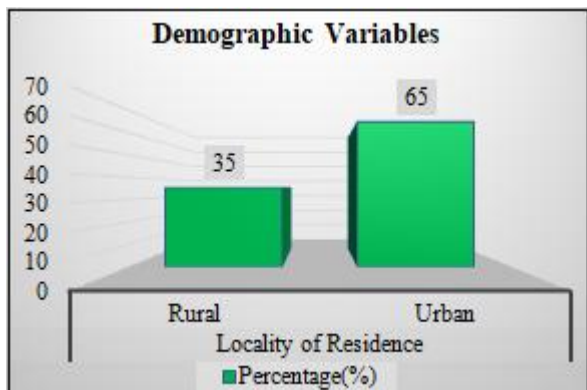**Figure 7:** Figure shows the percentage of the family monthly income in Rs.

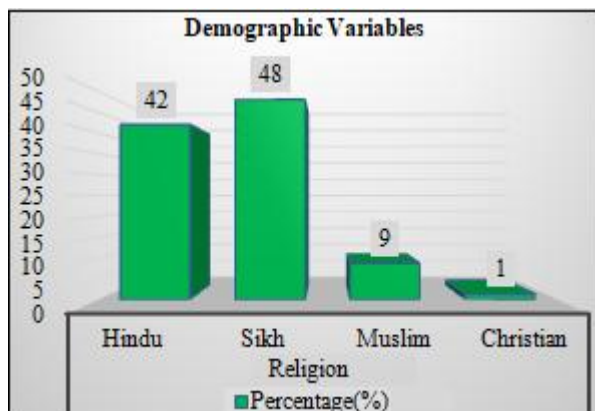**Figure 8:** Figure shows the percentage of the locality of residence students

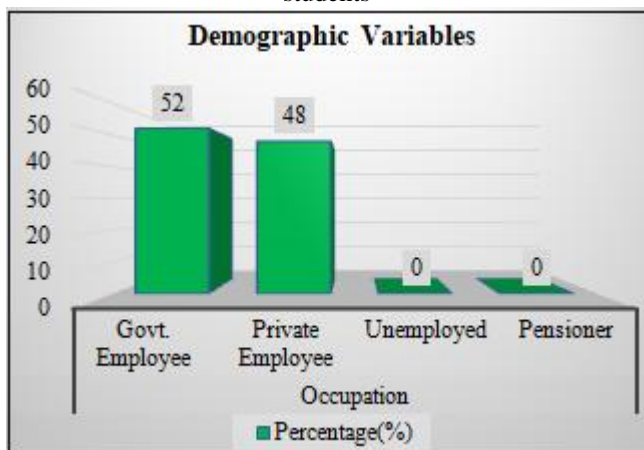**Figure 9:** Figure shows the percentage of the religion students

Figure 10: Figure shows the percentage of the occupation students

Part-b: Finding related to structured questionnaire on aw oral hygiene among school children.

Table 2

Level of Awareness	Frequency F(%)
Poor (0-5)	1(0.7%)
Average (6-10)	3(2%)
Good (11-15)	10(6.7%)
Excellent (16-20)	136(90.7%)

Maximum Score=20
Minimum Score=0

Criteria Measure of Awareness Score
Table 2: Shows the level of scores majority of children that is 90.7% were excellent awareness , 10% were good awareness, 3 % were average awareness regarding oral hygiene and only one % were poor awareness.
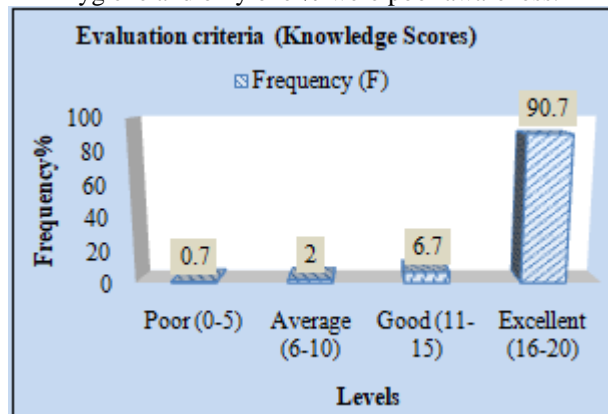
Figure 11: Shows Knowledge Score of Students

Table 3

Descriptive Statistics	Mean	SD	Median	Maximum	Minimum	Range	Mean %	Possible Gain %
Awareness Score	18.69	2.53	20.00	20	5	15	93.5	6.5
Maximum= 20 Minimum= 0								

Table No 3 shows that descriptive statistics and mean percentage awareness regarding oral hygiene i.e. 93.5%

Figure No12: Diagram showing individual score

Figure 12: Shows Awareness Score of the Students

Figure 13: Shows mean score and SD.

Figure 14: Shows Range of Possible Score of Descriptive Statistics

Figure 15: Shows Mean Percentage Score

Table 4

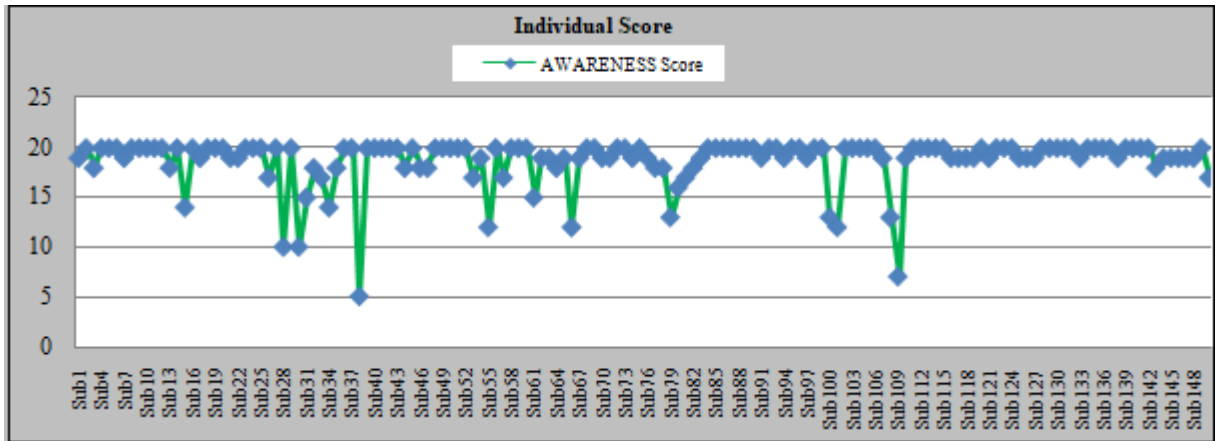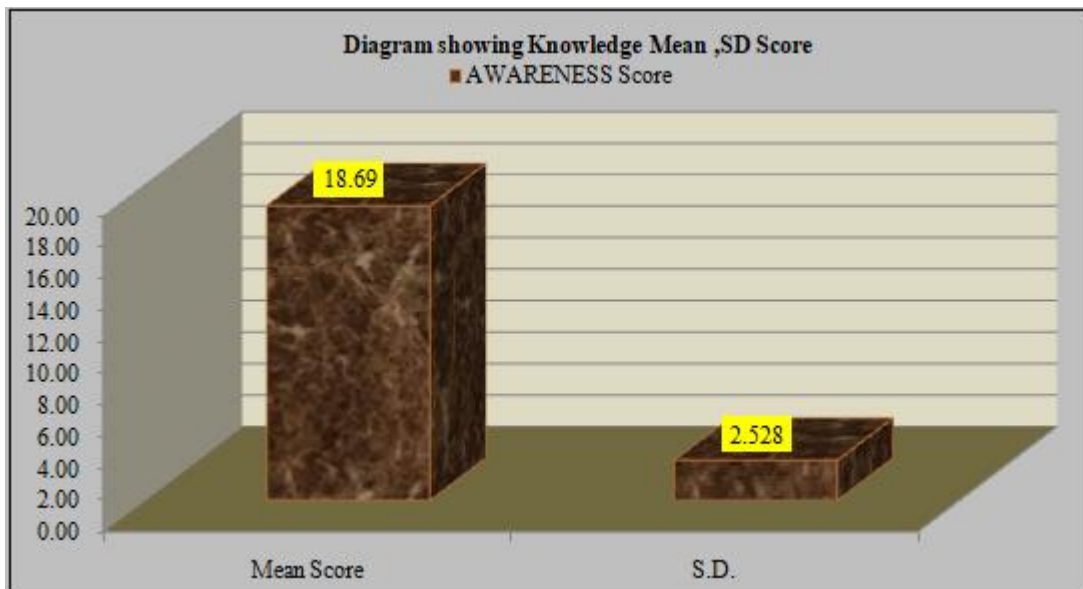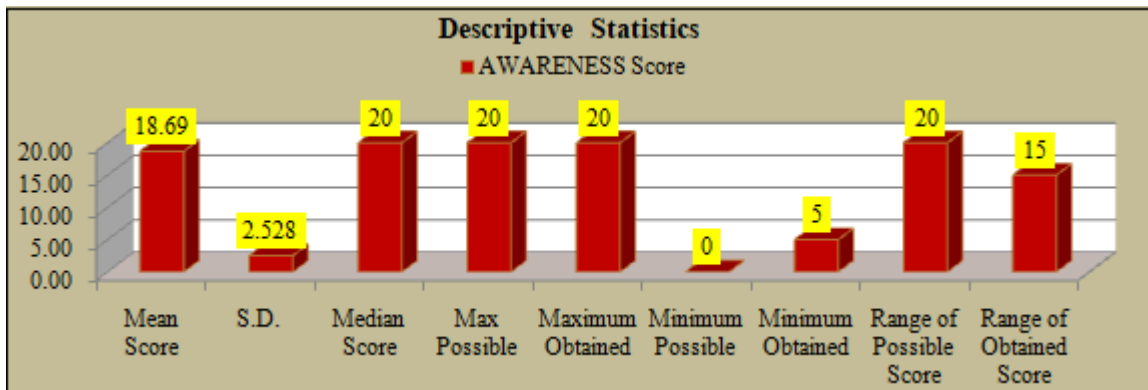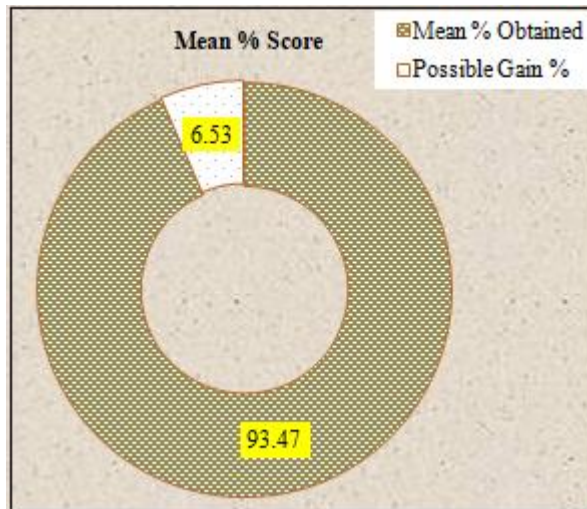| Chi Square Test		Levels(N=150)				Association with AWARENESS Score				
Variable	Opts	Excellent	Good	Average	Poor	Chi Test	P Value	df	Table Value	Result
Age in Year	12 Years	30	0	0	0	5.278	0.509	6	12.592	Not Significant
	13 Years	57	6	2	1					
	14 Years	49	4	1	0					
Class	7th	30	0	0	0	5.278	0.509	6	12.592	Not Significant
	8th	57	6	2	1					
	9th	49	4	1	0					
Sex of the Child	Male	136	10	3	1	NA				
	Female	0	0	0	0					
Education of Father	illiterate	0	0	0	0	3.592	0.936	9	16.919	Not Significant
	Middle	12	0	0	0					
	Matric	55	5	2	0					
	Senior Secondary	56	4	1	1					
	Graduate and Above	13	1	0	0					
Education of Mother	illiterate	0	0	0	0	8.704	0.465	9	16.919	Not Significant
	Middle	36	1	1	1					
	Matric	45	6	2	0					
	Senior Secondary	44	3	0	0					
	Graduate and Above	11	0	0	0					
Family Monthly Income in Rs.	5000-10000	41	6	1	1	11.780	0.067	6	12.592	Not Significant
	10000-15000	89	4	1	0					
	15000-20000	6	0	1	0					
	20000-30000	0	0	0	0					
	More than 30000	0	0	0	0					
Locality of Residence	Rural	50	2	1	0	1.703	0.636	3	7.815	Not Significant
	Urban	86	8	2	1					
Type of Family	Joint Family	29	0	0	1	7.399	0.060	3	7.815	Not Significant
	Nuclear	107	10	3	0					
Religion	Hindu	57	4	2	0	3.431	0.945	9	16.919	Not Significant
	Sikh	64	6	1	1					
	Muslim	13	0	0	0					
	Christian	2	0	0	0					
Occupation	Govt. Employee	71	4	2	1	1.761	0.623	3	7.815	Not Significant
	Private Employee	65	6	1	0					
	Unemployed	0	0	0	0					
	Pensioner	0	0	0	0					

Table no-4 shows that the age of the children is not significant bur chi-square test was 5.278, p value was 0.509, df was 6 and table value was 12.592. class of the children was also not significant, but the calculation value of chi-square test was 0.509, p value was 0.509, df was 6 and table value was 12.592. Sex of the children was not applicable. Father education level of the children not significant, but the calculation value of chi-square test was 3.592, p value was 0.936, df was 9 and table value was 16.919. Mother education level of children was not significant. but the calculation value of chi-square test was 8.704, p value was 0.465, df was 9 and table value was 16.919. family monthly income, locality of residence , type of family, religion and occupation was not significant.

Table 5

Association with F/T Test								
Variable	Opts	Mean	Standard Deviation	N	DF	F/T Test	P Value	Result
Age in Year	12 Years	19.10	.92	30	2/147	1.352	0.262	Not Significant
	13 Years	18.32	3.05	66				
	14 Years	18.93	2.39	54				
Class	7th	19.10	.92	30	2/147	1.352	0.262	Not Significant
	8th	18.32	3.05	66				
	9th	18.93	2.39	54				
Sex of the Child	Male	18.69	2.53	150				
	Female							
Education of Father	illiterate				3/146	0.501	0.682	Not Significant
	Middle	19.17	1.03	12				
	Matric	18.52	2.49	62				
	Senior Secondary	18.65	2.94	62				
	Graduate and Above	19.29	1.38	14				
Education of Mother	illiterate				3/146	1.053	0.371	Not Significant
	Middle	18.51	2.92	39				
	Matric	18.38	2.86	53				
	Senior Secondary	18.98	1.96	47				
	Graduate and Above	19.64	.67	11				
Family Monthly Income in Rs.	5000-10000	18.14	3.21	49	2/147	2.495	0.086	Not Significant
	10000-15000	19.04	1.75	94				
	15000-20000	17.86	4.85	7				
	20000-30000							
	More than 30000							
Locality of Residence	Rural	19.04	1.88	53	148	1.234	0.219	Not Significant
	Urban	18.51	2.81	97				
Type of Family	Joint Family	18.67	2.83	30	148	0.064	0.949	Not Significant
	Nuclear	18.70	2.46	120				
Religion	Hindu	18.68	2.41	63	3/146	0.363	0.780	Not Significant
	Sikh	18.58	2.83	72				
	Muslim	19.15	1.14	13				
	Christian	20.00	0.00	2				
Occupation	Govt. Employee	18.67	2.68	78	148	0.133	0.894	Not Significant
	Private Employee	18.72	2.37	72				
	Unemployed							
	Pensioner							

Table no-5 shows analysis of association of F/T test that the age of the children was not significant but calculation value df 2/147, f/t test 1.352, p value 0.262. class of the children was also not significant, but calculation value of df value 2/147 ,f/t test 1.352, p.value 0.262. Sex of the children was not applicable. Father education level of the children not significant, but the calculation value of df 3/146, f/t test .0.501 , p value was 0.682, Mother education level of children was not significant. but the calculation value of df. 3/146 , f/t test was 1.053 p value was 0.371, family monthly income was not significant, df 2/147, f/t test 2.95 , p value was 0.086, locality of residence was not significant, df 148, f/t test 1.234 , p value was 0.219, Type of family not significant, df 148, f/t test 0.64 , p value was 0.949, Religion df 3/146, f/t test 0.363 , p value was 0.780, occupation was not significant. But calculated value df 148, f/t, test 0.133, p value was 0.893.

Item wise analysis of structured questionnaire. (Correct and incorrect scores)

Table 6

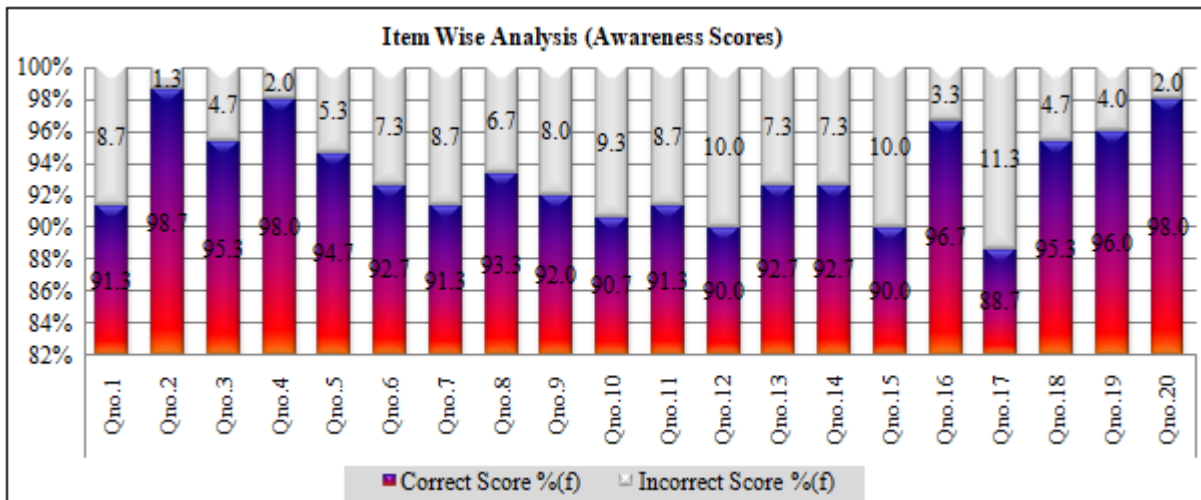| Area	Item wise Analysis	Correct Score %(f)	Incorrect Score %(f)
Part-B AWARENESS	Qno.1	91.3	8.7
	Qno.2	98.7	1.3
	Qno.3	95.3	4.7
	Qno.4	98.0	2.0
	Qno.5	94.7	5.3
	Qno.6	92.7	7.3
	Qno.7	91.3	8.7
	Qno.8	93.3	6.7
	Qno.9	92.0	8.0
	Qno.10	90.7	9.3
	Qno.11	91.3	8.7
	Qno.12	90.0	10.0
	Qno.13	92.7	7.3
	Qno.14	92.7	7.3
	Qno.15	90.0	10.0
	Qno.16	96.7	3.3
	Qno.17	88.7	11.3
	Qno.18	95.3	4.7
	Qno.19	96.0	4.0
	Qno.20	98.0	2.0

Figure 16: Shows the item wise analysis (awareness score).

Table 7: Shows responses of subject in yes and no.

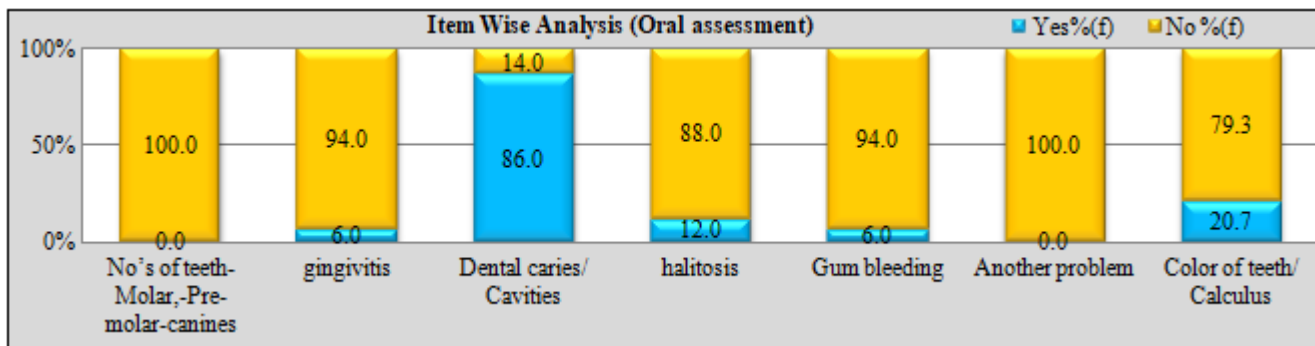| Area	Item wise Analysis	Yes% (f)	No % (f)
PART-B Assessment of oral cavity:	No's of teeth-Molar,-Pre- molar-canines	0.0	100.0
	gingivitis	6.0	94.0
	Dental caries/ Cavities	86.0	14.0
	halitosis	12.0	88.0
	Gum bleeding	6.0	94.0
	Another problem	0.0	100.0
	Color of teeth/ Calculus	20.7	79.3

Figure 17

4. Discussion

The major findings of this study are as follow:

According to sociodemographic variable the age of 12 years 20% (30) 13 years 44 % (66) 14 years 36% (54), class 7th 20% (30), 8th class 44% (66) 9th 36% (54) sex of the child male 100% female 0%, education of father ,illiterate 0%, middle 8% (12), Matric 41% (62), Senior Secondary 41% (62) graduate and above 9% (14). Education of mother illiterate 0% Middle 26% (39) Metric 35% (53) Senior Secondary 31% (47) Graduate and Above 7% (11) Family monthly income in Rs.5000-10000 33% (49) 10000-15000 63% (94) 15000-20000, 5% (97) locality of residence rural 35% (53), type of family, joint family 20% (30) nuclear 80% (120) religion Hindu 42% (63), Sikh 48% (72) Muslim 9% (13) Christian 1% (2) , occupation govt. employee 52% (78) private 48% (72).[97]

The findings of the present study was supported by a descriptive study was conducted by **Bajoma et al (2004).** Majority of the children that is 44% were 13 yr of age, 36% were 14 year of age. 20% were 12 year of age. The overall prevalence of subjects was 79.4% with high prevalence of oral problems among school children. Majority of the children 90.7% were excellent awareness, 10% were Good awareness, 3% were aver average awareness regarding oral hygiene. And only one % were very poor awareness regarding oral hygiene. Descriptive statistics showing that the mean % age awareness regarding oral hygiene was 93.5%. The calculated value of chi-square is (5.278) which is less than the table value (12.592) at 0.05% level of significance, with (6df). Hence, we can conclude that age of the children and awareness regarding oral hygiene is not significantly associated with each other. This finding may be due to the fact that the less awareness of oral hygiene in school children. The reason for the higher prevalence of dental problems in years may be due to lack of knowledge and awareness about oral care.

Table No 7 shows that prevalence of oral hygiene according to item wise is gingivitis yes 9(f) is 6.0. no (f). fr. Is 94.0. dental caries/ cavities yes (f) is 86.0 , No. (F) is 14.0' halitosis yes (f) 12.0, No (f) is 88.0, gum bleeding yes, (f) is

6.0 , No (f) is 94.0. Another problems Yes, (f)).0.0 No, (f) 100.0. colour of teeth / calculus yes (f) 79.3.

The findings of the present study was supported by a exploratory study was conducted by **Kulkami SS, Deshpande SD. (2002)** study was conducted on Caries prevalence and treatment needs in 11-15 year old children of Belgaum city. The present study was carried out on 2005 school going children between 11-15years of age, studying at Belgaum city. The sample was selected by stratified random sampling method. The examination was done under natural light and caries was diagnosed according to WHO criteria (1987). The prevalence of dental caries in the present population was 45.12%. The needs for other treatment modalities have been discussed in relation to the dental caries prevalence. The results of this study call for more emphasis on restorative care for these children at primary level.[72]

This study assessed the prevalence of dental problems and evaluated the oral hygiene of schools children. The overall oral prevalence of subjects was 95.3% with high oral prevalence among school children as mentioned above.

Table no-4 shows that association between awareness regarding oral hygiene and prevalence of oral problems according to the age of the children is not significant bur chi-square test is 5.278, p value is 0.509, df is 6 and table value is 12.592. class of the children is also not significant, but the calculation value of chi-square test is 0.509, p value is 0.509, df is 6 and table value is 12.592. Sex of the children is not applicable. Father education level of the children not significant, but the calculation value of chi-square test is 3.592, p value is 0.936, df is 9 and table value is 16.919. Mother education level of children is not significant. but the calculation value of chi-square test is 8.704, p value is 0.465, df is 9 and table value is 16.919. family monthly income, locality of residence , type of family, religion and occupation is not significant.

The findings of the present study was supported by a descriptive study was conducted by **JOSE at all (2013)** was conducted on association between awareness regarding oral hygiene and prevalence of oral dental problems. The purpose of this study was to know the prevalence and pattern of dental health problems in rural school children and to identify the priority area for dental health education programmes. The children were examined and findings recorded, the findings show that more than 50% of the children in the 12 to 15 years of age group in rural suffers from some form of dental diseases. Males and females are equally affected and dental caries is the most common problem encountered.[73]

Table no-4 shows the association between awareness and prevalence with selected sociodemographic variable that the age of the children is not significant but chi-square test is 5.278, p value is 0.509, df is 6 and table value is 12.592. class of the children is also not significant, but the calculation value of chi-square test is 0.509, p value is 0.509, df is 6 and table value is 12.592. Sex of the children is not applicable. Father education level of the children not significant, but the calculation value of chi-square test is 3.592, p value is 0.936, df is 9 and table value is 16.919. Mother education level of children is not significant. but the calculation value of chi-square test is 8.704, p value is 0.465, df is 9 and table value is 16.919. family monthly income, locality of residence , type of family, religion and occupation is not significant.

The findings of the present study was supported by a descriptive study was conducted by **Vinay Kumar Bhardwaj (2012)** the study was conducted in Shimla. The purpose of the study was to assess the prevalence of dental caries among five year old school children. The sample consisted of 800 school going children 421 (52.62%) boys and 379 (47.38%) girls from government primary schools which were selected randomly from four different zones of Shimla. The data obtained was analyzed by SPSS version 15 (Inc., Chicago) using proportion test for comparison. Boys were having higher caries prevalence than girls, (46.8% vs 41.6%) and the difference was statistically significant ($P<0.05$). Caries prevalence was higher in the mandibular arch than in the maxillary arch among both the gender with a difference which was significant statistically. When the caries prevalence of the anterior teeth was compared between the gender, boys showed higher caries prevalence than girls.[74]

5. Summary, Conclusion, and Recommendations

Oral health is a part of general health. Oral health also influences the quality of life. Dental caries and periodontal diseases are the common diseases in populations. These diseases are highly irreversible, once occur and also have complex etiology. Although primary preventive techniques exist to total protection.

Dental care or broadly speaking oral hygiene is an important aspect of the personal health of an individual. Good oral hygiene implies sound teeth and healthy gums with healthy surroundings tissues. The physical act of chewing food promotes saliva and gastric secretions and helps indigestion.

Benley George at all (2015) a descriptive study was conducted on dental caries. A stratified Cluster sampling technique was employed in the selection of 39 schools in the geographical region. A total of 5688 students were screened.1623 students were 5-year-old, 1936 were 12-year-old and 2129 were15-year-old students. The level of significance was set to be $P < 0.05$. The present study revealed that the majority (73.9%) of the12 year's students had healthy gingival. It was revealed that among girls, 21.8% had calculus and 2.5% had bleeding gums.5 year's students who belonged to the lower socioeconomic status (41.5%). The study reveals that dental caries still remains as a major oral health problem among school children of all age group. Gingival problems also formed one of the major oral health problems of 12 and 15-year-old school children.[19]

6. Implications

The findings of study are implicated in different areas such as Nursing Practice, Nursing Education, Nursing

administration and Nursing research. The findings of study have several implications which are discussed in following areas.

- **Nursing practice:** The nursing personnel can give health education both in hospitals and in community areas helps in increasing the information regarding healthy oral practices which will further helps in preventing prevalence of oral problems.
- **Nursing administration:** Nurse Administrator can conduct health education program on practices of oral hygiene and prevalence of oral problems.
- **Nursing research:** The findings need to be disseminated through seminars, conference and published to journals.
- **Nursing education:** Nursing curriculum should provide opportunity for students to participate in health promotion and disease prevention programs specifically in dental care.

7. Recommendations

A similar study can be done on subjects with different socio demographic characteristics. A similar study can be done for the school children rural and urban community areas. A comparative study can be done between a higher secondary and college students. Similar study can be done on larger sample for wider generalization.

References

[1] Barmes DE . A global view of oral diseases: today and tomorrow. Community Dent Oral Epidemiol 1999;27(1):2–7. Reviewed on 1.3.2016.

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