A Study to Assess the 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: Oral health helps to maintain the health state of all the structures like lips, teeth, gum, tongue and palate, good oral hygiene emphasis on cleanliness and moisturizing of mouth structures. Objectives of the study is to assess the prevalence of oral problems among school children**,** determine the awareness of oral hygiene among school children**,** develop and distribute information booklet regarding prevalence of oral problem and awareness regarding oral hygiene, co-relate the prevalence of oral problems with awareness of oral hygiene among school children, find out the association between prevalence of oral problems and awareness of oral hygiene with selected sociodemographic variable. Material and Methods: Non- experimental descriptive research approach was employed descriptive design. A set of self-administered knowledge questionnaires was used to collect data. Written permission has obtained from the research ethical committee and formal written permission has also been obtained from the Principal of selected senior secondary schools The reliability of the tool was determined by using split half method and the tool was found to be highly reliable. Result: The findings reveal that 0.7% children had inadequate knowledge regarding oral hygiene, 7.0% children had moderate knowledge regarding oral hygiene, 92.3% children had adequate knowledge regarding oral hygiene. Mean Percentage Scores 46.02 and SD 6.118.

Keywords: Assess, Awareness, Oral Hygiene, Prevalence, School Children

I. 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.

II. RESEARCH PROBLES

A study to assess the prevalence of oral problems and awareness regarding oral hygiene among secondary school children in selected schools at Shimla, Himachal Pradesh, India.

III. OBJECTIVES OF THE STUDY

1. To assess the prevalence of oral problems among secondary school children.
2. To determine the awareness of oral hygiene among secondary school children
3. To co-relate the prevalence of oral problems with awareness of oral hygiene among secondary school children.
4. To find out the association between prevalence of oral problems and awareness of oral hygiene with selected sociodemographic variable.
5. To develop and distribute information booklet regarding prevalence of oral problem and awareness regarding oral hygiene among secondary school children.

IV. RESEARCH METHODOLOGY

Non- experimental descriptive research approach was employed descriptive design. Study was conducted at selected senior secondary schools. Children those who are studying in selected school. Sample size for this study was 300 senior secondary school children in selected schools. Simple random sampling technique had been adopted for the present study.

A set of self-administered knowledge questionnaires was used to collect data from senior secondary school children. Based on the objective of the study the data collection tools were selected in order to obtain necessary data. **Ethical consideration:** Written permission has obtained from the research ethical committee and formal written permission has also been obtained from the Principal of selected senior secondary schools. **Validity:** The structured questionnaire has used to assess the prevalence and awareness of children regarding oral hygiene. The validity of tool was ascertained in consultation with guide and other experts from various fields like nursing and pediatrician. **Pilot study**: The pilot study was conducted to check the relevancy and practicability of the tool for main study. **Procedure for data collection**: A formal written permission was obtained from the school for ethical consideration. **Reliability of the tool:** The reliability of the tool was determined by using split half method.

V. DATA ANALYSIS AND INTERPRETATION OF RESULT

The statistical analysis was performed using SPSS version 21.0, USA. Proportions were compared by using Pearson's Chi-square test. The level of significance was set at $P < 0.05$. These all findings are documented in tabulation, graphs and diagrams.

Table No:1 Shows frequency and percentage distribution of prevalence of oral problems and awareness regarding oral hygiene   **n-300**

SECTION-1 SOCIO DEMOGRAPHIC PROFORMA		Percentage (%)	Frequency(f)
Age in year	15-16 years	37%	112
	16-17 years	21%	64
	17-18 years	41%	124
Class	10th	41%	124
	11th	59%	176
	12th	0%	0
Gender	Male	63%	189
	Female	37%	111
Education of Father	Illiterate	20%	61
	Middle	21%	64
	Matric	22%	65
	Senior secondary	37%	110
	Graduate and above	0%	0
Education of Mother	Illiterate	22%	65
	Middle	41%	124
	Matric	0%	0
	Senior secondary	0%	0
	Graduate and above	37%	111
Family Monthly Income in Rs.	5000 to 10000	21%	63
	10000 to 15000	0%	0
	15000 to 20000	22%	65
	20000 to 30000	42%	125
	Above 30000	16%	47
Locality of Residence	Rural	42%	125
	Urban	58%	175
Type of Family	Joint family	58%	175
	Nuclear	42%	125

Religion	Hindu	52%	171
	Sikh	21%	64
	Muslim	13%	40
	Christian	14%	40
Occupation	Govt. employee	37%	111
	Private employee	0%	0
	Unemployed	21%	63
	Pensioner	42%	126
Source of Information	T.V.	20%	61
	Radio	37%	110
	News Paper	0%	0
	Internet	22%	65
	Class room	21%	64

Table No: 2 Table Showing Levels of Scores

CRITERIA MEASURE OF AWARENESS SCORE		
Category Score	**Percentage**	**Frequency**
ADEQUATE(35-50)> 67%	92.3%	277
MODERATE(18-34) 34 – 66%	7.0%	21
INADEQUATE(0-17) < 33%	0.7%	2

Maximum Score=50 Minimum Score=0

Descriptive Statistics	Mean	SD	Median	Maximum	Minimum	Range	Mean %
AWARENESS Score	46.02	6.12	48.00	50	12	38	92.0 +--

Maximum= 50 Minimum= 0

Figure No: 15 Distribution of subjects according to Mean Percentage Scores

Table No: 4 Showing Associations of Scores and Demographic Variables

Demographic Variables		Levels (N=300)			Association with AWARENESS Score				
Variable	**Opts**	Adequate	Moderate	Inadequate	**Chi Test**	**P Value**	**df**	**Table Value**	**Result**
Age in year	15 year	101	11	0	5.740	0.219	4	9.488	Not Significant
	16 year	62	2	0					
	17 year	114	8	2					

Class	10th	114	8	2					
	11th	163	13	0	2.933	0.231	2	5.991	Not Significant
	12th	0	0	0					
Gender	Male	173	14	2	1.331	0.514	2	5.991	Not Significant
	Female	104	7	0					
Education of Father	Illiterate	53	6	2					
	Middle	62	2	0					
	Matric	59	6	0	10.812	0.094	6	12.592	Not Significant
	Senior secondary	103	7	0					
	Graduate and above	0	0	0					
Education of Mother	Illiterate	59	6	0					
	Middle	114	8	2					
	Matric	0	0	0	3.472	0.482	4	9.488	Not Significant
	Senior secondary	0	0	0					
	Graduate and above	104	7	0					
Family Monthly Income in Rs.	5000 to 10000	61	2	0					
	10000 to 15000	0	0	0					
	15000 to 20000	59	6	0	5.734	0.454	6	12.592	Not Significant
	20000 to 30000	115	8	2					
	Above 30000	42	5	0					
Locality of Residence	Rural	115	8	2	2.913	0.233	2	5.991	Not Significant
	Urban	162	13	0					
Type of Family	Joint family	162	13	0	2.913	0.233	2	5.991	Not Significant
	Nuclear	115	8	2					
Religion	Hindu	59	6	0					
	Sikh	62	2	0	10.812	0.094	6	12.592	Not Significant
	Muslim	103	7	0					
	Christian	53	6	2					
Occupation	Govt. employee	104	7	0					
	Private employee	0	0	0	5.624	0.229	4	9.488	Not Significant
	Unemployed	61	2	0					
	Pensioner	112	12	2					
Source of Information	T.V.	53	6	2					
	Radio	103	7	0					
	News Paper	0	0	0	10.812	0.094	6	12.592	Not Significant
	Internet	59	6	0					
	Class room	62	2	0					

Table No: 7 Descriptive score according to Demographic variables.   n-300

AWARENESS SCORE					
Frequency Distribution		Mean%	Mean	SD	N
Age in year	15 year	91.9%	45.95	5.54	112
	16year	93.3%	46.66	5.18	64
	17 year	91.5%	45.75	7.02	124

Class	10th	91.5%	45.75	7.02	124
	11th	92.4%	46.20	5.40	176
	12th	0.0%			0
Gender	Male	91.7%	45.83	6.64	189
	Female	92.7%	46.33	5.12	111
Education of Father	Illiterate	89.0%	44.49	9.17	61
	Middle	93.3%	46.66	5.18	64
	Matric	92.0%	45.98	5.89	65
	Senior secondary	93.0%	46.51	4.33	110
	Graduate and above	0.0%			0
Education of Mother	Illiterate	92.0%	45.98	5.89	65
	Middle	91.5%	45.75	7.02	124
	Matric	0.0%			0
	Senior secondary	0.0%			0
	Graduate and above	92.7%	46.33	5.12	111
Family Monthly Income in Rs.	5000 to 10000	93.9%	46.97	3.67	63
	10000 to 15000	0.0%			0
	15000 to 20000	92.0%	45.98	5.89	65
	20000 to 30000	91.2%	45.60	7.45	125
	Above 30000	91.8%	45.89	5.07	47
Locality of Residence	Rural	91.2%	45.60	7.45	125
	Urban	92.6%	46.31	4.96	175
Type of Family	Joint family	92.6%	46.31	4.96	175
	Nuclear	91.2%	45.60	7.45	125
Religion	Hindu	92.0%	45.98	5.89	65
	Sikh	93.3%	46.66	5.18	64
	Muslim	93.0%	46.51	4.33	110
	Christian	89.0%	44.49	9.17	61
Occupation	Govt. employee	92.7%	46.33	5.12	111
	Private employee	0.0%			0
	Unemployed	93.9%	46.97	3.67	63
	Pensioner	90.5%	45.26	7.66	126
Source of Information	T.V.	89.0%	44.49	9.17	61
	Radio	93.0%	46.51	4.33	110
	News Paper	0.0%			0
	Internet	92.0%	45.98	5.89	65
	Class room	93.3%	46.66	5.18	64

2nd Variable

Table No:8 Table Showing Level of Scores

CRITERIA MEASURE OF ORAL PROBLEMS SCORE		
Category Score	Percentage	Frequency
SEVERE(7-10)	11.3%	34
MODERATE(4-6)	75.0%	225
MILD(1-3)	13.7%	41

Maximum Score=10 Minimum Score=0

Table No:9 Descriptive Statistics table

Descriptive Statistics	Mean	SD	Median	Maximum	Minimum	Range	Mean %
ORAL PROBLEMS Score	5.18	1.38	5.00	10	3	7	51.8

Maximum= 10 Minimum= 0

Table No: 10 Table Showing Associations of Scores and Demographic Variables.

Demographic Variables		Levels (N=300)			Association with ORAL PROBLEMS Score				
Variable	Opts	SEVERE	MODERATE	MILD	Chi Test	P Value	df	Table Value	Result
Age in year	15 year	11	85	16	1.546	0.818	4	9.488	Not Significant
	16 year	10	46	8					
	17 year	13	94	17					
Class	10th	13	94	17	0.153	0.926	2	5.991	Not Significant
	11th	21	131	24					
	12th	0	0	0					
Gender	Male	18	144	27	1.716	0.424	2	5.991	Not Significant
	Female	16	81	14					
Education of Father	Illiterate	7	46	8	2.157	0.905	6	12.592	Not Significant
	Middle	10	46	8					
	Matric	5	50	10					
	Senior secondary	12	83	15					
	Graduate and above	0	0	0					
Education of Mother	Illiterate	5	50	10	2.103	0.717	4	9.488	Not Significant
	Middle	13	94	17					
	Matric	0	0	0					
	Senior secondary	0	0	0					
	Graduate and above	16	81	14					
Family Monthly Income in Rs.	5000 to 10000	6	48	9	1.927	0.926	6	12.592	Not Significant
	10000 to 15000	0	0	0					
	15000 to 20000	5	50	10					
	20000 to 30000	17	92	16					
	Above 30000	6	35	6					
Locality of Residence	Rural	17	92	16	1.145	0.564	2	5.991	Not Significant
	Urban	17	133	25					
Type of Family	Joint family	17	133	25	1.145	0.564	2	5.991	Not Significant
	Nuclear	17	92	16					
Religion	Hindu	5	50	10	2.157	0.905	6	12.592	Not Significant
	Sikh	10	46	8					
	Muslim	12	83	15					
	Christian	7	46	8					

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Occupation	Govt. employee	16	81	14					
	Private employee	0	0	0	1.716	0.788	4	9.488	Not Significant
	Unemployed	6	48	9					
	Pensioner	12	96	18					
Source of Information	T.V.	7	46	8					
	Radio	12	83	15					
	News Paper	0	0	0	2.157	0.905	6	12.592	Not Significant
	Internet	5	50	10					
	Class room	10	46	8					

The calculated chi-square value was less than the table value at the 0.05 level of significance.

Other Optional Tables

Table No: 12 Item wise analysis of oral problems   n-300

ITEMWISE ANALYSIS		Yes %(f)	No %(f)
1.	Mouth sours	43	57
2.	Gingivitis	61	39
3.	Dental caries	63	37
4.	Halitosis	77	23
5.	Gum bleeding	28	72
6.	Oral thrush	0	100
7.	Calculus	68	32
8.	Bad breath	66	34
9.	Tooth ache	57	43
10.	Swelling	52	47

Table No: 13   Descriptive score according to Demographic variables.   n-300

ORAL PROBLEMS SCORE					
Frequency Distribution		Mean %	Mean	SD	N
Age in year	15 year	51.9%	5.19	1.40	112
	16 year	52.5%	5.25	1.44	64
	17 year	51.5%	5.15	1.34	124
Class	10th	51.5%	5.15	1.34	124
	11th	52.1%	5.21	1.41	176
	12th	0.0%			0
Gender	Male	51.1%	5.11	1.32	189
	Female	53.2%	5.32	1.46	111
Education of Father	Illiterate	51.8%	5.18	1.36	61
	Middle	52.5%	5.25	1.44	64
	Matric	50.3%	5.03	1.31	65
	Senior secondary	52.4%	5.24	1.41	110
	Graduate and above	0.0%			0

Education of Mother	Illiterate	50.3%	5.03	1.31	65
	Middle	51.5%	5.15	1.34	124
	Matric	0.0%			0
	Senior secondary	0.0%			0
	Graduate and above	53.2%	5.32	1.46	111
Family Monthly Income in Rs.	5000 to 10000	51.1%	5.11	1.32	63
	10000 to 15000	0.0%			0
	15000 to 20000	50.3%	5.03	1.31	65
	20000 to 30000	52.2%	5.22	1.39	125
	Above 30000	54.0%	5.40	1.51	47
Locality of Residence	Rural	52.2%	5.22	1.39	125
	Urban	51.6%	5.16	1.37	175
Type of Family	Joint family	51.6%	5.16	1.37	175
	Nuclear	52.2%	5.22	1.39	125
Religion	Hindu	50.3%	5.03	1.31	65
	Sikh	52.5%	5.25	1.44	64
	Muslim	52.4%	5.24	1.41	110
	Christian	51.8%	5.18	1.36	61
Occupation	Govt. employee	53.2%	5.32	1.46	111
	Private employee	0.0%			0
	Unemployed	51.1%	5.11	1.32	63
	Pensioner	51.0%	5.10	1.33	126
Source of Information	T.V.	51.8%	5.18	1.36	61
	Radio	52.4%	5.24	1.41	110
	News Paper	0.0%			0
	Internet	50.3%	5.03	1.31	65
	Class room	52.5%	5.25	1.44	64

Correlation between both Tools.

V. DISCUSSION

MAJOR FINDINGS OF THE STUDY:

The result of the study was discussed according to the study findings.

- Maximum of the study subjects 20% watch Television, 37% from radio, 22%, from internet and 21% from classroom.
- Findings related to awareness of oral hygiene score: Majority of the subjects 99.9% were well aware about oral hygiene.
- Findings related to Prevalence of oral problems scores: Maximum of the study subjects 77 % were suffering with halitosis and 0% with oral thrush.
- Correlation between both Tools. Prevalence of oral problems and awareness regarding oral hygiene.
- Pearson co-relation predict awareness score, mean,46.02, SD, 6.118 and oral problem score mean, 5.18, SD 1.379 Co-relation 0.073, table value, 0.113 P value, 0.206 and result were non significant.
- Chi-square test used to associate the level of awareness and descriptive score according to Demographic variables. With regard to age, maximum no of 15 years were 112, mean % is (99.9%), and mean 45.95 an SD 5.54. 16 years were 64, mean % is (93.3%), mean 46.66 an SD 5.18. and 17 years were 124, mean % is (91.5.%) , mean 45.75 an SD 7.02. selected demographic variables. The calculated chi-square values were less than the table value at the 0.05 level of significance.

VI. CONCLUSION

The following conclusion is drawn from the study:
In the present study 300 students participated. The findings of the study revealed that majority of school children show moderate level of awareness about oral hygiene and prevalence of oral problems.

IMPLICATIONS: The investigator had drawn following implications from the study i.e for nursing service, nursing education, nursing research.

NURSING SERVICE: This study moves attention towards the assessment of awareness of oral hygiene and prevalence of oral problems and strategies adopted to management of the oral problems, it emphasize the need to concern about the students oral hygiene and prevalence of oral problems and management strategies ,if the nurse in school health care setting know about the level of oral hygiene and prevalence of oral problems and the strategies which are adopted to manage both ,it would enhance standardized care and better rehabilitation for the prevalence of oral hygiene and oral problems.

NURSING EDUCATION: The study has important implications in nursing education. As addressed by the result there is moderate level of oral problems among school children.

NURSING RESEARCH: The findings of the study can be disseminated through seminars, conferences and can be published in nursing journal.

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