

**INFLUENCE OF SOCIOECONOMIC STATUS AND HOME ENVIRONMENTAL FACTORS AND ORAL HYGIENE IN 12 , 15 -YEAR OLD SCHOOL CHILDREN .**

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**ABSTRACT: -**

To detect the relationship between socioeconomic status and oral hygiene status in 12, 15 years school going children. A Cross sectional study to be conducted involving the administration of a set of questionnaires which includes questions related to demographic profile , use of oral hygiene aid , frequency and duration of cleaning teeth , changing of tooth brush , rinsing of mouth with water and the socioeconomic status of the population to be assessed using kuppusamy scale (urban) and UDAI PAREEK SCALE (rural) which is based on per capita income per month , education status and occupational status of study population , oral hygiene health is recorded using simplified oral hygiene index ( John C. Greene and Jack R. Vermillion – 1964)It is learnt that with the increase in socioeconomic status the oral hygiene practices increases. Since the standard of living increases, the knowledge and awareness regarding the oral hygiene practices also increases significantly.

**KEYWORDS: -** Urban students, Rural student, Oral hygiene status comparison.

**INTRODUCTION: -**

Oral health-related quality of life (OHRQoL) is seen as a significant component of oral health and needs. It is defined as” the absence of negative impacts of oral diseases and physical, social, and psychological wellbeing and a positive sense of dentofacial self-confidence, [1].

Dental caries is one of the most prevalent diseases among children. Major complications associated with dental caries are dental alveolar infection and pain. These complications can adversely affect the quality of life in children and can place undue financial burden on the families. Studies have clearly established the dental caries is not a static process but instead a dynamic process where demineralization and remineralization of tooth go side by side, [2].

Study of this age group is important as INDIA is a country of wide spread diversity in the socioeconomic status and oral health status in rural and urban areas of same country, [3].

Good oral health behavior such as proper oral hygiene can easily prevent major oral diseases such as dental caries, periodontal diseases and oral cancer. Adopting healthy life styles can thus effectively and efficiently lead to prevention of oral diseases, [4].

The present study attempts to explore various oral health related behaviors in the context of social inequalities among young adults in INDIA. Such investigations are pivotal as they shed light into distal determinacy of oral health. They provide valuable baseline information for planning, implementing and evaluating oral health intervention programs. They will pave the way for oral health promotions initiatives and might have important contributions to make towards prevention of oral diseases, [5,7].

One can thus infer that the causes that precipitate disease in the present scenario are rooted in events/factors that influenced the causal mechanisms in the broader context of psycho-socio-economic determinacy, [6].

#### **MATERIALS AND METHODS:** -

This Cross-sectional, Questionnaire based study was conducted on Rural students and Urban students on October 2018 after obtaining Permission from the corresponding board of the institution. A convenient sampling method

was used to assess the relationship between socioeconomic status and oral hygiene status in 12,15-year school going children which includes questions related to demographic profile, use of oral hygiene aid, frequency and duration of cleaning teeth, changing of tooth brush, rinsing of mouth and the socioeconomic status of the population which was assessed using kuppusamy scale (urban) and UDAI PAREEK scale (rural) based on per capita income per month, education status and occupational status. Oral hygiene health was recorded using simplified oral hygiene index (John C. Greene and Jack R. Vermilion -1964). Students at the age group of 12,15- years present on the day of study and students willing to give inform to concern were included in the study.

The Oral hygiene status is assessed using the Questionnaire which was designed based on the study. The questionnaire consists of two parts. Part 1 consisted of demographic data and part 2 consisted of oral hygiene status.

The questionnaire was distributed among Rural & Urban students after explaining in detail about the study. Each participant had taken 10minutes to fill the questionnaire. The data were collected and entered in Microsoft Excel sheet and subjected to statistical analysis.

#### **RESULT:**

The data were collected and entered into Microsoft excel sheet and was subjected to statistical analysis.

Among 360 students surveyed, 180 students are Urban students and 180 are Rural students respectively. Among a total of 360

students, 147 were male and 213 were female. Among Urban students, 84 were Male and 96 were female. Among Rural students, 63 are Male and 117 are female. The Mean age is 13 years.

**Table 1:**

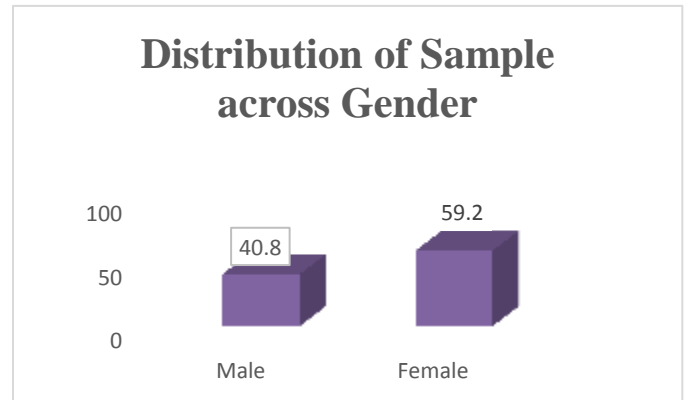
S. No	Age in years	Frequency(n)	Percentage (%)
1	12	180	50%
2	15	180	50%
	Total	360	100

**Gender:**

Male: 147 (40.8%)

Female: 213 (59.2%)

**Fig 1: Bar Diagram representation of sample across Gender**



**Rural/Urban distribution:**

Urban: 180 (50%)

Rural: 180 (50%)

**DISTRIBUTION OF POPULATION ACROSS GENDER**

**Table 2:**

S. No	Urban /rural distribution	Urban		Rural		Total	
		Co unt	%	co unt	%	Co unt	%
1	Male	84	23.3%	63	17.5%	147	40.8%
2	Female	96	26.7%	117	32.5%	213	59.2%
	Total	180	50%	180	50%	360	100%

**Part 1: Urban Population**

**Comparison of oral hygiene practices among Socio Economic Status (urban population):**

For Urban population the Modified Kuppaswamy socio economic scale updated for 2018 has been used. This scale has been arrived by calculating the scores of following factors such as Occupation of head of family, education, Total monthly income. Therefore, we have compared the oral hygiene practices with the socio-economic status of urban population as a whole.

**Table 3:**

S. no	Socio economic status	Do you clean your teeth?					
		Yes		No		Total	
		count	%	count	%	count	%
1		0	0	0	0	0	0
2	Upper	57	31.7%	0	0	57	31.7%
3					0		
4	Upper	86	47.7%	0	0	86	47.7%
5	Middle	36	20%	0	0	36	20%
	Lower Middle	1	0.6%	0	0	1	0.6%
	Upper lower						
	Lower						
	<b>Total</b>	<b>180</b>	<b>100%</b>			<b>180</b>	<b>100%</b>

**Table 4:**

S. no	Socio economic status	If yes using what? -Using tooth brush and tooth paste					
		count	%	Others *	%	count	%
1	Upper	0	0	0	0	0	0
		57	31.7%	0	0	57	31.7%
2	Upper Middle	86	47.7%	0	0	86	47.7%
		36		0	0		
4	Lower Middle	1	20%	0	0	36	20%
			0.6%	0	0	1	0.6%
5	Upper Lower						
	Lower						

	Total	180	100%			180	100%
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Here from this table, it is evident that almost everyone used Tooth brush and paste from Lower to Upper Middle class respectively.

The others \* option used here collectively represents the Using finger and Paste, using finger and brick stone/ charcoal powder, using neem stick and others

**Table 5:**

S o c i o	Soc i o e c o n o m i c s t a t u s	Times of							
		Brushing							
		Once		Twice		Thrice		Total	
		co u n t	%	co u n t	%	co u n t	%	co u n t	%
1	Up per	0	0	0	0	0	0	0	0
		4	24	7.	0	0	31		
2	Up per Mid dle	4	.4	1	22	0	5	7	.7
			%	3	%				%
3	Lo wer Mid dle	6	35	12	0	0	8	6	.7
		3	%	2	.8	0	0	6	%
4	Lo wer Mid dle	3	.2	5	2.	0	3	6	20
		1	%		8				%
5	Up per Lo wer	1	0.	0	0		1	0.	6
			%						%
Total	Lo wer	1	77	4	22	0	0	1	10
		3	.2	1	.8			8	0
		9	%		%			0	%

Here, the Upper Middle class and Lower Middle class reported higher- twice and thrice (times of brushing) when compared to other socio-economic status. Therefore, the oral hygiene practices increase with increase in socio economic status.

**Table 6:**

S. no	Socio economic status	Do you use any dental auxiliary aids?					
		Yes		No		Total	
		count	%	Count	%	Count	%
1	Upper	0	0	0	0	0	0
2	Upper	3	1.75%	54	30%	57	31.7%
3	Upper Middle	0	0%	81	45%	86	47.7%
4	Lower Middle	0	0%	36	20%	36	20%
5	Lower Middle	0	0%	1	0.6%	1	0.6%
	Upper Lower	0	0%	0	0%	0	0%
	Lower	0	0%	0	0%	0	0%
	Total	8	4.44%	172	95.6%	180	100%

From the above table, the percentage of people using dental auxiliary aids is seen in Upper Middle and Lower Middle classes only. Therefore, the awareness regarding the oral hygiene practices increases with increase in socio economic status.

**Table 7:**

S. no	Socio economic status	If yes using auxiliary aids, what?					
		Dental floss		Interdental brush		Total	
		count	%	count	%	Count	%
1	Upper	0	0	0	0	0	0
2		2	1.1	0	0	2	1.1
3		4	%	0	0	4	%
4		0	2.2	0	0	0	2.2
5		0	0	0	0	0	0
	Lower Middle		0		0	2	0
					0		1.1
					0		%
	Upper Lower					172	
							95.6
	Lower						%
		Using dental auxiliary aids but Did not specify either dental floss or Interdental brush					
		Did not use either (No dental auxiliary aids)					
		Grand Total				180	100%

Also, from the above table, it is observed that the Upper Middle and Lower Middle classes use Dental floss than Upper lower and Lower class respectively.

**Table 8:**

S. no	Socio economic status	Do you use Mouth rinse?					
		yes		No		Total	
		count	%	count	%	count	%
1	Upper	0	0	0	0	0	0
2		0	26.1	0	5.6	0	31.7
3		47	%	10	%	57	%
4		65	36.1	21	11.6	86	47.7
5		28	15.6	8	4.4	36	20
	Lower Middle	1	0.6	0	0	1	0.6
	Upper Lower						
	Lower						



		14	78.		21.	18	10
	Tota	1	4	39	6	0	0
	l		%		%		%

From the above table, the usage of mouth rinse is increased with increase in socio economic status. Nearly, Upper Middle and Lower middle classes reported 26% and 36% of usage of mouth rinse significantly.

	Low						7%
	er						
	Lower						
		Did not use mouth rinse					
		Grand Total				180	100%

**Table 9:**

S	oci	If yes using mouth					
		rinse, what?					
		Mouth wash		Water		Total	
o	economic	co	%	co	%	co	%
o	status	un		un		un	
		t		t		t	
1	Upp	0	0	0	0	0	0
2	er	6	3.3	41	22.	0	26.
3	Upp	7	3%	77	%	47	1%
4	er	2	3.8	58	32.	65	36.
5	Mid	0	8%	26	22		1%
	dle		1.1		%		15.
	Low		1%				55
	er		0	1	14.	28	%
	Mid				44		
	dle				%	1	0.5
	Upp					39	5%
	er						21.

Here from the above table, nearly 3% of Upper Middle and 3.8% of Lower Middle class use Mouth wash, 22% of Upper Middle and 32% of Lower Middle uses water as Mouth rinse. In lower class, only 0.5% of people use water as mouth rinse.

**Table 10:**

S	ocio	OHI Score							
		Good		Fair		Poor		Total	
		c	%	c	%	C	%	c	%
o	no	u	nt	o	u	o	u	o	u
mic	mic	nt	nt	nt	nt	nt	nt	nt	nt
stat	stat								
us	us								
1	Up	0	0	0	0	0	0	0	0
2	per	18	0	10	2.	5	31		
3	Up	.8	1	.6	2	7	.7		
4	per	3	9	15	4		%		
5	Mi	4	2	32	1	6	.7		
6	ddl	5	7	.1	2	6	%		
7	e	8	5.	6	5	7	20		
8	Lo	11	6	%	0	3	%		
9	wer	2	1	.7	0	6			
10	Mi	1	0	%	0	1	0.		
11	ddl	1	0	0.	0		6		
12	e	6	0	%			%		
13	Up								
14	per								
15	Lo								
16	wer								
17	Lo								
18	wer								

		1	63	5	31	1	5.	1	10
	Tot	1	.3	6	.2	0	5	8	0
	al	4	%		%		%	0	%

From the above table, the Upper Middle (18%), Lower Middle (32%) and Upper Lower (11%) show Good OHI score when compared to Lower socio-economic status.

### PART -2 (RURAL)

#### **Comparison of oral hygiene practices among Socio Economic Status (Rural population):**

As like the Urban population, the oral hygiene practices of Rural population are compared to the Socio-economic status derived from **Udai pareek scale**. This **Udai pareek scale** of socio-economic status has been arrived by calculating the scores of factors like caste, Occupation, Education, Social participation, Land, Family type, House, Material possession, farm power. Therefore, we compare the oral hygiene practices to the socio-economic status among rural population.

**Table 11:**

S. no	Socio economic status	Do you clean your teeth					
		yes		No		Total	
		count	%	count	%	count	%
1	Upper	0	0	0	0	0	0
2	Upper	31	17.2%	0	0	31	17.2%
3	Middle	13	75%	0	0	13	75%
4	Middle	5	7.8%	0	0	5	7.8%
5	Lower	14	7.8%	0	0	14	7.8%
	Total	180	100%			180	100%

**Table 12:**

S. no	Socio economic status	If yes, using what?											
		Tooth paste and brush		Using finger and paste		Using Finger and brick stone		Using Nemstick		Others		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
1	Upper	0	0	0	0	0	0	0	0	0	0	0	0
2	Upper	0	17.2%	0	0	0	0	0	0	0	0	31	17.2%
3	Middle	3	75%	0	0	0	0	0	0	0	0	13	75%
4	Middle	1	7.5%	0	0	0	0	0	0	0	0	5	7.5%
5	Lower	3	7.8%	0	0	0	0	0	0	0	0	14	7.8%
	Total	14	7.8%									180	100%

e	Lo																		
	wer																		
Total	180	100%																	

From the above table, almost everyone reported usage of Tooth paste and Brush, Middle-17%, Lower middle-75%, Lower 7.8% respectively. None reported the usage of finger and paste, finger and brick stone, neem sticks for tooth brushing.

**Table 13:**

S . n o	Soc io no mic stat us	Times of Brushing							
		once		Twice		Thrice		Total	
		c o u nt	%	c o u nt	%	c o u nt	%	c o u nt	%
1	Up per	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0
2	Up per Mi	2	12	7	3.	2	1.	3	17
		2	20%	2	9%	0	0%	1	20%
3	Mi	1	60	6	14	0	0	3	75

4	ddl e	0	.6	1	.4		0	5	%
		9	%		%			1	7.
5	Mi ddl e	1	7.		0.			4	8
		3	%		%				%
	Lo wer Mi ddl e								
	Lo wer								
Total		144	80%	34	18.9%	2	1.1%	180	100%

From the above table, the Middle SES shows 1.1% of brushing thrice a day, 3.9% of Middle SES reported brushing twice a day. Nearly, 14% of Lower SES reported brushing twice a day. Only 0.6% of Lower SES reported brushing once a day. None of Lower SES reported brushing thrice a day. Therefore, the oral hygiene practice is good with the increase in Socioeconomic status level.

**Table 14:**

S. no	Socio economic status	Do you use any dental auxiliary aids?					
		Yes		No		Total	
		count	%	count	%	Count	%
1	Upper	0	0	0	0	0	0
2	Upper Middle	0	0	0	0	0	0
3	Middle	31	17.7%	31	17.2%	31	17.2%
4	Middle	13	0.6%	2	73.3%	13	75%
5	Lower Middle	13	7.2%	14	7.8%	14	7.8%
	Lower						
	Total	4	2.3%	17	97.7%	18	100%

From the above table, 1.7% of Lower Middle SES, only 0.6% of Lower SES reported using dental auxiliary aids. Though the percentage of using dental auxiliary aids

is low, it can be considered since it is rural population

**Table 15:**

S. no	Socioeconomic status	If yes, using dental auxiliary aids, what?					
		Dental floss		Interdental brush		Total	
		count	%	count	%	count	%
1	Upper	0	0	0	0	0	0
2	Upper Middle	0	0	0	0	0	0
3	Middle	0	0	0	0	1	0
4	Lower Middle	3	1.7%	0	0	17	1.7%
5	Lower	1	0.6%	0	0	6	0.6%
							97.7%

Did not use any dental auxiliary aids

	Grand Total	180	100%
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From the above table, totally 1.7% of lower Middle SES and 0.6% Lower SES reported the usage of dental floss and none reported the usage of Interdental brush. Though the percentage is low, since they are rural population, this is itself a considerable one with the oral hygiene practices.

	Lower						
		99	55%	81	45%	180	100%

**Table 16:**

S. no	Socio economic status	Do you use mouth rinse?					
		Yes		No		Total	
		Co unt	%	co unt	%	co unt	%
1	Upper	0	0	0	0	0	0
2	Upper Middle	0	9.5%	0	7.7%	31	17.2%
3		17		14		13	
4	Middle	76	42.2%	59	32.8%	14	75%
5		6	3.3%	8	4.5%		7.8%
	Lower Middle						

From the above table, nearly 9.5% of Middle SES, 42.2% of Lower Middle SES reported the usage of Mouth rinse. Only 3.3% of Lower SES reported the usage of mouth rinse.

**Table 17:**

S. no	Socio economic status	If yes, using mouth rinse, what?					
		Mouth wash		Water		Total	
		co unt	%	co unt	%	co unt	%
1	Upper	0	0	0	0	0	0
2	Upper Middle	0	0	14	7.8%	16	8.9%
3		2	1.1%	5	40.5%	76	42.2%
4	Midd	3	1.7%			5	2.8%

5	le	0	%		%	2	2.8
	Lower		0			81	1.1
	Middle						45
	Lower						2.8
Using mouth rinse but did not specify							
Did not use mouth rinse							
Grand Total						180	100%

From the above table, nearly 1.1% of Middle SES and 1.7% of Lower

Middle SES reported usage of mouth wash whereas 7.8% of Middle SES, 40.5% of SES reported the usage of water as mouth rinse respectively.

**Table 18:**

S	ocio	OHI							
		Score							
		Good		Fair		Poor		Total	
	economic	count	%	Count	%	Count	%	count	%
1	Upper	0	0	0	0	0	0	0	0
2	Upper	0	7.8%	0	0	0	0	3	17.2%
3	Upper	1	4.36%	1	8.3%	2	15%	1	7.5%
4	Middle	6	33.1%	6	33%	1	5.6%	5	27.8%
5	Middle	7	39%	6	33%	1	6%	1	4%
	Lower				3.3%				
	Lower								

			47		44		7.	1	10
	Tot	8	.8	8	.9	1	3	8	0
	al	6	%	1	%	3	%	0	%

From the above table, totally 36.1% of Lower Middle and 7.8% of Middle SES reported Good OHI score when only 3.9% of Lower SES reported Good OHI score.

**DISCUSSION: -**

Our study has shown significant differences between rural and urban school children with respect to socioeconomic status.

In present study, in comparison of oral hygiene status the rural school students reported poor OHRQoL as compared to urban school students.

This indicates that children at the top of the social ladder enjoy better OHRQoL outcomes as compared to those immediately below them.

Oral diseases disproportionately affect lower segments of society placing an additional disease burden on such groups.

In addition, children who occupy socioeconomically lower positions are more likely to engage in unhealthy oral health behaviors including dietary choices and access to dental care.

**CONCLUSION; -**

Therefore, with the above reports, we can conclude that with the increase in Socioeconomic status the oral hygiene practices increases. Since the standard of

living increases, the knowledge and awareness regarding oral hygiene practices also increases significantly.

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**CONFLITS OF INTEREST: -**

There are no conflicts of interest.

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