

To Evaluate and Measure Oral Health literacy Among Class 3 and Class 4 Employees of Dental College in Nagpur, Maharashtra

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Abstract

Aim: To Evaluate and Measure Oral Health literacy Among Class 3 and Class 4 Employees of Dental College in Nagpur, Maharashtra.

Materials and Methods: A Cross-sectional study was conducted on class 3 and 4 Employees of Dental College. Data collection was done using a pre-validated questionnaire including Personal and demographic details and REALD-30 for calculating Oral Health Literacy. Data was collected and categorized into Low,

Moderate and High OHL. Collected Data was analysed using SPSS 20.

Results: Among all the class III and IV employees included in the study, 72 agreed to participate and REALD-30 results showed that maximum participants (54.2%) were having low OHL scoring 21 or less and only 9.7% had high OHL score of 26 or more.

Conclusion: According to our study the overall Oral Health Literacy of the class 3 and class 4 workers is low. This is very unfortunate because working in a dental educational institute it is expected from all staff to have

good basic oral health knowledge. Dental Institute should plan interventional programs to improve the oral health literacy of these class 3 and class 4 workers. This will create two purposes, one the workers will be more sensitive towards the patients and their knowledge can be used to improve the oral health awareness at the grass root levels as these workers are more reachable to low socioeconomic and vulnerable classes, who are more prone to oral health diseases.

Clinical Significance: The people with low socioeconomic classes can be reached adequately, if the community involvement concept is used through the workers of dental College.

Keywords: Oral Health Literacy, REALD 30, Dental Staff, Socioeconomic Status.

Introduction

According to WHO, Health literacy signifies the cognitive and social skills which determine the motivation and ability of the public to increase their access to, understand and utilize information in ways which promote and maintain good health. Oral Health literacy implies the achievement of a degree of knowledge, personal skills and self-esteem to take right step to improve personal and public health by changing personal habits and living conditions. ¹ Enhancing Oral health literacy has been proven to increase individual and public resilience, help address oral health inequities and strengthen public health and wellbeing. ²

The notion of oral health literacy came from a history of defining, redefining, and quantifying the functional health literacy requirements of the population. With these changes has come the recognition that refined literacy skills are urgently needed to function in society and that low literacy may have an effect on oral and dental health and health care. ³ Effective communication with patients is the cornerstone of quality dental care and

oral health outcomes. Oral health literacy skills are critical to empowering individuals' ability to improve their oral health. ⁴

A significant number of people have a low level of oral health literacy, which possibly interferes with their ability to process and understand oral health information.

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The class 3 and class 4 workers include mostly the health support workers. They are the cleaning staff, the clerical staff, the maintenance staff, nurses, peons and all other staff that assist doctors and dental students to work efficiently. These people usually belong to the lower or lower middle socioeconomic status. They can act as a bridge between the dentist and the community. They are more comfortable and are easily accessible to the low socioeconomic class.

If the class III and IV workers working in a dental college environment are involved, then they can be a good source to guide other such class staff members. So if the potential of these staff members are tapped to increase the patient compliance of grassroot level population, the disease burden can be largely reduced.^{5,9} Internationally, interest in oral health literacy is driven by oral health disparities, particularly for disadvantaged groups, with conditions such as dental caries and periodontal disease contributing substantially to the global burden of disease.¹⁰ Healthcare workers can make a positive impact on improving health outcomes by critically assessing practice and working to enhance communication skills, knowledge, behaviour and accessibility to healthcare. Improving oral health literacy (OHL) will require serious collaborative efforts among these class staff members. ¹¹

Therefore, it is important to measure the level of Oral Health Literacy (OHL) among these workers. Thus, the present study was aimed to evaluate the impact of

Education status on the Oral Health Literacy (OHL) among low-income-group class III and IV workers of Government Dental College, Nagpur Maharashtra.

Materials and Methodology

Study Design

A Cross-sectional study was conducted on class 3 and 4 workers of Government Dental College, Nagpur Maharashtra. Ethical clearance for conducting the study was obtained from the ethical committee at Government Dental College, Nagpur. The present study was carried out during February and March of 2022. The workers of the college were approached. A Verbal Consent was taken from each subject before handing over the questionnaire. Prior to the start of the study, the process and purpose were explained to each subject.

The data collection was done by using a pre-validated questionnaire divided in two parts as follows: part 1—Recording the sociodemographic profiles of the participants, which included gender, education, age, and working class/post. Part 2—OHL was calculated using the REALD-30¹², which consists of 30 words related to dental/oral health arranged in increasing difficulty order. Subjects/Workers were asked to read out loud words in front of the investigator. Subjects were instructed to pass over the word if they are not familiar with it rather than trying to assume the word meaning phonetically, as REALD-30 is a word recognition test. Each word rightly pronounced gets one point.

The overall score ranges from 0 (least literacy) to 30 (maximum literacy). The REALD 30 score was divided into three categories named as high (≥ 26), moderate (22–25), or low (≤ 21). Data was collected and categorized into Low, Moderate and High OHL

Data Analysis

The data collected were entered in Microsoft Excel and were analyzed by using SPSS 20. The OHL Scores were

analysed and associated with Demographic Features of each individual.

Results

Among all the class III and IV workers included in the study, 72 agreed to participate with a response rate of more than 85%.

Most of the participants belonged to the age group of 43–55 years as seen in Figure-1. As shown in figure 2, Among the 72 subjects recruited for the study, the majority were males (51.4%). Majority participants 59.7% of the participants belonged to Class 4 working category while only 40.3% belonged to Class 3. According to Figure-3, Educational status showed that only 40.3% of the subjects studied had completed their Graduation and remaining 59.7% subjects were either 12th or even 10th Pass.

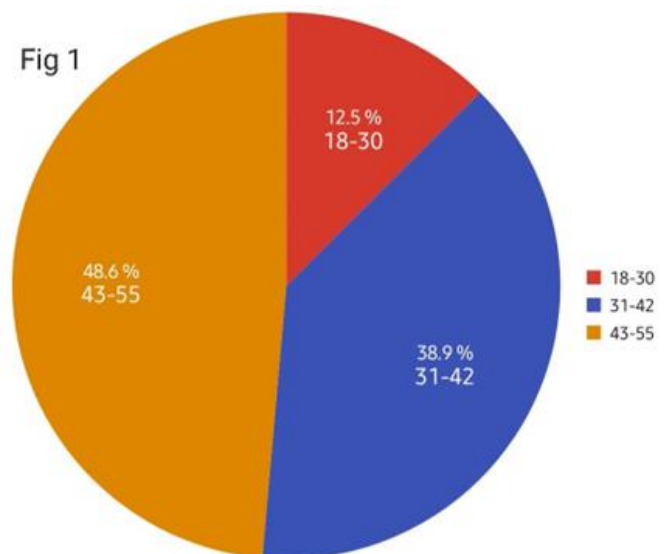


Figure 1: Age Group: 48.6 % subjects belong to 18-30 age group, 38.9% belong to 31-42 and 43-55 belong to the 12.5% age group.

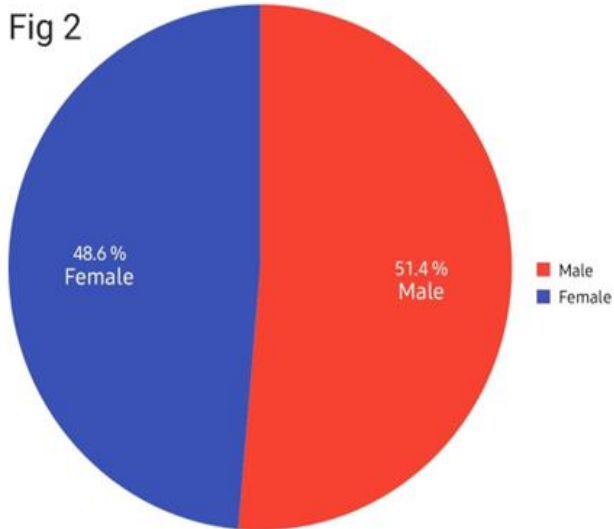


Figure 2: Gender 51.4% of the total study population were Males and 48.6% were females.

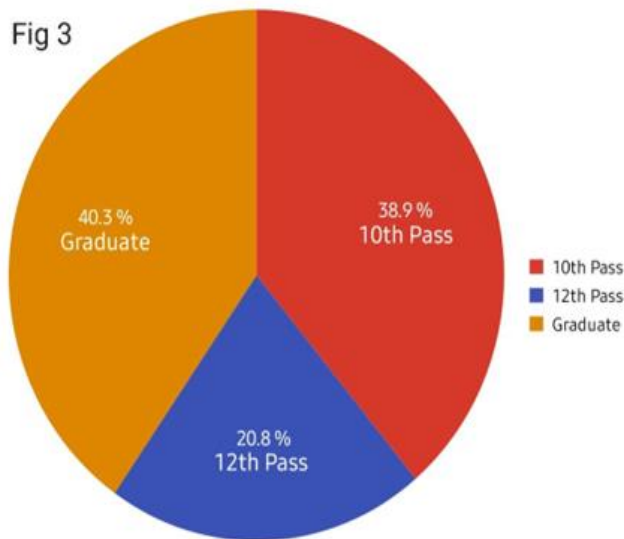


Figure 3: Education 40.3% of the total subjects were 10th pass, 20.8% were 12th pass and 40.3% had graduate level Education.

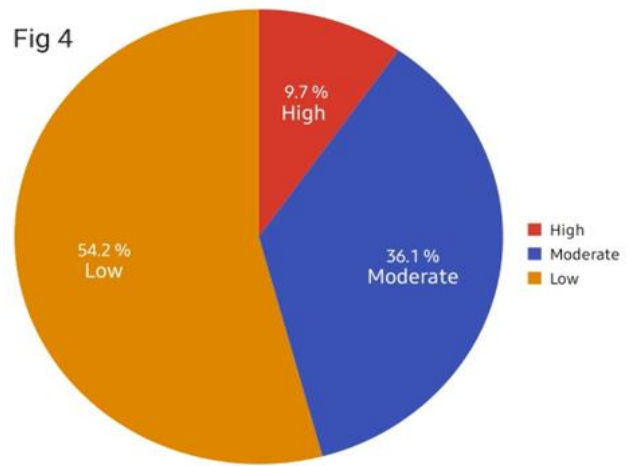


Figure 4: OHL Score 54.2% of the total study population has Low OHL Score, 36.1% had moderate and 9.7% had High OHL Scores.

REALD-30 results given in figure 4 showed that maximum participants (54.2%) were having low OHL scoring 21 or less and only 9.7% had High OHL scoring 26 or more.

As seen in Table-03, Subjects with Graduate level Education (n=29), 17.2% recorded a High OHL (n=5), 62% recorded Moderate OHL (n=18) and 20.7% recorded a Low OHL scoring below 21 (n=6). While the subjects which had the most basic Education with 10th Grade qualification (n=28), recorded 0 High OHL, 3.6% Subjects with Moderate OHL (n=1) and 96.4% with Low OHL (n=27). Table-04 shows that the Subjects belonging to the Class 3 working group (n=29), contributed maximum to High OHL(n=5) and Moderate OHL (n=18). In contrast, the Class 4 working group had the highest number of subjects with Low OHL (n=33) and Lowest Moderate and High OHL with (n=8) and (n=2) respectively.

1. Variable	V	Total (n=72)	Percent	High OHL (n=7)	Moderate OHL (n=26)	LOW OHL (n=39)	P-Value
Gender	Male	37	51.4	04	12	21	0.790
	Female	35	48.6	03	14	18	
Total		72	100	9.7	36.1	54.2	

Table 1: Association of Oral Health Literacy with Gender.

Table-1 shows association between oral health literacy with gender, however no significant difference was found between oral health literacy and gender distribution. Table-2 shows association between age and oral health literacy, it was found that high OHL can be seen only in the age group 42-55 years. Association between age group and OHL is statistically significant. Statistical significance is found between educational

level and OHL (Table-3) majority of graduates had high OHL and low OHL is seen in workers with only lower education. Table-4 shows that the majority of class 3 workers have low OHL, and the majority of class 4 workers have moderate OHL. There is a significant statistical association between the working class and OHL.

Variable		Total (n=72)	Percent	High OHL (n=7)	MODERATE OHL (n=26)	LOW OHL (n=39)	P-Value
Age Group	18-30	09	12.5	00	01	08	0.001
	31-42	28	38.9	00	07	21	
	42-55	35	48.6	07	18	10	
Total		72	100	9.7	36.1	54.2	

Table 2: Association of Oral Health Literacy with Age.

Variable		Total (n=72)	Percent	High OHL (n=7)	MODERATE OHL (n=26)	LOW OHL (n=39)	P-Value
Education	10th Pass	28	38.9	00	01	27	0.001
	12th Pass	15	20.8	02	07	06	
	Graduate	29	40.3	05	18	06	
Total		72	100	9.7	36.1	54.2	

Table 3: Association of Oral Health Literacy with Education.

Variable		Total (n=72)	Percent	High OHL (n=7)	MODERATE OHL (n=26)	LOW OHL (n=39)	P-Value
Class/Post	Class 3	29	40.3	05	18	06	
	Class 4	43	59.7	02	08	33	
Total		72	100	9.7	36.1	54.2	

Table 4: Association of Oral Health Literacy with the Working Class.

Discussion

The notion of Health Literacy goes beyond just reading health information and utilizing healthcare services; it indicates the state of empowerment of an individual to be able to access and use health knowledge to enhance one's own health and for the health of the public.

The health literacy environment of a health care establishment represents the expectations, preferences, and skill of those providing health information and services.¹⁸ In majority, the people belonging to Low Socioeconomic group dental workers show an inability to receive the information in oral health literacy due to

lack of knowledge, poor financial condition, or negligence toward the oral health and hygiene, causing negligible visits to dental professionals unless the condition becomes so bad that it becomes unavoidable.⁵ Educating dental hygienists and dental nurses on effective communication with communities at grassroot level and on teaching them the significance of increasing OHL levels.

In the present study, we found no Correlation between Gender and Oral Health Literacy (Table 1), and this was similar to other studies conducted elsewhere. Table 2 demonstrates the data signifying the role of Age in Oral Health Literacy. Subjects with higher Age were associated with a better OHL Score and their Younger counterparts were found to have a Comparatively lower OHL Score. A Higher Age is associated with a higher level of education and more work experience in the field which results in better knowledge of the field and Higher Health Literacy Score. Other studies have found no major Correlation between Age and OHL.

Results clearly showed that (Table 3 and 4), Class 3 employees with higher education received moderate to high OHL Score, while Class 4 workers with lower Education and literacy skills received Low to Moderate OHL Scores, thus signifying the role of General Education playing a very important role in Effective Oral Health Literacy. Results from the REALD-30 showed that OHL scores were found low in our population (54.2% in low OHL category), which was again similar to other studies.^{5,13} Similar results were obtained in study conducted by Micheala Jones concluding that, a significant number of patients may have a low level of oral health literacy, which possibly interferes with their ability to process and understand oral health information.¹⁶ Similar results were seen with study conducted at Wardha, Maharashtra, which

concluded that oral health literacy was limited, and The awareness regarding the oral health knowledge was good with positive attitude but practices were not enough among the population.¹⁷ Meggan MH Wehmeyer, with her study got the similar results and concluded that, Lower OHL was linked with more severe periodontal disease among the patients.¹⁹

Those with low OHL had the greatest risk for dental diseases and the problems related to those diseases. Health literacy is a known mediator between socio-economic conditions, health behaviour and oral health outcomes in various populations, explaining gradients in oral health status and treatment outcomes.¹⁴ OHL has been proven to be critical in diminishing oral health disparities and in enhancing oral and dental health.¹⁵

Nevertheless, it must be taken into account that all other studies were conducted on patients visiting dental clinics/hospitals for treatment, whereas the present study was conducted on staff of dental college. Our study population despite working in dental college had such low levels of OHL.

Limitations

The results of the present study should be viewed in the light of limitations. As only one dental college was taken in the study, the findings cannot be generalized. It is also important to apprehend the shortcomings of the REALD-30. It does not have the specificity to assess the subjects' knowledge of the Language.

Conclusion

According to our study, the overall Oral Health Literacy of the class 3 and class 4 workers is low. This is very unfortunate because working in a dental educational institute it is expected from all staff to have good basic oral health knowledge. Dental Institute should plan interventional programs to improve the oral health literacy of these class 3 and class 4 employees. This will

create two purposes; one the workers will be more sensitive towards the patients and their knowledge can be used to improve the oral health awareness at the grass root levels as these workers are more reachable to low socioeconomic and vulnerable classes.

Clinical Significance

Current Study will help in planning educational programs for these employees. The people with low socioeconomic classes can be reached adequately, if the community involvement concept is used through the workers of dental College.

References

1. WHO Health Promotion Glossary 1998. WHO /HPR/ HEP/98.1
2. Kick Busch I, Pelikan JM, Apfel F, Tsouros A. Health literacy. WHO Regional Office for Europe; 2013.
3. Berkman ND, Davis TC, McCormack L. Health literacy: what is it? *Journal of health communication.* 2010 Aug 31;15(S2):9-19.
4. Horowitz AM, Kleinman DV. Oral health literacy: the new imperative to better oral health. *Dental Clinics of North America.* 2008 Apr 1;52(2):333-44.
5. Singh P, Singh R, Kumari S, Kumari S, Singh S, Singh JP. Impact of Oral Health Literacy on Periodontal Health among Low-income-group Workers of Dental Institutes in Patna, Bihar, India. *The Journal of Contemporary Dental Practice.* 2020 Jul 1;21(7):788.
6. Ataollahi M. Evaluating the relationship between oral health literacy and oral health status and patients DMFT index referred to city of Shah Babak health center (Doctoral dissertation, Faculty of Dentistry, Kerman University of Medical Sciences, Kerman, Iran).
7. Jones M, Lee JY, Rozier RG. Oral health literacy among adult patients seeking dental care. *The Journal of the American Dental Association.* 2007 Sep 1; 138 (9): 1199-208.

8. Sanzone LA, Lee JY, Divaris K, DeWalt DA, Baker AD, Vann Jr WF. A cross sectional study examining social desirability bias in caregiver reporting of children's oral health behaviours. *BMC Oral Health.* 2013 Dec; 13 (1):1-9.
9. Karnam RR, Kumar NS, Eshwar S, Deolia S. Cognitive ability as a determinant of socioeconomic and oral health status among adolescent college students of Bengaluru, India. *Journal of Clinical and Diagnostic Research: JCDR.* 2016 Dec;10(12): ZC62.
10. World Health Organization: [http://www.who.int/topics/oral_health/en/]
11. Kanupuru KK, Fareed N, Sudhir KM. Relationship between oral health literacy and oral health status among college students. *Oral Health Prev Dent.* 2015 Jan 1;13(4):323-0.
12. Lee JY, Rozier RG, Lee SY, Bender D, Ruiz RE. Development of a word recognition instrument to test health literacy in dentistry: the REALD-30—a brief communication. *Journal of public health dentistry.* 2007 Mar;67(2):94-8.
13. Parker EJ, Jamieson LM. Associations between indigenous Australian oral health literacy and self-reported oral health outcomes. *BMC Oral health.* 2010 Dec;10(1):1-8.
14. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low health literacy and health outcomes: an updated systematic review. *Annals of internal medicine.* 2011 Jul 19;155(2):97-107.
15. Horowitz AM, Kleinman DV. Oral health literacy: a pathway to reducing oral health disparities in Maryland. *Journal of public health dentistry.* 2012 Jan;72: S26-30.
16. Jones M, Lee JY, Rozier RG. Oral health literacy among adult patients seeking dental care. *The Journal of the American Dental Association.* 2007 Sep 1;138(9):1199-208.

17. Nimbalkar GC, Chand Arana A, Sangi L, Patel S, Deolia S, Reche A. Conceptual Measures of Oral Health Literacy and Oral Health Behaviour among Street Hawkers and Fruit Vendors in Wardha, Maharashtra. *Journal of Evolution of Medical and Dental Sciences*. 2020 Mar 9;9(10):716-21.
18. Rudd RE, Anderson JE. The Health Literacy Environment of Hospitals and Health Centers. *Partners for Action: Making Your Healthcare Facility Literacy-Friendly*. National Center for the Study of Adult Learning and Literacy (NCSALL). 2006.
19. Wehmeyer MM, Corwin CL, Guthmiller JM, Lee JY. The impact of oral health literacy on periodontal health status. *Journal of public health dentistry*. 2014 Jan;74(1):80-7.