

# Oral Health Literacy Levels and Dental Anxiety in General Dental Patients

Rohit I Dhole<sup>1</sup>, Payal S Shete<sup>2</sup>, Bhagyoday N Barewad<sup>3</sup>, Atulkumar A Patil<sup>4</sup>

Received on: 01 May 2024; Accepted on: 23 May 2024; Published on: 19 June 2024

## ABSTRACT

**Background:** Critical variables impacting oral health outcomes and patient experiences in dental treatment include dental anxiety and oral health literacy (OHL). The purpose of this research is to examine the correlation between OHL levels and dental anxiety in the general population.

**Materials and methods:** Three hundred people who often visit dentist offices participated in a cross-sectional survey. A validated questionnaire was used to examine OHL levels, and the dental anxiety scale (DAS) was used to quantify dental anxiety. The relationship between OHL levels and dental anxiety was investigated using descriptive statistics and correlation analysis.

**Results:** With a mean age of 35 years (SD = 8.6), 52% of the 300 participants were male. While 27% had very high OHL levels, 63% had intermediate levels. The ratings for dental anxiety varied from 20 to 80, with a mean of 45 and a standard deviation of 12.3. Higher levels of OHL were linked to lower levels of dental anxiety, as shown by a strong negative correlation between the two variables ( $r = -0.32, p < 0.001$ ).

**Conclusion:** Anxiety about the dentist is significantly correlated with OHL levels, according to this research. One way to help people feel more comfortable going to the dentist and have a better experience overall might be to increase their oral health knowledge.

**Keywords:** Correlation analysis, Cross-sectional study, Dental anxiety, General dental patients, Oral health literacy.

*Journal of Dentistry and Bio-Allied Health Sciences* (2024): 10.5005/jdbahs-11017-0006

## INTRODUCTION

One definition of oral health literacy (OHL) is "the ability to access, evaluate, and comprehend basic information about oral health in order to make educated decisions regarding one's own oral health care".<sup>1</sup> By helping people understand and make good use of oral healthcare systems, it is vital in the fight against oral illnesses and for the promotion of oral health.<sup>2</sup>

Dental anxiety, on the other hand, is a common phenomenon characterized by fear, apprehension, or nervousness experienced by individuals in anticipation of dental treatment.<sup>3</sup> It often leads to avoidance of dental care, delayed treatment-seeking behavior, and compromised oral health outcomes.<sup>4</sup>

While OHL and dental anxiety are distinct concepts, they are intricately linked and can influence each other. Limited OHL may contribute to heightened dental anxiety due to uncertainty and lack of understanding about dental procedures and treatment options.<sup>5</sup> Conversely, high levels of dental anxiety may impede individuals' ability to comprehend oral health information, exacerbating their OHL challenges.<sup>6</sup>

Understanding the relationship between OHL levels and dental anxiety is crucial for developing tailored interventions to improve patient experiences and outcomes in dental care settings. Despite the growing recognition of the importance of both OHL and dental anxiety, there remains a paucity of research investigating their association among general dental patients.

To add to the current research on dental anxiety and OHL, this study seeks to investigate the correlation between OHL levels and dental anxiety in the general population.

<sup>1</sup>Department of Prosthodontics, Bharati Vidyapeeth (Deemed to be University) Dental College and Hospital, Sangli, Maharashtra, India

<sup>2</sup>Associate Dentist, Smilekraft Dental Clinic, Sangli, Maharashtra, India

<sup>3</sup>Department of Public Health, Government of Maharashtra, Maharashtra, India

<sup>4</sup>Department of Dentistry, Ashwini Rural Medical College Hospital and Research Center, Kumbhari, Maharashtra, India

**Corresponding Author:** Rohit I Dhole, Department of Prosthodontics, Bharati Vidyapeeth (Deemed to be University) Dental College and Hospital, Sangli, Maharashtra, India, Phone: +91 8805938012, e-mail: drrohitdhole@gmail.com

**How to cite this article:** Dhole RI, Shete PS, Barewad BN, *et al.* Oral Health Literacy Levels and Dental Anxiety in General Dental Patients. *J Dent Bio-Allied Health Sci* 2024;1(1):15–17.

**Source of support:** Nil

**Conflict of interest:** None

## MATERIALS AND METHODS

### Study Design and Participants

Between January 2024 and February 2024, general dental patients who visited a dental clinic were recruited to participate in this cross-sectional research. Three hundred individuals, all of whom were 18 and above, were enrolled using a convenience sample technique. The research did not include those who had problems communicating or had cognitive impairments.

**Table 1:** Demographic characteristics of participants

Demographic	Frequency (n)	Percentage (%)
Gender		
Male	156	52
Female	144	48
Age (years)		
Mean ± SD	35 ± 8.6	
Education level		
High school	102	34
College	126	42
Graduate	72	24

**Table 2:** Distribution of participants by oral health literacy levels

Oral health literacy level	Frequency (n)	Percentage (%)
Low	45	15
Moderate	189	63
High	66	22

**Data Collection**

Data collection occurred through structured face-to-face interviews conducted by trained researchers. Participants provided informed consent before participation. Demographic information including age, gender, and educational level was recorded. Oral health literacy levels were assessed using the validated Oral Health Literacy Instrument (OHLI) questionnaire.<sup>1</sup> The dental anxiety scale (DAS) was utilized to measure dental anxiety levels among participants.<sup>2</sup>

**Statistical Analysis**

To summarize the participants’ demographic data, OHL levels, and dental anxiety ratings, descriptive statistics were produced, including means, standard deviations, frequencies, and percentages. We used Pearson’s correlation coefficient and other correlation analyses to look for a connection between OHL and dental anxiety. We considered  $p < 0.05$  to be statistically significant. We used SPSS version 23 to analyze the data.

**RESULTS**

**Participant Characteristics**

The study included 300 general dental patients, with a mean age of 35 years (SD = 8.6). Table 1 presents the demographic characteristics of the participants.

**Oral Health Literacy Levels**

While 27% of individuals showed high levels of OHL, the majority of participants (63%) had intermediate levels. The participants’ distribution according to their OHL levels is summarized in Table 2.

**Dental Anxiety Scores**

Dental anxiety scores ranged from 20 to 80, with a mean score of 45 (SD = 12.3). Table 3 displays the distribution of participants according to their dental anxiety scores.

**Correlation Analysis**

A significant negative correlation was found between OHL levels and dental anxiety scores ( $r = -0.32, p < 0.001$ ), indicating that higher OHL levels were associated with lower levels of dental anxiety.

These results are summarized in Table 4.

**Table 3:** Distribution of participants by dental anxiety scores

Dental anxiety score range	Frequency (n)	Percentage (%)
20–40	84	28
41–60	150	50
61–80	66	22

**Table 4:** Correlation between oral health literacy levels and dental anxiety scores

Variable	Correlation (r)	p-value
Oral health literacy	-0.32	<0.001
Dental anxiety		

**DISCUSSION**

This research adds to what is already known about the correlation between general dentistry patients’ levels of anxiety and their OHL. A strong inverse relationship between OHL and dental anxiety scores was found in the data, suggesting that those who reported lower levels of dental anxiety also had higher OHL levels.

Previous studies have shown that health literacy affects psychological aspects associated with healthcare encounters.<sup>1</sup> The found link between OHL and dental anxiety is in line with this idea. Dental care is only one of several healthcare settings where people with low health literacy, which includes OHL, are more likely to experience worry, dread, and avoidance behaviors.<sup>2</sup> Individuals with inadequate OHL may struggle to understand oral health information, leading to uncertainty and apprehension about dental procedures, thereby contributing to heightened dental anxiety.

Conversely, higher OHL levels may empower individuals to comprehend dental information, engage in informed decision-making, and effectively cope with dental treatment-related stressors, ultimately reducing dental anxiety.<sup>3</sup> Because of this, it’s critical to address OHL as a possible modifiable component to reduce dental anxiety and improve patients’ dentist visits.

Moreover, the findings underscore the need for tailored interventions aimed at improving OHL among dental patients, particularly those with elevated levels of dental anxiety. Strategies such as patient education programs, simplified communication techniques, and multimedia resources can enhance patients’ comprehension of oral health information and alleviate dental anxiety.<sup>4</sup> Additionally, integrating psychological interventions, such as cognitive-behavioral therapy and relaxation techniques, into dental practice may help manage dental anxiety and improve treatment outcomes.<sup>5</sup>

While this research did provide some useful insights, it is important to note that it did have a few drawbacks. There can be no proof of a cause-and-effect relationship between OHL and dental anxiety since the study was cross-sectional. To further understand the link between these factors over time, longitudinal studies are necessary. Additionally, the results cannot be applied to other demographics since the research only included general dentistry patients from one clinic. Improve the results’ external validity by including more varied patient groups and healthcare settings in future studies.

**CONCLUSION**

In conclusion, this study underscores the importance of OHL in shaping dental anxiety among general dental patients. Addressing

OHL as a modifiable determinant of dental anxiety has implications for improving patient-centered care and oral health outcomes in dental practice.

## REFERENCES

1. Sørensen K, Van den Broucke S, Fullam J, et al. Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health* 2012;12:80. DOI: 10.1186/1471-2458-12-80.
2. Divaris K, Lee JY, Baker AD, et al. Caregivers' oral health literacy and their young children's oral health-related quality-of-life. *Acta Odontol Scand* 2012;70(5):390–397. DOI: 10.3109/00016357.2011.629627.
3. Armfield JM. Development and psychometric evaluation of the index of dental anxiety and fear (IDAF-4C+). *Psychol Assess* 2010;22(2): 279–287. DOI: 10.1037/a0018678.
4. Newton JT, Buck DJ. Anxiety and pain measures in dentistry: A guide to their quality and application. *J Am Dent Assoc* 2000;131(10): 1449–1457. DOI: 10.14219/jada.archive.2000.0056.
5. Lee JY, Divaris K, Baker AD, et al. The relationship of oral health literacy and self-efficacy with oral health status and dental neglect. *Am J Public Health* 2012;102(5):923–929. DOI: 10.2105/AJPH.2011.300291.
6. Pohjola V, Lahti S, Vehkalahti MM, et al. Association between dental fear and dental attendance among adults in Finland. *Acta Odontol Scand* 2007;65(4):224–230. DOI: 10.1080/00016350701373558.