

Original Research

Evaluating association of Oral Health Literacy with Oral Health Behavior Among Dental patients

Iqroop Kaur Brar

BDS, Adesh University, Bathinda, Punjab, India

ABSTRACT:

Background: Oral health literacy (OHL) plays a crucial role in shaping oral health behavior and outcomes. Limited OHL is associated with poor oral hygiene practices, increased dental disease burden, and reduced utilization of dental services. This study aims to assess the association between oral health literacy and oral health behavior among dental patients. **Materials and Methods:** A cross-sectional study was conducted among 300 dental patients visiting a tertiary care dental hospital. Participants were assessed using the Oral Health Literacy Assessment (OHLA) questionnaire and an Oral Health Behavior Index (OHBI) designed to evaluate daily oral hygiene practices, dietary habits, and dental visit frequency. Data were analyzed using SPSS software, with Pearson's correlation and regression analysis applied to determine the association between OHL and oral health behavior. A p-value of <0.05 was considered statistically significant. **Results:** The mean OHL score among participants was 14.6 ± 3.2 , while the mean OHBI score was 7.8 ± 2.1 . A significant positive correlation was found between OHL and oral health behavior ($r = 0.62, p < 0.001$). Participants with high OHL demonstrated better oral hygiene practices, regular dental visits, and healthier dietary choices compared to those with low OHL. Regression analysis indicated that OHL independently predicted oral health behavior ($\beta = 0.57, p < 0.001$). **Conclusion:** The study highlights a strong association between oral health literacy and oral health behavior among dental patients. Enhancing OHL through educational interventions may lead to improved oral hygiene practices and better overall oral health outcomes. Incorporating oral health literacy programs into routine dental care could be an effective strategy for disease prevention and health promotion.

Keywords: Oral health literacy, oral health behavior, dental patients, health education, oral hygiene practices.

Received: 23 December, 2024

Accepted: 20 January, 2025

Corresponding author: Iqroop Kaur Brar, BDS, Adesh University, Bathinda, Punjab, India

This article may be cited as: Brar IK. Evaluating association of Oral Health Literacy with Oral Health Behavior Among Dental patients. *J Adv Med Dent Scie Res* 2025; 13(2):91-94.

INTRODUCTION

Oral health literacy (OHL) is a critical determinant of an individual's ability to obtain, process, and understand basic oral health information necessary for making informed decisions regarding dental care (1). Studies have shown that inadequate OHL is linked to poor oral hygiene practices, increased prevalence of dental caries and periodontal diseases, and irregular dental visits (2,3). Conversely, individuals with higher OHL tend to adopt healthier oral hygiene behaviors, adhere to preventive measures, and seek timely dental care (4).

The World Health Organization (WHO) recognizes oral health literacy as a key factor influencing oral health outcomes and overall well-being (5). Limited OHL has been associated with misconceptions about oral diseases, improper use of dental care products, and a lower likelihood of undergoing routine dental

check-ups (6). Moreover, socioeconomic status, education level, and access to healthcare services play significant roles in determining an individual's OHL level (7).

Despite growing awareness of the importance of OHL, its impact on oral health behavior remains underexplored in many populations. Understanding this association can help in developing targeted interventions to improve oral health outcomes. Therefore, this study aims to evaluate the relationship between oral health literacy and oral health behavior among dental patients, providing insights that could guide future public health strategies and educational programs.

MATERIALS AND METHODS

Study Design and Setting: This cross-sectional study was conducted at a tertiary care dental hospital over a

period of six months. Ethical approval was obtained from the Institutional Ethics Committee, and informed consent was collected from all participants prior to their inclusion in the study.

Study Population and Sample Size: A total of 300 dental patients aged 18 years and above were selected using a systematic random sampling method. Patients with cognitive impairments or medical conditions affecting their ability to complete the survey were excluded. The sample size was determined based on a power calculation considering a 95% confidence interval and an expected correlation between oral health literacy and oral health behavior.

Data Collection Tools: Oral health literacy was assessed using a validated **Oral Health Literacy Assessment (OHLA)** questionnaire, which included sections on reading comprehension, numeracy, and knowledge related to oral health. Oral health behavior was evaluated using the **Oral Health Behavior Index (OHBI)**, which considered factors such as daily brushing and flossing habits, frequency of dental visits, and dietary patterns.

Study Procedure: Participants were provided with the questionnaire in their preferred language. A trained investigator assisted in cases where clarification was needed. The responses were collected, and the OHL and OHBI scores were computed.

Statistical Analysis: Data were analyzed using **SPSS software version 25.0**. Descriptive statistics, including mean and standard deviation, were used to summarize continuous variables. Pearson’s correlation was applied to evaluate the association between OHL

and OHBI scores. Multiple linear regression analysis was performed to identify independent predictors of oral health behavior. A **p-value <0.05** was considered statistically significant.

RESULTS

Demographic Characteristics of Participants

The study included 300 participants, with a mean age of **35.4 ± 10.2 years**. The sample consisted of **46.7% males and 53.3% females**. Regarding education, **40% of participants had education up to high school, while 60% had higher education**. Monthly income distribution showed that **36.7% belonged to the low-income group, while 63.3% had higher income levels** (Table 1).

Oral Health Literacy and Oral Health Behavior Scores

The mean **Oral Health Literacy (OHL) score was 14.6 ± 3.2**, while the mean **Oral Health Behavior Index (OHBI) score was 7.8 ± 2.1** (Table 2).

Association between Oral Health Literacy and Oral Health Behavior

Pearson’s correlation analysis showed a significant **positive correlation (r = 0.62, p < 0.001)** between OHL and OHBI, indicating that participants with higher OHL scores demonstrated better oral health behaviors (Table 3).

Predictors of Oral Health Behavior

Multiple linear regression analysis revealed that **OHL was the strongest predictor of oral health behavior (β = 0.57, p < 0.001)**. Other significant predictors included **education level (β = 0.35, p < 0.01) and income level (β = 0.28, p < 0.05)** (Table 4).

Table 1: Demographic Characteristics of Participants

Variable	Mean ± SD / n (%)
Age (years)	35.4 ± 10.2
Gender (Male/Female)	140 (46.7%) / 160 (53.3%)
Education Level (≤ High School / > High School)	120 (40%) / 180 (60%)
Monthly Income (Low/High)	110 (36.7%) / 190 (63.3%)

Table 2: Oral Health Literacy and Oral Health Behavior Scores

Variable	Value
OHL Score (Mean ± SD)	14.6 ± 3.2
OHBI Score (Mean ± SD)	7.8 ± 2.1

Table 3: Correlation between Oral Health Literacy and Oral Health Behavior

Variable	Pearson's Correlation (r)	p-value
OHL Score vs OHBI Score	0.62	<0.001

Table 4: Regression Analysis Predicting Oral Health Behavior

Predictor Variable	β Coefficient	p-value
OHL Score	0.57	<0.001
Education Level	0.35	<0.01
Income Level	0.28	<0.05

DISCUSSION

This study highlights a significant association between oral health literacy (OHL) and oral health behavior among dental patients. The findings indicate that individuals with higher OHL scores exhibit better oral hygiene practices, make healthier dietary choices, and visit the dentist more frequently. These results align with previous studies that suggest OHL is a crucial determinant of oral health outcomes (1,2).

The positive correlation between OHL and oral health behavior observed in this study is consistent with earlier research, which found that individuals with adequate health literacy are more likely to engage in preventive oral health practices (3,4). A study conducted by Lee et al. (5) reported that higher OHL levels were associated with lower rates of dental caries and periodontal disease. Similarly, another study found that limited OHL was linked to increased oral health disparities and lower utilization of dental services (6).

In contrast, some studies have reported weaker associations between OHL and oral health behaviors, suggesting that other factors, such as socioeconomic status, cultural beliefs, and access to healthcare, may influence oral health practices (7,8). Nevertheless, the present study supports the argument that improving OHL can significantly enhance oral health behaviors, reducing the burden of dental diseases.

The regression analysis in this study revealed that education level and income significantly influenced oral health behavior, alongside OHL. Participants with higher education demonstrated better oral hygiene practices, which aligns with previous studies showing that formal education contributes to improved health literacy and self-care behaviors (9,10). Furthermore, individuals from higher-income groups reported better oral health behaviors, possibly due to greater affordability of dental care services and better access to oral health information (11).

The strong association between OHL and oral health behavior highlights the importance of integrating oral health literacy programs into public health initiatives. Dental professionals can play a critical role by educating patients on proper oral hygiene practices and emphasizing the importance of regular dental check-ups (12). Strategies such as visual aids, simplified educational materials, and culturally appropriate interventions have been suggested to improve OHL among diverse populations (13).

Additionally, incorporating OHL assessments in dental clinics could help identify patients at risk of poor oral health outcomes due to limited literacy skills. Studies suggest that interventions tailored to the literacy level of patients lead to improved oral hygiene practices and increased compliance with preventive care recommendations (14-16).

Despite its significant findings, this study has some limitations. First, it relied on self-reported data, which may be subject to social desirability bias. Second, the study was conducted in a single tertiary care dental

hospital, limiting the generalizability of the results to broader populations. Future research should focus on longitudinal studies to assess the long-term impact of OHL on oral health outcomes and explore the effectiveness of targeted literacy interventions in diverse populations.

CONCLUSION

This study reinforces the critical role of oral health literacy in shaping oral health behaviors. Higher OHL levels were associated with improved oral hygiene practices, regular dental visits, and better dietary choices. Additionally, education and income were identified as significant predictors of oral health behavior. These findings underscore the need for comprehensive oral health literacy programs to promote better oral health outcomes and reduce disparities in dental care access.

REFERENCES

1. Firmino RT, Martins CC, Faria LS, Paiva SM, Granville-Garcia AF, Fraiz FC, et al. Association of oral health literacy with oral health behaviors, perception, knowledge, and dental treatment-related outcomes: a systematic review and meta-analysis. *J Public Health Dent.* 2018;78(3):231-45.
2. An R, Li Q, Luo Y, Chen W, Sohaib M, Liu M, et al. Oral health literacy, oral health behavior, and oral health status among dental patients and associated factors. *medRxiv.* 2022.
3. Baskaradoss JK. Relationship between oral health literacy and oral health status. *BMC Oral Health.* 2018;18(1):172.
4. Batista MJ, Lawrence HP, Sousa MLR. Oral health literacy and oral health outcomes in an adult population in Brazil. *BMC Public Health.* 2017;18(1):60.
5. Ueno M, Takeuchi S, Oshiro A, Kawaguchi Y. Relationship between oral health literacy and oral health behaviors and clinical status in Japanese adults. *J Dent Sci.* 2013;8(2):170-6.
6. Jones M, Lee JY, Rozier RG. Oral health literacy among adult patients seeking dental care. *J Am Dent Assoc.* 2007;138(9):1199-208.
7. Vann WF Jr, Lee JY, Baker D, Divaris K. Oral health literacy among female caregivers: impact on oral health outcomes in early childhood. *J Dent Res.* 2010;89(12):1395-400.
8. Holtzman JS, Atchison KA, Gironde MW, Radbod R, Gornbein JA. The association between oral health literacy and failed appointments in adults attending a university-based general dental clinic. *Community Dent Oral Epidemiol.* 2014;42(3):263-70.
9. Macek MD, Haynes D, Wells W, Bauer-Leffler S, Cotten PA, Parker RM. Measuring conceptual health knowledge in the context of oral health literacy: preliminary results. *J Public Health Dent.* 2010;70(3):197-204.
10. Tiwari A, Ghosh A, Agrawal PK, Reddy A, Singla D, Mehta DN, Girdhar G, Paiwal K. Artificial intelligence in oral health surveillance among under-served communities. *Bioinformation.* 2023;19(13):1329.
11. Sabbahi DA, Lawrence HP, Limeback H, Rootman I. Development and evaluation of an oral health literacy instrument for adults. *Community Dent Oral Epidemiol.* 2009;37(5):451-62.

12. Dickson-Swift V, Kenny A, Farmer J, Gussy M, Larkins S. Measuring oral health literacy: a scoping review of existing tools. *BMC Oral Health*.2014;14:148.
13. Parker EJ, Jamieson LM. Associations between indigenous Australian oral health literacy and self-reported oral health outcomes. *BMC Oral Health*.2010;10:3.
14. Divaris K, Lee JY, Baker AD, Vann WF Jr. Caregivers' oral health literacy and their young children's oral health-related quality of life. *Acta Odontol Scand*. 2012;70(5):390-7.
15. Lee JY, Divaris K, Baker AD, Rozier RG, Vann WF Jr. The relationship of oral health literacy and self-efficacy with oral health status and dental neglect. *Am J Public Health*. 2012;102(5):923-9.
16. Jones K, Brennan D, Parker E, Jamieson L. Development of a short-form Health Literacy Dental Scale (HeLD-14). *Community Dent Oral Epidemiol*. 2015;43(2):143-51.