Journal of Oral Hygiene & Health
ISSN: 2332-0702
Moin, J Oral Hyg Health 2022, 10:12
Research Article
Open Access

Comparison of Oral Health Literacy Status among Patients Attending Dental & Medical OPD of Public Sector Hospitals Karachi

Maria Moin*

Senior Lecturer at Bahria University Karachi Campus, Pakistan

Abstract

Objective: The objective was to compare the status of oral health literacy among dental and medical patients seeking care at Karachi Public Hospital.

Methods: It was a comparative study; data were collected from 200 patients of age group 20–70 years attending the Dental and Medical OPD at Dow University of Oral Health Sciences, Karachi. A valid Oral Health Literacy Instrument (OHL-I) was used to assess their oral health literacy status. Oral health literacy was compared by using paired t-test and chi-square was applied to categorical variables for an association between independent and dependent variables.

Result: A total of 200 patients with a mean age group of 32.8 ± 12.9 years participated 59% women and 49% men were included. Statistical analysis was executed by using an independent-samples t-test to contrast oral health literacy status among medical and dental patients. The relationship between oral health literacy questions (dependent), and medical-dental patients (independent variables) was analyzed using a chi-square test of independence.

Conclusion: In this study, oral health literacy was significantly higher in dental patients as compared to medical patients. In turn, outcomes related to oral health literacy were indicators of poor self-reported oral health.

Keywords: Oral health literacy; Oral health; Adults; Medical OPD

Introduction

The concept of health literacy has gained considerable research interest in the past decade and is now of particular importance in addressing chronic conditions and lifestyle diseases [1, 2]. Oral diseases are highly preventable but remain prevalent in many countries around the world [3]. The definition of health literacy proposed by Ratzan and Parker was later adopted to be used within the context of oral health [4]. Oral health knowledge is defined as "the extent up to which an individual can perceive fundamental oral health instructions and treatment options required to make relevant health decisions" [5]. Oral health literacy is a complex concept and its useful part can be explained as a set of personal skills and abilities that enable the acquisition of oral health-related knowledge and decision-making. For this reason, high oral health literacy is necessary to improve people's awareness regarding oral diseases, awareness about methods of oral disease prevention and conservation of health, and ultimately lead people to desirable attitudes and behaviours.

While previous findings have shown that low oral health literacy was widespread and could explain some of the differences in oral health, several studies have demonstrated that poor oral health literacy contributes to poor oral health status [6-10]. People with lower oral health literacy are more likely to ignore preventive measures and emergency treatments [10, 11]. Oral health literacy of parents or caregivers has an impact on children's oral health. [12-14]

Many oral health literacy studies have been conducted in North America and several Asian countries [8-10, 12, 15-17]. The WHO of European Office reported in 2013 that almost half of Europeans have "inadequate or problematic health literacy skills", but with wide variations between countries [11, 18-20]. These data suggest that the level of oral health literacy may not be high in Europe; however, there is no existence of systematic research data on oral health literacy [21]. Insufficient information on oral health literacy calls for further research to be conducted in these countries [22].

There are two main strategies for assessing oral health literacy: word recognition and reading comprehension. Word recognition instruments (REALD-30, REALD-99, REALM-D, TS-REALD, HKREALD-30) were developed first, with the prime aim of the respondent's ability to correctly pronounce vocabularies related to oral health (7, 20, 23, 24). Reading comprehension tests such as tofhlid, OHLI, OHL-AQ, and HKOHLAT-P were created to assess functional literacy and therefore measure a person's ability to comprehend and apply written information, including numerical data [17, 20, 25, 26]. Macek's Comprehensive Test of Oral Health Knowledge (CMOHK) was intended to evaluate the level of oral health literacy by measuring conceptual knowledge about oral health [27].

Oral health plays a vital role in sustaining overall health. In addition, the oral cavity executes enormous functions related to daily routine life, such as food intake, verbal communication, public contact, and appearance. Oral health can affect the quality of an individual's life and their physical, psychological, and social well-being [28]. Comparisons between oral health literacy among dental and medical patients have rarely been investigated [29, 30]. In this study, our target approach is to evaluate the oral health literacy status of patients aiming at the age group of 20-70 years attending dental and medical OPDs in the public sector.

***Corresponding author:** Maria Moin, Senior Lecturer at Bahria University Karachi Campus, Pakistan, Tel: +92 3472278597; E-mail: mariamoin.bumdc@bahria.edu.pk

Received: 25-Nov-2022, Manuscript No: JOHH-22-81202, **Editor assigned:** 28-Nov-2022, PreQC No: JOHH-22-81202(PQ), **Reviewed:** 12-Dec-2022, QC No: JOHH-22-81202, **Revised:** 16-Dec-2022, Manuscript No: JOHH-22-81202(R), **Published:** 23-Dec-2022, DOI: 10.4172/2332-0702.1000350

Citation: Moin M (2022) Comparison of Oral Health Literacy Status among Patients Attending Dental & Medical OPD of Public Sector Hospitals Karachi. J Oral Hyg Health 10: 350.

Methods

A comparative study was conducted using a consecutive sampling technique among 200 adult patients seeking medical and dental care. Data were collected from patients attending the Dental and Medical OPD of Dow University of Health Sciences in March 2015. Adult patients seeking health care without physical or mental disabilities aged between 20-70 years participated. Written informed consent was attained from each participant; permission to conduct the study was taken by the head of the hospital.

Data was gathered through Performa, which comprises demographic information and a valid oral health literacy instrument (OHL-I) [31]. One examiner collected demographic and oral health literacy information, and this process endures approximately 10 minutes. 200 patients participated in the study with a response rate of 99.4%.

The study inquired about the patient's gender, age, level of education, marital status, place of residence, and monthly income. The Oral Health Literacy Tool was translated into Urdu for a better understanding of patients. The oral health knowledge test used in the study included 10 statements related to dental caries, periodontal disease, oral cancer, and oral hygiene (Table 1). Oral health behavior was recorded as regularity of dental visits categorized as yes, don't remember, and never. Subjects were asked to rate each statement as true or false; correct answers were scored 1 and incorrect or don't know answers were scored 0. The total oral health knowledge score varies from 0 to 10 (the sum of scores for each item). The 10 statements that were recorded on Performa were entered into SPSS version 16. Oral health literacy was compared using an independent t-test, and chi-square was applied to categorical variables for the association between knowledge of a specific question among patients.

Result

A total of 200 patients with a mean age of 32.8 ± 12.9 years, 59% women and 49% men were included. In terms of education, (35.5%) of the respondents graduated from elementary school, (20.5%) completed high school and professional graduation. (11.5%) ended middle school and only (5%) were postgraduate. Participants with a monthly income of less than PKR 10,000 were (17%), more than half of the participants have 10,000 monthly incomes (56.5%) and more than 10,000 were (26.5%) as shown in Table 2.

Table 1: Oral health knowledge test.

1	Dental decay is caused by bacteria in the oral cavity.	TRUE	FALSE	Don't know
2	Sweet foods and drinks have positive effect on the teeth.	TRUE	FALSE	Don't know
3	The use of fluoride makes teeth stronger.	TRUE	FALSE	Don't know
4	Sealants are dark spots on the teeth.	TRUE	FALSE	Don't know
5	Dental plaque causes periodontal diseases.	TRUE	FALSE	Don't know
6	There is no relationship between periodontal diseases and diabetes.	TRUE	FALSE	Don't know
7	It is necessary to use a dental floss every day to clean between the teeth.	TRUE	FALSE	Don't know
8	The teeth should be brushed at least twice a day.	TRUE	FALSE	Don't know
9	Cancer cannot appear in the oral cavity.	TRUE	FALSE	Don't know
10	Visiting a dentist once a year helps to preserve oral health.	TRUE	FALSE	Don't know

An independent samples t-test was used to compare oral health literacy among dental and medical patients. There was a significant difference in oral health literacy scores for dental (M= 6.20, SD= 1.56) and medical (M= 5.43, SD=1.84) patients; t (198) = 3.18, p = .02 (Table 2). These results suggest that oral health literacy differs between dental and medical patients. Specifically, the results indicate that dental patients when attending dental OPD their status of oral health literacy increases. A chi-square test of independence was performed to examine the relationship between oral health literacy questions (dependent) and dental patients (independent variables). The relationship between oral health literacy questions 1, 2, 3, 7, 9, 10, and 11 was significant, X2 values, p <.01. Medical and dental patients were more likely to be knowledgeable about these issues compared to others with a p-value > significance level as shown in Table 3.

Table 2: Demographic characteristics of participants.

Variable	Percentage (%)
Gender	
Male	41
Female	59
Marital Status	
Married	67
Unmarried	33
Education level	
Uneducated	7
Primary	35.5
Matric	20.5
Intermediate	11.5
Graduate	20.5
Postgraduate	5
Monthly family income	
10,000	56.5
<10,000	17
>10,000	26.5

Table 3: p-value Vs significance level.

Dependent Variable	Independent Variable	Response Option	Chi-square
1. Dental decay is caused by the bacteria in the oral cavity.			0.001*
2. Sweet food and drinks have positive effects on the teeth.			0.005*
3. The use of fluoride makes teeth stronger.			0.000*
4. Sealants are the dark spots on the teeth.			0.233
5. Dental plaque causes periodontal disease.			0.008
6. There is no relationship between periodontal disease and diabetes.			0.073
7. It is necessary to use dental floss every day to clean between the teeth.			0.000*
8. The teeth should be brushed at least twice a day.	Medical & Dental	TRUE	0.075
9. Cancer cannot appear in the oral cavity.		False	0.028*
10. Visiting a dentist once a year helps to preserve oral health.		Don't know	0.030*
11. Dental visit.		No	0.000*
		Never	
		Don't remember	

Discussion

A considerable number of oral health literacy instruments have been developed and all of these assess different aspects of oral health literacy or use different items [7, 17, 19, 20, 23, 32, 33]. Therefore, it is not easy to compare the results of formerly conducted studies. Furthermore, there is no consensus on what level of oral health literacy is 'low' or 'high'; even the REALD-30, the most commonly used test of oral health literacy, has no predetermined cut-offs [32]. Health literacy is a diverse contextual literacy sphere of influence affected by general literacy expertise; it also combines the characteristic set of proficiency required for successful performance in the healthcare setting [34, 25]. Our finding that health literacy intervenes in several disparities in the use of preventive health care among dental and medical patients provided significant facts for developing an understanding of the role of health literacy. Racial/ethnic disparities in health care utilization often exceed those related to educational attainment but are commonly independent [23]. The study defines the pathway between poor oral health literacy and its outcomes. This pathway is instinctive and supported by the general health literature and is defined as problem-oriented use of dental services, inadequate oral health knowledge, and suboptimal self-oral care behaviours. For example, low health literacy was associated with more hospital emergency visits and mediocre comprehension of a chronic condition and its causes [23]. Our findings include evidence for the proposition that literacy is one key way through which individuals can process and act on information to improve their health outcomes and healthcare behaviours [24]. In addition, the impact of socio-demographic factors on oral health may directly or indirectly interfere with oral health behaviours [35, 36].

Literacy was associated with dental health knowledge and this detection was consistent with studies of literacy and health knowledge showing a relationship [16].

Oral health literacy was compared by assessing oral health literacy scores between dental and medical patients of different genders, education levels, and frequency of dental visits. Higher oral health literacy among dental patients in this study may be due to factors such as health information-seeking behavior, higher exposure to health-related information, and frequent use of health facilities with young children. Similar to previous studies, we found participants with higher education, but oral health literacy scores were different and the effect of education on oral health literacy level remained notable [7, 9, 14, 15-17, 32]. Constancy in dental visits was a significant factor in oral health literacy as reported by other research [11, 17, and 32]. However, its effect disappeared when socio-demographic factors were included, so socio-demographic factors may play a role in the relationship between oral health literacy and dental visit pattern.

Along with these research implications, our results have implications for both clinicians and medical educators. Most importantly, providers should recognize that low levels of literacy are associated with several adverse health conditions. Although we did not directly interrogate this issue, low level of literacy is common and, if unrecognized, represents a barrier to effective care. They should scrutinize for understanding, use literacy-independent teaching methods, and reinforce learning over time. Our data do not answer the question of whether providers should routinely assess literacy, but it may help to target effective interventions.

Certain limitations must be acknowledged, the information was collected from a sample of patients aged 20-70 years visiting a university dental hospital. Therefore, they are likely to have higher oral health literacy than the general population. The sample was convenience, which means that the findings cannot be considered representative of all local residents. The number of people who refused to participate was not recorded due to the convenience of recruitment strategies. Future research using a general population sample will be necessary to examine the relationship between oral health literacy among dental and medical patients. Comparative studies (such as this one) usually have a lower level of evidence than randomized controlled trials. Ethnic differences in oral health may be related to other factors such as cultural attitudes toward oral health and dental care, perceived discrimination, and institutional barriers. [37] In addition, the assessment of patients' perception of oral health through a single-item questionnaire should be considered another drawback of the study.

Oral health-related literacy has been proposed as another major component of health literacy (although we are not aware of any studies analysing this skill). Oral communication is crucial for interacting with the health care delivery system; however, it is not entirely independent of print literacy [21, 22]. There are notable differences between written and spoken health texts. Further studies are recommended to ascertain whether the ability to verbally communicate with health practitioners has the same association with health outcomes and health disparities as the ability to comprehend written health-related text. Our study also does not directly assess how low health literacy may lead to discrepancies in health status and preventive deployment of health care. There is a wide range of possible mechanisms that may differ depending on the particular health outcome and are crucial because of their implications for interventions. Since current poor health indicates chronic disease, its association with health literacy is considered to be a consequence of the negative effects of low health literacy over the life course. Research on disparities in the utilization of preventive care services should also consider the psychosocial aspects of low health literacy in adults [26, 27].

Literacy and health research have come a long way in the past two decades; regardless of the important work ahead. One of the structured reviews confirms that low literacy is correlated with several adverse health outcomes [38]. Possible future studies are suggested to address the nature of the relationship between literacy and health; specifically, those that may identify factors that mediates the relationship and may serve as targets for future intervention research.

Conclusion

In this study, oral health literacy was significantly higher in dental patients in contrast to medical patients. In turn, outcomes related to oral health literacy were risk indicators of poor self-reported oral health. Additional research is requisite for better awareness of causal pathways and to regulate pertinent intervention strategies to advance oral health outcomes.

References

1. Baker DW (2006) The meaning and the measure of health literacy. J Gen Intern Med 21: 878–883.
2. Nutbeam D (2008) The evolving concept of health literacy. Soc Sci Med 67: 2072–2078.
3. Petersen PE (2003) The World Oral Health Report 2003: continuous improvement of oral health in the 21st century–the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol 31: 3–23.
4. Ratzan S, Parker R (2000) Introduction: In National Library of Medicine Current Bibliographies in Medicine: Health Literacy. Edited by Selden C, Zorn M, Ratzan S, Parker R. Bethesda, MD: National Institutes of Health, U.S. Department of Health and Human Services.
5. Office of Disease Prevention and Health Promotion (2000) US Department of

Health and Human Services: Healthy People 2010. Oral Health 2nd edition Washington, DC: US Government Printing Office.

6. National Institute of Dental and Craniofacial Research, NIOH, U.S. Public Health Service, Department of Health and Human Services (2005) The invisible barrier: literacy and its relationship with oral health. A report of a workgroup sponsored by the National Institute of Dental and Craniofacial Research, National Institute of Health, U.S. Public Health Service, Department of Health and Human Services. J Public Health Dent 65: 174–182.
7. Atchison KA, Gironda MW, Messadi D, Der-Martirosian C (2010) Screening for oral health literacy in an urban dental clinic. J Public Health Dent 70: 269–275.
8. Jones M, Lee JY, Rozier RG (2007) Oral health literacy among adult patients seeking dental care. J Am Dent Assoc 138: 1199–1208, quiz 1266-1197.
9. Lee JY, Divaris K, Baker AD, Rozier RG, Lee SY, et al. (2011) Oral health literacy levels among a low-income WIC population. J Public Health Dent 71: 152–160.
10. Lee JY, Divaris K, Baker AD, Rozier RG, Vann WF (2012) The relationship of oral health literacy and self-efficacy with oral health status and dental neglect. Am J Public Health 102: 923–929.
11. Ueno M, Takeuchi S, Oshiro A, Kawaguchi Y (2013) Relationship between oral health literacy and oral health behaviors and clinical status in Japanese adults. J Dental sci 8: 170–176.
12. Horowitz AM, Kleinman DV (2012) Oral health literacy: a pathway to reducing oral health disparities in Maryland. J Public Health Dent 72(Suppl 1): S26–S30.
13. Vann WF, Lee JY, Baker D, Divaris K (2010) Oral health literacy among female caregivers: impact on oral health outcomes in early childhood. J Dent Res 89: 1395–1400.
14. Divaris K, Lee JY, Baker AD, Vann WF (2012) Caregivers' oral health literacy and their young children's oral health-related quality-of-life. Acta Odontol Scand 70: 390–397.
15. Vann WF, Lee JY, Baker D, Divaris K (2010) Oral health literacy among female caregivers: impact on oral health outcomes in early childhood. J Dent Res 89: 1395–1400.
16. Sabbahi DA, Lawrence HP, Limeback H, Rootman I (2009) Development and evaluation of an oral health literacy instrument for adults. Community Dent Oral Epidemiol 37: 451–462.
17. Sistani MM, Yazdani R, Virtanen J, Pakdaman A, Murtomaa H (2013) Oral health literacy and information sources among adults in Tehran. Iran Community Dent Health 30: 178–182.
18. Wong HM, Bridges SM, Yiu CK, McGrath CP, Au TK, et al. (2013) Validation of the Hong Kong Oral Health Literacy Assessment Task for paediatric dentistry (HKOHLAT-P). Int J Paediatr Dent 23: 366–375.
19. Wong HM, Bridges SM, Yiu CK, McGrath CP, Au TK, Parthasarathy DS (2012) Development and validation of Hong Kong Rapid Estimate of Adult Literacy in Dentistry. J Invest Clin Dent 3: 118–127.
20. Kickbusch I, Pelikan JM, Apfel F, Tsouros AD (2013) Health literacy: The solid facts. Copenhagen: WHO Regional Office for Europe.
21. Kondilis BK, Kiriaze IJ, Athanasoulia AP, Falagas ME (2008) Mapping health literacy research in the European Union: a bibliometric analysis. PLoS One 3: e2519.
22. Lee JY, Rozier RG, Lee SY, Bender D, Ruiz RE (2007) Development of a word recognition instrument to test health literacy in dentistry: the REALD-30–a brief communication. J Public Health Dent 67: 94–98.
23. Gong DA, Lee JY, Rozier RG, Pahel BT, Richman JA, et al. (2007) Development and testing of the Test of Functional Health Literacy in Dentistry (TOFHLiD). J Public Health Dent 67: 105–112.
24. Sistani MMN, Montazeri A, Yazdani R, Murtomaa H (2014) New oral health literacy instrument for public health: development and pilot testing. J Invest Clin Dent 5: 313–321.
25. Bennett I, Switzer J, Aguirre AC, Evans K, Barg F (2006) "Breaking it down": patient-provider communication and prenatal care utilization among African American women with low and higher literacy. Ann Fam Med 4: 334–340.
26. Scott TL, Gazmararian JA, Williams MV, Baker DW (2002) Health literacy and preventive health care use among Medicare enrollees in a managed care organization. Med Care 40: 395-404.
27. Stucky BD, Lee JY, Lee SY, Rozier RG (2011) Development of the two-stage rapid estimate of adult literacy in dentistry. Community Dent Oral Epidemiol 39: 474–480.
28. Macek MD, Haynes D, Wells W, Bauer-Leffler S, Cotten PA, et al. (2010) Measuring conceptual health knowledge in the context of oral health literacy: preliminary results. J Public Health Dent 70: 197–204.
29. Richman JA, Lee JY, Rozier RG, Gong DA, Pahel BT, et al. (2007) Evaluation of a word recognition instrument to test health literacy in dentistry: the REALD-99. J Public Health Dent, 67: 99–104.
30. Jurgensen N, Petersen PE (2009) Oral health and the impact of socio-behavioural factors in a cross sectional survey of 12-year old school children in Laos. BMC Oral Health 9: 29.
31. Parker EJ, Jamieson LM (2010) Associations between indigenous Australian oral health literacy and self-reported oral health outcomes. BMC Oral Health 10: 3.
32. Nielson-Bohlman L, Panzer A, Kindig D (2004) Health Literacy: A Prescription to End Confusion. Washington, DC: Institute of Medicine.
33. Blizniuk B, Ueno M, Furukawa S, KawaguchiY (2014) Evaluation of a Russian version of the oral health literacy instrument (OHLI). BMC Oral Health 14: 141.
34. Geiger H (2003) Racial and ethnic disparities in diagnosis and treatment: a review of the evidence and a consideration of the causes. In: Smedley BD, Stith AY, Nelson AR, eds. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington, DC: The National Academies Press.
35. Dewalt DA, Berkman ND, Sheridan S, Lohr KN, Pignone MP (2014) Literacy and health outcomes: A systematic review of the literature. J Gen Intern Med 19: 1228–1239.
36. World Health Organization (1997) Oral health surveys: basic methods. 4th ed. Geneva, Switzerland: World Health Organization.
37. Mashoto KO, Astrom AN, Skeie MS, Masalu JR (2010) Socio-demographic disparity in oral health among the poor: a cross sectional study of early adolescents in Kilwa district, Tanzania. BMC Oral Health 10: 7.
38. Locker D (2009) Self-esteem and socioeconomic disparities in self-perceived oral health. J Public Health Dent 69: 1-8.