

Original Research Article

COMPARISON BETWEEN VARIOUS SOCIOECONOMIC GROUPS AMONGST RURAL JAIPUR POPULATION UTILIZING ORAL HEALTH LITERACY ASSESSMENT SCALES.

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ABSTRACT

Background: Oral health literacy serves as a crucial factor that influences oral health results for rural communities which endure different levels of healthcare accessibility and price affordability. This research evaluated the oral health literacy status of different socioeconomic levels from rural Jaipur by employing validated measurement tools HeLD and OHIP-14 to measure OHRQoL outcomes.

Materials and Methods: A cross-sectional research study took place in rural Jaipur District, Rajasthan by studying four villages which were randomly chosen under Amer block. The research selected 240 participants through a multistage sampling method. Subject participants underwent testing with the 29-item HeLD scale to assess their oral health literacy and later received OHIP-14 assessment to measure their OHRQoL. Face-to-face interviews generated the research data that researchers processed using SPSS 20.0 for analysis. The research used HeLD and OHIP-14 scores to determine differences across socioeconomic classifications through independent samples t-tests and one-way ANOVA statistical methods and descriptive statistics analysis techniques. Researchers utilized Pearson's coefficient to understand the relationship that exists between oral health literacy and quality of life.

Results: The upper middle class participants achieved the highest mean HeLD score of 82.53 ± 13.88 whereas middle class participants scored 70.58 ± 14.41 and lower middle class participants scored 55.64 ± 10.95 with significant differences ($p=0.000$). Participants in the lower middle socioeconomic status demonstrated the worst OHRQoL scored 16.78 ± 4.97 on the OHIP-14 scale and still upper class respondents displayed the best OHRQoL with 7.00 ± 0.00 yet these scores were significantly different between socioeconomic groups ($p=0.013$). The scores from the HeLD assessment had a weak inverse relationship ($r=-0.193$) with OHIP-14 measures ($p=0.003$) which demonstrates that better oral health literacy leads to improved oral health-related quality of life.

Conclusion: The socioeconomic background of a person strongly influenced their oral health literacy skills since those from affluent backgrounds demonstrated better results. People who demonstrated superior oral health literacy abilities also showed enhanced quality of life scores. Research shows it is essential to direct interventions for enhancing oral health knowledge along with literacy education toward reduced socioeconomic populations to improve both oral health results and patient access to care.

Keywords: Oral health literacy, socioeconomic status, rural population, Jaipur, Health Literacy in Dentistry (HeLD), Oral Health Impact Profile (OHIP-14), quality of life.

INTRODUCTION

Every person's capacity to access health information depends on their health literacy abilities to understand information and appraise its worth as well as apply appropriate knowledge for making health decisions.^[1] The ability to understand oral health content called oral health literacy (OHL) serves as the basis for dental hygiene practices as well as disease prevention and dental service selection.^[2] Moreover, OHL extends beyond literary and comprehension skills because it requires competent communication with healthcare providers and clear understanding of medical prescriptions and the management of complicated healthcare systems.^[3]

Research demonstrates that health literacy holds great significance for rural populations since it creates direct consequences for health disparities.^[4] Low oral health-related literacy skills lead to bad oral care habits and greater dental disease presence and reduced dental service benefit use.^[5,6] The Indian rural communities encounter substantial challenges for their oral healthcare because they show low literacy rates and experience limited accessibility and financial impediments.^[7] Adult health outcomes become worse according to NAAL studies for people who possess limited health literacy especially among those from low socioeconomic backgrounds.^[8]

The relationship between dental health and socioeconomic conditions remains strong since lower income communities generally have worse oral health results and limited dental care availability.^[9,10] Studies have confirmed that social economic status shapes individuals' ability to understand health information which produces unsatisfactory health activities.^[11,12] Studies have confirmed that oral health literacy serves as a factor which impacts oral health-related quality of life (OHRQoL).^[13] Research demonstrates that people with lesser OHL encounter higher risks of oral health troubles combined with discomfort and life quality reduction.^[14,15]

Research instruments developed to assess OHL include both the Health Literacy in Dentistry (HeLD) scale and the Oral Health Impact Profile (OHIP-14).^[6,7] The HeLD scale tests subject proficiency in obtaining and processing and applying oral health information also measuring its effects on life quality through OHIP-14.^[8] Results from research using these measurement tools show that low OHL connects to decreased dental care attendance and poor oral hygiene and heavier oral disease burden.^[9,2]

MATERIALS AND METHODS

The study evaluated oral health literacy levels between socioeconomic groups in rural Jaipur using validated measurement tools which ran across different areas. The Department of Public Health Dentistry at NIMS Dental College within NIMS University in Jaipur, Rajasthan executed the evaluation over one year with a pilot study incorporated. The data collection span lasted from January 1, 2017 to March 31, 2017 during three days per week.

The subjects involved were residents from rural areas situated within Jaipur district of Rajasthan. Jaipur functions as Rajasthan's capital city while being composed of 15 blocks which each house several villages. This study utilized Amer Block obtained through simple random sampling as its research location. Kanwarpora, Achrol, Kant, and Chitanoo made up the selection of villages within Amer Block. The research involved 240 participants where 60 people took part from each selected village.

To obtain participants the study used a varied sampling method that included multiple selection steps. Amer Block obtained its selection through random procedure from the Jaipur district. Four villages were selected by using simple random sampling within the chosen block. A total of forty individuals from each of the selected four villages contributed to the sample pool which surpassed the required 240 participants mark.

The investigators calculated their sample size while using previous research findings along with a 95% confidence interval and 80% study power. The statistical validity of the research required that 240 participants meet the set parameters.

Inclusion Criteria

- Individuals aged 18 years and above.
- Residents of the selected villages.

Subject participation was limited to those who had the literacy skills for reading and writing either Hindi or English language.

Exclusion Criteria

People who refused to grant permission for research participation were excluded from the study.

People with any physical or intellectual disability which hinders their verbal communication were excluded from the study.

- Non-residents of the study area.
- Incompletely filled questionnaires.

Two validated measurement tools served to evaluate oral health literacy and its effects on oral health-related quality of life (OHRQoL).

1. Health Literacy in Dentistry (HeLD) Scale

A validated measurement instrument named HeLD Scale reveals how individuals obtain and make use of oral health information to seek and understand healthcare. A total of 29 items make up this assessment tool which divides itself into seven different domains.

- Receptivity
- Understanding

- Support
- Economic barriers
- Access
- Communication
- Utilization

The study participants rated the statements on the 5-point scale beginning with "Without any difficulty" and ending with "Unable to do."

2. Oral Health Impact Profile (OHIP-14)

The OHIP-14 tool represents one of the main instruments used for evaluating oral health-related quality of life. The brief approach to OHIP-14 consists of 14 items that cover seven conceptual domains.

- Functional limitation
- Pain
- Psychological discomfort
- Physical disability
- Psychological disability
- Social disability
- Handicap

The research instrument used a Likert response scale where participants selected their answers between 0 - Never and 4 - Very Often. People who score higher in the OHIP-14 evaluation show more extensive adverse effects from oral health on their daily life quality.

Initial versions of HeLD and OHIP-14 questionnaires existed as English instruments which experts translated into Hindi for distribution. A professional back-translated the Hindi version to English for verification purposes. A test with 24

participants made up of 10% of the entire sample group checked the questionnaire's intelligibility and practicality. The participants from the pilot study received no necessary changes and were thus included as part of the main study.

Survey data was collected by conducting visits at household doors. The study team consisting of the main investigator joined by two trained assistants explained the research purpose to households prior to gaining consent through interviews. Subjects responded to both the HeLD and OHIP-14 surveys using either Hindi or English languages. Data acquisition each day involved five to ten participants who had their information directly logged into Excel spreadsheets for additional evaluation. Researchers analyzed the obtained data through SPSS Version 20.0.

RESULTS

The mean HeLD score varied significantly across socioeconomic groups ($p = 0.000$). The highest HeLD score was recorded in the upper middle class (82.53 ± 13.88), followed by the middle class (70.58 ± 14.41). The lower middle class had the lowest mean HeLD score (55.64 ± 10.95).

Similarly, the OHIP-14 scores differed significantly ($p = 0.013$) among socioeconomic groups. The highest mean OHIP-14 score was observed in the lower middle class (16.78 ± 4.97), while the lowest was seen in the upper class (7.00 ± 0.00) (Table 1).

Table 1: Comparison of HeLD and OHIP-14 Scores Among Socioeconomic Groups

Socioeconomic Status	HeLD Mean \pm SD	OHIP-14 Mean \pm SD
Upper Class (n=1)	80.00 \pm 0.00	7.00 \pm 0.00
Upper Middle Class (n=49)	82.53 \pm 13.88	13.59 \pm 6.53
Middle Class (n=72)	70.58 \pm 14.41	15.54 \pm 6.37
Lower Middle Class (n=117)	55.64 \pm 10.95	16.78 \pm 4.97
Lower Class (n=1)	70.00 \pm 0.00	16.00 \pm 0.00

2. Village-Wise Comparison of HeLD and OHIP-14 Scores

There was a statistically significant variation in HeLD scores among villages ($p = 0.000$). The highest HeLD score was found in **Kanwarpura** (76.07 ± 20.01), while the lowest was in **Achrol**

(60.93 ± 13.88).

The OHIP-14 scores also showed significant differences ($p = 0.043$), with **Kant** having the highest mean OHIP-14 score (17.45 ± 5.51), whereas **Kanwarpura** recorded the lowest (14.70 ± 5.75) (Table 2).

Table 2: Comparison of HeLD and OHIP-14 Scores Across Villages

Village	HeLD Mean \pm SD	OHIP-14 Mean \pm SD
Kanwarpura	76.07 \pm 20.01	14.70 \pm 5.75
Achrol	60.93 \pm 13.88	15.77 \pm 5.17
Kant	65.12 \pm 12.95	17.45 \pm 5.51
Chitanoo	60.98 \pm 13.96	14.93 \pm 6.67

3. Gender-Based Comparison of HeLD and OHIP-14 Scores

The mean HeLD score for females (66.77 ± 15.28) was slightly higher than that for males (63.44 ± 19.14), but this difference was not statistically

significant ($p = 0.194$). Similarly, the OHIP-14 scores for males and females showed no significant difference ($p = 0.975$), with males scoring 15.72 ± 5.93 and females 15.69 ± 5.75 (Table 3).

Table 3: Comparison of HeLD and OHIP-14 Scores by Gender

Gender	HeLD Mean ± SD	OHIP-14 Mean ± SD	p-value
Male (n=168)	66.77 ± 15.28	15.72 ± 5.93	0.194 (HeLD), 0.975 (OHIP)
Female (n=72)	63.44 ± 19.14	15.69 ± 5.75	

- **Socioeconomic status significantly influenced oral health literacy**, with higher scores in the upper socioeconomic groups (Table 1).
- **Geographical variation was evident in oral health literacy and quality of life**, with significant differences among villages (Table 2).
- **Gender did not significantly impact oral health literacy or quality of life** (Table 3).

DISCUSSION

The current oral health literacy assessment determines both oral health outcomes and general well-being of individuals. People with limited OHL experience worse oral health results together with higher dental disease occurrences and reduced preventive dental service use and worse oral health-related quality of life (OHRQoL) scores.^[1,2] The current research evaluated dental health literacy differences among various economic groups situated in rural Jaipur through combined use of HeLD Scale and OHIP-14 evaluation tools despite clear socioeconomic status differences.

Individuals who belong to higher socioeconomic classes achieved better oral health literacy scores in comparison to those from lower socioeconomic backgrounds according to study results. Subjects from the upper middle-class section showed the highest HeLD scores which demonstrates strong oral health information understanding and application whereas the lower middle-class inhabitants scored the lowest. Research findings validate earlier studies which revealed that socioeconomic status (SES) creates a strong link with OHL because privileged individuals acquire greater access to oral health information and resources.^[3,4] Lower socioeconomic groups encounter various obstacles such as accessibility limitations and affordability issues and limited awareness that dampen their oral health performance.^[5]

Better oral health literacy corresponded to improved OHRQoL as shown by a weak negative link between HeLD and OHIP-14 results. Research conducted in different studies showed that better OHL led individuals to report less oral health-related functional limitations and social discomfort and pain problems.^[6,7] People with poor oral health literacy experience delayed dental care appointments along with incorrect home dental care practices that create additional dental issues which reduce life quality levels.^[8] Research has shown that restricted health literacy leads to higher healthcare expenses because people require advanced medical treatment for preventable oral complications.^[9]

Gender had no impact on either oral health literacy or OHRQoL scores between males and females within the rural population. The research output stands against multiple studies which show women achieve better health literacy because of increased healthcare service utilization.^[10,11] Additional studies without education and socioeconomic status variables suggest gender does not affect health literacy levels thus confirming the findings of this research.^[12]

University students who maintained daily toothbrushing routines and possessed personal toothbrushes achieved better HeLD scores in comparison to their counterparts without these practices. According to existing research oral hygiene practices closely depend on how people understand and apply oral health knowledge.^[13] Research shows that people with better health literacy tend to follow prevention strategies by getting routine dental care and practicing their teeth hygiene well.^[14] Educational programs must specifically address lower-literate audiences because they need improved behaviors and oral health results.^[15]

CONCLUSION

Research findings reveal that people from lower socioeconomic classes exhibit worse oral health literacy and poorer quality of life. The research requires specific strategic programs which aim to improve OHL among lower-revenue groups to achieve better oral health results and general wellness outcomes. Additional research should monitor long-term oral health literacy progress from community interventions to determine the success of these programs in closing literacy disparities.

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