Influence of Oral Health Literacy on Dental Anxiety Among Adult Patients in Cavite

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ABSTRACT

Oral health literacy is a critical determinant of dental health outcomes. Previous research has suggested a link between low oral health literacy and dental anxiety, which can hinder access to dental care. This study aimed to investigate the relationship between oral health literacy and dental anxiety among adult patients in Cavite. A cross-sectional survey was conducted among 100 adult patients aged 20-60 years in Cavite. Participants completed self-administered questionnaires assessing oral health literacy and dental anxiety. Pearson's r and Kendall's Tau B were used to analyze the correlation between the two variables. The results revealed a moderate level of oral health literacy and a relatively high level of dental anxiety among the participants. However, a significant correlation between oral health literacy and dental anxiety was not found. While this study suggests that oral health literacy may not be a primary predictor of dental anxiety among adult patients in Cavite, further research is needed to explore the complex interplay between these factors. Future studies could consider larger sample sizes, longitudinal designs, and additional variables such as sociodemographic characteristics and dental experiences.

Keywords: Oral Health Literacy, Dental Anxiety, Dental Health

INTRODUCTION

Oral health literacy, a person's ability to understand and act upon oral health information, has been identified as a critical factor in maintaining optimal oral health. Previous studies, such as Alzeer (2024) and Cao (2023) have highlighted the significant role of oral health literacy in influencing health behaviors, outcomes, and decision-making. Alzeer (2024) explored the relationship between low oral health literacy and dental anxiety. These studies have consistently demonstrated that individuals with low oral health literacy are more likely to experience dental anxiety and avoid dental care.

Skallevold (2023) have defined oral health literacy and its importance. As defined by Alzeer, oral health literacy encompasses an individual's ability to obtain, process, and comprehend basic oral health information and services necessary for informed decision-making. Possessing adequate oral health literacy is crucial for reducing health disparities and improving overall oral health outcomes. Hirota (2024), Bhola (2014) and Alzeer (2024) that have linked low health literacy to poor health outcomes. Research has consistently linked low health literacy to inadequate health knowledge, unhealthy behaviors, reduced use of preventive services, poor health status, increased hospitalization rates, and higher mortality rates. Conversely, enhancing health literacy can promote informed decision-making, reduce health risks, improve well-being, and enhance patient safety and care quality.

This study aims to investigate the relationship between oral health literacy and dental anxiety among adult patients in Cavite, exploring the mediating role of sociodemographic factors and the impact on dental service utilization. Specifically, the study will address the following research questions:

1. What is the relationship between oral health literacy and dental anxiety among adult patients in Cavite?
2. Does oral health literacy mediate the relationship between sociodemographic factors (e.g., age, gender, education, income) and dental anxiety?
3. How does oral health literacy influence the utilization of dental services among adult patients in Cavite?
4. What are the factors that influence the development of dental anxiety among adult patients with low oral health literacy?

The following hypotheses will be tested:

1. There is a significant negative correlation between oral health literacy and dental anxiety among adult patients in Cavite.
2. Oral health literacy mediates the relationship between sociodemographic factors and dental anxiety, such that higher levels of oral health literacy are associated with lower levels of dental anxiety, even when controlling for sociodemographic factors.
3. Higher levels of oral health literacy are associated with greater utilization of dental services among adult patients in Cavite.

4. Factors such as previous negative dental experiences, perceived barriers to dental care, and cultural beliefs about dental health influence the development of dental anxiety among adult patients with low oral health literacy.

By addressing these research questions and hypotheses, this study will contribute to a deeper understanding of the complex relationship between oral health literacy, dental anxiety, and sociodemographic factors. The findings may inform interventions to improve oral health outcomes and reduce dental anxiety among vulnerable populations.

LITERATURE REVIEW

Oral Health Literacy and Dental Anxiety

Several studies have explored the connection between oral health literacy and dental anxiety. For instance, Blizniuk and Kopyt (2015) found a significant inverse relationship between oral health literacy and dental anxiety, suggesting that individuals with higher levels of oral health literacy were less likely to experience dental anxiety. Similarly, Wang and Liu (2019) reported a negative association between oral health literacy and dental anxiety among Chinese adults.

Kim and Park (2022) investigated the mediating role of oral health knowledge in the relationship between socioeconomic status and dental anxiety. Their findings indicated that oral health knowledge partially mediated the relationship, suggesting that individuals with higher levels of oral health knowledge were less likely to experience dental anxiety, even when controlling for socioeconomic factors.

Al-Zahrani and Al-Olayan (2021) examined the relationship between oral health literacy and dental health service utilization among Saudi Arabian adults. The study revealed a positive association between higher levels of oral health literacy and greater utilization of dental services.

Factors Influencing Dental Anxiety

Beyond oral health literacy, various factors have been identified as contributing to dental anxiety. Kwon and Lee (2020) conducted a systematic review to identify factors influencing dental anxiety among Korean adults. Their findings highlighted several key factors, including:

- Previous negative dental experiences: Traumatic dental experiences, such as painful procedures or negative interactions with dental professionals, can contribute to the development of dental anxiety.
- Perceived barriers to dental care: Concerns about cost, accessibility, and the discomfort associated with dental procedures can deter individuals from seeking dental care and exacerbate dental anxiety.

- Cultural beliefs about dental health: Cultural beliefs and attitudes towards dental health can influence individuals' perceptions of dental anxiety and their willingness to seek dental care.

Implications and Future Directions

The findings of these studies underscore the importance of addressing oral health literacy and addressing factors contributing to dental anxiety. Interventions aimed at improving oral health literacy and reducing dental anxiety can enhance oral health outcomes and improve access to dental care.

Future research should explore the complex interplay between oral health literacy, dental anxiety, and sociodemographic factors in diverse populations. Additionally, investigating the effectiveness of interventions designed to improve oral health literacy and reduce dental anxiety is essential to inform evidence-based practice.

METHODS

Research Design

This study employed a descriptive-correlational research design to investigate the relationship between oral health literacy and dental anxiety among adult patients in Cavite. This design is suitable for examining the association between variables without establishing causality.

Ethical Considerations

Prior to data collection, all participants provided informed consent in accordance with ethical research guidelines. The informed consent process included information about the study's purpose, participant eligibility, survey content, and the voluntary nature of participation. Participants were also informed of their right to withdraw from the study at any time.

To ensure data privacy and confidentiality, **a** consent form and data privacy act were implemented. The collected data was used solely for research purposes and was handled with discretion.

To validate participant consent, an acknowledgement of participation was obtained, requiring participants to sign a digital signature. The study and survey questionnaires were reviewed by the AUP Ethics Review Board to ensure adherence to ethical standards.

Population and Sampling

The study population consisted of adult patients attending the institution during the academic year 2022-2023. A convenience sampling technique was used to recruit participants.

Data Collection

A self-administered questionnaire with closed-ended questions was used to collect data on demographic information, oral health literacy, and dental anxiety. The questionnaire was developed based on existing literature and underwent confirmatory factor analysis to ensure its validity and reliability.

Demographic Profile:

- Age
- Gender
- Income
- Occupation
- Level of education

Oral Health Literacy Assessment:

- A 35-item questionnaire measuring respondents' awareness of oral health issues.

Dental Anxiety Assessment:

- A self-administered questionnaire consisting of close-ended questions.

Likert Scale:

A five-point Likert scale was used to measure the extent of oral health literacy and dental anxiety:

Scale	Response	Verbal Interpretation
9.1-10	Strongly Agree	Very High
6.5-9	Agree	High
3.5-6.49	Disagree	Average
0-3.49	Strongly Disagree	Below Average

Data Analysis

Descriptive Statistics

- **Demographic Data:** Descriptive statistics such as mean, standard deviation, frequency, and percentage will be used to summarize the demographic characteristics of the participants, including age, gender, and other relevant variables.
- **Oral Health Literacy:** The mean and standard deviation of the TOHLA scores will be calculated to assess the overall level of oral health literacy among the participants.
- **Dental Anxiety:** The mean and standard deviation of the DAS scores will be calculated to assess the overall level of dental anxiety among the participants.

Correlational Analysis

- **Pearson Correlation Coefficient:** A Pearson correlation coefficient will be calculated to examine the relationship between oral health literacy (TOHLA scores) and dental anxiety (DAS scores). This analysis will determine the strength and direction of the relationship between the two variables.

Hypotheses Testing:

- **Hypothesis 1:** A significant negative correlation between oral health literacy and dental anxiety will be tested using the Pearson correlation coefficient.

Additional Analyses (Optional)

- **Regression Analysis:** If the correlation analysis reveals a significant relationship, regression analysis can be conducted to further explore the relationship between oral health literacy and dental anxiety, controlling for potential confounding variables such as age, gender, and socioeconomic status.
- **Group Comparisons:** If significant differences in oral health literacy or dental anxiety are observed based on demographic characteristics, group comparisons can be conducted to examine the relationship between these variables within specific subgroups.

By conducting these analyses, the study will provide valuable insights into the relationship between oral health literacy and dental anxiety among adult patients in Cavite. The findings can inform interventions aimed at improving oral health literacy and reducing dental anxiety, ultimately leading to better oral health outcomes.

RESULTS AND DISCUSSION

Results

1. Level of Oral Health Literacy

The study included 100 participants, with an average oral health literacy score of 6.29, indicating an **average** level of literacy. The highest scores were observed for items related to

following dentist's instructions and making dental health decisions based on dental advice, while the lowest scores were for seeking second opinions.

2. Level of Dental Anxiety

Participants exhibited a **fair level of dental anxiety**, with the highest levels reported for surgical procedures, tooth drilling, and injection procedures. Lower anxiety levels were observed for routine dental procedures such as check-ups and cleanings.

3. Correlation between Oral Health Literacy and Dental Anxiety

The correlation analysis revealed **no significant correlation** between oral health literacy and dental anxiety. This suggests that, in this sample, oral health literacy may not be a significant predictor of dental anxiety.

4. Influence of Oral Health Literacy on Dental Anxiety

Regression analysis indicated that oral health literacy did not significantly predict dental anxiety. This suggests that other factors may play a more prominent role in influencing dental anxiety in this population.

5. Gender Differences

There were no significant differences in oral health literacy or dental anxiety between males and females in this study. This suggests that gender may not be a significant predictor of these variables in the examined sample.

6. Relationship between Age and Oral Health Literacy/Dental Anxiety

The correlation analysis revealed **no significant relationship** between age and either oral health literacy or dental anxiety. This indicates that age may not be a significant predictor of these variables in this sample.

Discussion

Oral Health Literacy

The average oral health literacy level in this study was moderate, suggesting that many participants may have difficulties understanding and applying oral health information. Efforts to improve oral health literacy, such as providing patient education materials and resources, can contribute to better oral health outcomes.

Dental Anxiety

The study found that dental anxiety was prevalent among participants, particularly for invasive procedures. Addressing dental anxiety through techniques such as cognitive-behavioral therapy

or relaxation techniques can enhance the patient experience and improve adherence to dental care.

Relationship between Oral Health Literacy and Dental Anxiety

While previous studies have suggested a link between oral health literacy and dental anxiety, the current study did not find a significant correlation. This may be due to the specific characteristics of the study population or other factors influencing dental anxiety. Further research is needed to explore the complex interplay between these variables.

Influence of Sociodemographic Factors

The study did not find significant differences in oral health literacy or dental anxiety based on gender or age. However, future research could explore the influence of other sociodemographic factors, such as socioeconomic status and education level, on these variables.

Limitations and Future Direction

The study's findings are limited by the sample size and the cross-sectional design. Future studies with larger sample sizes and longitudinal designs can provide more comprehensive insights into the relationship between oral health literacy and dental anxiety. Additionally, exploring the mediating role of other factors, such as previous dental experiences and cultural beliefs, can contribute to a deeper understanding of this complex relationship.

CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATION

This study aimed to investigate the relationship between oral health literacy and dental anxiety among adult patients in Cavite. While the study did not find a direct correlation between these two variables, it provides valuable insights into the factors influencing dental anxiety and highlights the importance of addressing this issue.

Key Findings:

- **Prevalent Dental Anxiety:** Dental anxiety was prevalent among participants, particularly for invasive procedures.
- **No Significant Correlation:** There was no significant correlation between oral health literacy and dental anxiety in this sample.
- **Other Factors Influencing Dental Anxiety:** Factors such as previous dental experiences, cultural beliefs, and sociodemographic characteristics may play a more significant role in influencing dental anxiety.
- **No Gender or Age Differences:** Gender and age were not found to be significant predictors of oral health literacy or dental anxiety in this study.

Implications:

The findings of this study emphasize the need for:

- **Comprehensive Interventions:** Addressing dental anxiety requires a multifaceted approach that considers various factors beyond oral health literacy.
- **Targeted Interventions:** Interventions should be tailored to address the specific needs of patients, considering their cultural background, previous experiences, and other relevant factors.
- **Improved Oral Health Literacy:** While not directly correlated with dental anxiety in this study, promoting oral health literacy can contribute to better oral health outcomes and may indirectly influence dental anxiety.

Future Research:

Further research is needed to explore the complex interplay between oral health literacy, dental anxiety, and other factors. Longitudinal studies can investigate the development of dental anxiety over time and the effectiveness of interventions aimed at reducing it. Additionally, examining the role of cultural beliefs and sociodemographic factors in dental anxiety can provide valuable insights for targeted interventions.

By addressing dental anxiety and promoting oral health literacy, healthcare professionals can enhance the overall oral health and well-being of patients.

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