

Assessment of Oral Health Awareness and Practices Among Patients Attending a Dental College in Rajasthan: A Cross-Sectional Study

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Abstract

Oral health is an important component of overall health and quality of life. The present cross-sectional study was conducted to assess oral health awareness and oral hygiene practices among patients attending a selected Jaipur Dental College in Rajasthan. A total of 420 participants aged 18 years and above were included using a consecutive sampling technique. Data were collected through a structured, interviewer-administered questionnaire covering sociodemographic characteristics, oral health awareness, and oral hygiene practices. The collected data were analysed using appropriate descriptive and inferential statistical methods. Among the participants, 44.0% had moderate oral health awareness, 36.0% had good awareness, and 20.0% had poor awareness. Regarding oral hygiene practices, 46.0% demonstrated moderate practices, 31.0% had good practices, and 23.0% had poor practices. Although 86.0% of participants were aware of the importance of regular tooth brushing, only 41.9% reported brushing twice daily. Interdental cleaning was practised by 23.1% of participants, while only 26.0% reported regular dental visits. Better oral health awareness was observed among participants with higher educational status, and a positive relationship was observed between oral health awareness and oral hygiene practices. The study concluded that although a considerable proportion of patients had moderate to good oral health awareness, gaps existed between awareness and actual oral hygiene practices. Strengthening oral health education, preventive counselling, regular dental check-ups, and promotion of appropriate oral hygiene practices may help improve oral health outcomes among patients attending government healthcare facilities.

Keywords: Oral health, awareness, oral hygiene practices, dental health, cross-sectional study, Rajasthan, patients.

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INTRODUCTION

Oral health is an integral part of general health and well-being. It plays an important role in essential daily activities such as eating, speaking, communication, and maintaining facial appearance. Poor oral health can negatively affect an individual's comfort, social interaction, and quality of life. Dental caries and periodontal diseases are among the most common oral health problems. They are closely associated with inadequate oral hygiene, unhealthy habits, lack of awareness, and irregular utilisation of dental services. Oral health awareness refers to an individual's understanding of oral diseases, their causes, preventive measures, and the importance of maintaining good oral hygiene. Knowledge of proper toothbrushing, use of fluoridated toothpaste, interdental cleaning, dietary habits, tobacco avoidance, and regular dental visits can influence an individual's oral health behaviour. However, knowing oral health does not always

ensure that appropriate practices are followed in everyday life. Therefore, assessing both awareness and actual oral hygiene practices is important for understanding patients' oral health behaviour. Several studies conducted in India have reported differences between oral health knowledge and practices among various population groups. Jain et al. assessed oral hygiene awareness and practices among patients attending the outpatient department of Vyas Dental College and Hospital, Jodhpur, Rajasthan. Their study demonstrated the importance of assessing oral hygiene awareness and routine practices among patients attending dental institutions [1]. Singh et al. evaluated knowledge, attitude, and practices related to oral health among patients visiting a North Indian dental school. Their findings indicated that patients may be aware of oral health but still demonstrate deficiencies in appropriate oral health practices. This highlights the importance of providing proper oral health

education during dental visits [2]. Oral health awareness is also important among caregivers because they may influence the oral health behaviour of children and other dependent individuals. Nagarajappa et al. assessed knowledge, attitudes, and practices related to oral health among caregivers in Udaipur, India, and emphasised the importance of oral health-promoting knowledge and practices in this group [3]. Kapoor et al. studied oral hygiene awareness and practices among patients visiting the Department of Periodontology at a dental college and hospital in North India. Their study emphasised the importance of evaluating patients' understanding and adherence to routine oral hygiene practices in a clinical setting [4]. Dental hospitals and colleges provide an important opportunity to identify inadequate oral hygiene practices and provide appropriate preventive counselling. Differences in oral health awareness and practices may also be associated with demographic characteristics. Oberoi et al. evaluated awareness regarding oral hygiene practices and explored gender differences among patients attending for oral prophylaxis. Their findings highlighted the importance of considering demographic factors while assessing oral health behaviour and planning oral health education programmes [5].

Oral health promotion is not limited to dental professionals and patients. Primary healthcare workers can also help improve oral health awareness at the community level. Bhoopathi et al. assessed oral health-related knowledge, attitudes, and practices among primary healthcare workers and highlighted the need to strengthen oral health knowledge among healthcare personnel [6].

Patients attending a dental college represent an important population for assessing oral health awareness and practices. Such patients may differ in age, educational status, socioeconomic background, residential area, and previous experience with dental care. Their reasons for visiting the dental college may also range from pain and existing dental problems to routine dental examinations and preventive care. Assessment of this population can therefore provide useful information regarding their level of awareness, daily oral hygiene practices, and utilisation of dental services. A cross-sectional assessment can help identify common gaps between patients' oral health knowledge and their actual practices. It can also provide information on toothbrushing frequency, use of oral hygiene aids, dietary practices, dental visit patterns, and awareness of prevention strategies for common oral diseases. Identifying these gaps may help dental professionals provide more focused and effective oral health education. Rajasthan is a geographically and socially diverse state, and variations in educational background, socioeconomic conditions, and accessibility of healthcare services may

influence oral health behaviour. A previous study conducted at Vyas Dental College and Hospital, Jodhpur, has provided evidence regarding oral hygiene awareness and practices among patients in Rajasthan [1]. However, assessing oral health awareness and practices across different patient populations remains important for understanding the current situation and identifying areas where preventive interventions are needed.

Therefore, the present study entitled "Assessment of Oral Health Awareness and Practices Among Patients Attending a Dental College in Rajasthan: A Cross-Sectional Study" is undertaken to assess the level of oral health awareness and oral hygiene practices among patients attending a dental college in Rajasthan. The study will also help identify areas of inadequate knowledge and inappropriate practices that may require further oral health education and counselling.

Understanding the relationship between oral health awareness and actual practices can contribute to the development of appropriate preventive strategies. Improved oral health education, regular dental check-ups, appropriate oral hygiene practices, and early identification of oral health problems may ultimately contribute to better oral health outcomes and improved quality of life among patients [1,2,4,5].

Methodology

The present study was conducted in Jaipur Dental college I-based cross-sectional study among patients attending Jaipur Dental College in Rajasthan. The study was conducted over a period of 6 months. A total of approximately 420 participants were included in the study. The sample size was calculated using the formula $n = Z^2pq/d^2$, considering a 95% confidence level and 5% margin of error. Participants were selected using a consecutive sampling technique until the required sample size was achieved. Patients aged 18 years and above, who were willing to participate and provided written informed consent, were included in the study. Patients who were unwilling to participate, unable to complete the questionnaire, or who provided incomplete information were excluded. Data were collected using a structured, interviewer-administered questionnaire developed following a review of the relevant literature [1–6]. The questionnaire assessed sociodemographic characteristics, oral health awareness, and oral hygiene practices, including toothbrushing habits, toothpaste use, interdental cleaning, dietary habits, tobacco use, and dental visit patterns. Each correct awareness response was assigned a score of 1, while incorrect or "don't know" responses were assigned a score of 0. Participants were categorised into good, moderate, and poor awareness groups based on their total scores. Oral hygiene practices were assessed and categorised in a similar manner. Subject-matter experts reviewed the questionnaire and pilot-tested

it before the main study. Ethical approval was obtained from the concerned Institutional Ethics Committee, and written informed consent was obtained from all participants. Confidentiality and privacy of the participants were maintained throughout the study. The collected data were entered and analysed using appropriate statistical software. Descriptive statistics were presented as frequency, percentage, mean, and standard deviation. The Chi-square test was used to assess associations between categorical variables, and appropriate statistical tests were applied for continuous variables. A p-value <0.05 was considered statistically significant.

The study assessed the level of oral health awareness and practices among patients and identified factors associated with oral health behaviour, thereby helping to understand the need for appropriate oral health education and preventive programmes.

RESULTS

A total of 420 patients attending the selected Jaipur dental College in Rajasthan were included in the study. The participants were assessed regarding their sociodemographic characteristics, oral health awareness, and oral hygiene practices.

Table 1. Distribution of participants according to sociodemographic characteristics (n=420)

Variable	Category	n	%
Age	18–30 years	126	30.0
	31–45 years	147	35.0
	46–60 years	105	25.0
	>60 years	42	10.0
Gender	Male	231	55.0
	Female	189	45.0
Education	Illiterate	84	20.0
	Primary/Secondary	168	40.0
	Higher secondary	84	20.0
	Graduate and above	84	20.0
Residence	Urban	189	45.0
	Rural	231	55.0

The majority of participants were in the 31–45 years age group (35.0%), followed by the 18–30 years age group (30.0%). Males constituted 55.0% of the study population, while females constituted 45.0%. More than half of the participants (55.0%) were from rural areas.

Table 2. Distribution of participants according to oral health awareness (n=420)

Awareness level	n	%
Good	151	36.0
Moderate	185	44.0
Poor	84	20.0
Total	420	100.0

The results showed that 44.0% of participants had moderate oral health awareness, while 36.0% had good awareness. Poor awareness was observed among 20.0% of participants.

Table 3. Responses to selected oral health awareness questions (n=420)

Awareness item	Correct response n (%)
Awareness of the importance of regular tooth brushing	361 (86.0)
Awareness that dental caries can be prevented	298 (71.0)
Awareness regarding gum disease	277 (66.0)
Awareness of the importance of fluoridated toothpaste	235 (56.0)
Awareness regarding regular dental check-ups	294 (70.0)
Awareness regarding harmful effects of tobacco	344 (82.0)
Awareness regarding the importance of interdental cleaning	193 (46.0)

The highest level of awareness was observed regarding the importance of regular toothbrushing (86.0%) and the harmful effects of tobacco (82.0%). Awareness regarding interdental cleaning was comparatively low (46.0%).

Table 4. Distribution of participants according to oral hygiene practices (n=420)

Oral hygiene practice	n	%
Brushed teeth twice daily	176	41.9
Brushed teeth once daily	210	50.0
Did not brush regularly	34	8.1

Oral hygiene practice	n	%
Used toothpaste	394	93.8
Used toothbrush	407	96.9
Cleaned tongue regularly	265	63.1
Used interdental cleaning aids	97	23.1
Used mouthwash regularly	84	20.0
Visited dentist regularly	109	26.0

The majority of participants used a toothbrush (96.9%) and toothpaste (93.8%). However, only 41.9% reported brushing their teeth twice daily. Interdental cleaning was practised by only 23.1% of participants, while 26.0% reported regular dental visits.

Table 5. Distribution of participants according to oral hygiene practice score (n=420)

Practice level	n	%
Good	130	31.0
Moderate	193	46.0
Poor	97	23.0
Total	420	100.0

Overall, 46.0% of participants demonstrated moderate oral hygiene practices, whereas 31.0% demonstrated good practices and 23.0% demonstrated poor practices.

Table 6. Association between oral health awareness and gender (n=420)

Awareness level	Male n (%)	Female n (%)	Total
Good	70 (30.3)	81 (42.9)	151
Moderate	103 (44.6)	82 (43.4)	185
Poor	58 (25.1)	26 (13.8)	84
Total	231 (100)	189 (100)	420

Females showed a higher proportion of good oral health awareness (42.9%) than males (30.3%), whereas poor awareness was more common among males (25.1%). The association was considered statistically significant ($p < 0.05$).

Table 7. Association between oral health awareness and educational status (n=420)

Education	Good awareness n (%)	Moderate awareness n (%)	Poor awareness n (%)
Illiterate	12 (14.3)	38 (45.2)	34 (40.5)
Primary/Secondary	48 (28.6)	82 (48.8)	38 (22.6)
Higher secondary	36 (42.9)	39 (46.4)	9 (10.7)
Graduate and above	55 (65.5)	26 (31.0)	3 (3.5)

A gradual increase in the proportion of participants with good oral health awareness was observed as educational status increased. Participants with graduate-level education or above showed the highest proportion of good awareness (65.5%).

Table 8. Association between oral health awareness and oral hygiene practices (n=420)

Awareness level	Good practice n (%)	Moderate practice n (%)	Poor practice n (%)
Good	72 (47.7)	61 (40.4)	18 (11.9)
Moderate	51 (27.6)	98 (53.0)	36 (19.4)
Poor	7 (8.3)	34 (40.5)	43 (51.2)

Participants with good oral health awareness demonstrated a higher proportion of good oral hygiene practices (47.7%), whereas poor oral hygiene practices were more frequent among participants with poor awareness (51.2%). The association between awareness and practice was statistically significant ($p < 0.001$).

Overall Findings

Among the 420 participants, the majority had moderate oral health awareness (44.0%) and moderate oral hygiene practices (46.0%). Although most participants were aware of the importance of toothbrushing and the harmful effects of tobacco, comparatively fewer followed twice-daily toothbrushing, interdental cleaning, and regular dental visits.

Better oral health awareness was observed among participants with higher educational status. Females had a higher proportion of good awareness than males. A positive relationship was also observed between oral health awareness and oral hygiene practices, with participants having better awareness generally demonstrating better oral hygiene practices.

DISCUSSION

The present study assessed oral health awareness and oral hygiene practices among 420 patients attending a Government Hospital in Rajasthan. The findings showed that 44.0% of participants had moderate oral health awareness, 36.0% had good awareness, and 20.0% had poor awareness. Similarly, 46.0% demonstrated moderate oral hygiene practices. These findings indicate that although many participants had basic knowledge regarding oral health, appropriate knowledge was not always reflected in their daily practices. The findings were comparable to those of the study by Jain et al. among patients attending Vyas Dental College and Hospital, Jodhpur, Rajasthan, which emphasised the importance of assessing oral hygiene awareness and practices in dental healthcare facilities [1]. Singh et al. also reported differences in oral health knowledge, attitudes, and practices among patients visiting a North Indian dental school [2]. These observations support the present study's finding that awareness and behaviour may not always correspond.

Nagarajappa et al., in their study among caregivers in Udaipur, highlighted the importance of oral health-promoting knowledge, attitudes, and practices [3]. In the present study, awareness regarding interdental cleaning was relatively low (46.0%), and only 23.1% of participants reported using interdental cleaning aids. This suggests that oral health education should emphasise preventive measures beyond routine toothbrushing.

Kapoor et al. assessed oral hygiene awareness and practices among patients attending a dental college and hospital and emphasised the need to improve patients' understanding of routine oral hygiene measures [4]. In the present study, although 86.0% of participants were aware of the importance of regular tooth brushing, only 41.9% reported brushing twice daily. This difference indicates a gap between awareness and actual practice.

Oberoi et al. evaluated oral hygiene awareness and gender differences among patients attending for oral prophylaxis [5]. In the present study, females demonstrated a higher proportion of good oral health awareness than males. This suggests that demographic characteristics, including gender, may influence oral health-related knowledge and behaviour.

The present study also demonstrated an association between educational status and oral health awareness. Participants with higher educational qualifications showed greater awareness than those with lower educational status. Similar emphasis on the importance of oral health knowledge and health education has been reported by Bhoopathi et al. among primary healthcare workers [6]. Other studies have also examined oral health knowledge, attitudes, and practices in different Indian populations. Yadav et al. reported the importance of assessing oral health knowledge, attitude, and

practice among nursing students in Rajasthan [7]. Shah et al. demonstrated that educational interventions can improve oral health knowledge, suggesting that structured health education may help address knowledge gaps identified in the present study [8]. Kumar et al. compared oral health knowledge, attitude, and practices among dental and medical students and highlighted the role of educational background in oral health-related behaviour [9]. Palati et al. also emphasised the importance of oral health awareness and assessment of oral health-related knowledge and practices among elderly individuals [10]. Lakshmi et al. reported a relationship between knowledge, attitude, practice, and oral health status among young adults receiving nursing care [11]. Similarly, Mohan et al. assessed patients' knowledge, attitude, and practices regarding restorative and endodontic treatment and demonstrated the importance of patient awareness in dental treatment-related behaviour [12].

Parakh et al. highlighted the importance of oral health awareness among patients with systemic disease and demonstrated the need for better understanding of oral manifestations and oral healthcare [13]. Sood et al. also reported the importance of nurses' oral health knowledge and practices in a tertiary healthcare setting [14]. These studies collectively emphasise that oral health education should be incorporated into routine healthcare settings rather than restricted to dental clinics alone. Recent evidence from rural India has further demonstrated knowledge-practice gaps and differences in the utilisation of dental services [15]. This is relevant to the present study, in which only 26.0% of participants reported regular dental visits despite relatively high awareness of basic oral health measures.

A positive relationship was observed between oral health awareness and oral hygiene practices in the present study. Participants with good awareness demonstrated better oral hygiene practices, whereas poor practices were more frequent among those with poor awareness. Overall, the findings of the present study are consistent with previous research [1–15] and indicate the need to strengthen patient-oriented oral health education, particularly regarding twice-daily toothbrushing, interdental cleaning, tobacco avoidance, and regular preventive dental visits.

CONCLUSION

The present study concluded that most participants had moderate oral health awareness and moderate oral hygiene practices. Although awareness of basic oral hygiene was relatively good, several gaps were observed in practice, particularly in twice-daily toothbrushing, interdental cleaning, and regular dental visits. Better oral health awareness was associated with higher educational status and better oral hygiene practices. The findings highlight the need for regular oral health education, preventive counselling, and promotion of healthy oral hygiene

practices among patients attending government healthcare facilities.

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