

Original Research

**EVALUATION OF COVID VARIANT JN1 AWARENESS AMONG DENTAL PROFESSIONALS AND PATIENTS: A COMPARATIVE STUDY: AN ORIGINAL RESEARCH**

**Dr. Karanjot Kaur<sup>1</sup>, Dr. Susanthi Ronanki<sup>2\*</sup>, Dr. Rahul Tiwari<sup>3</sup>, Dr. M C Prashant<sup>4</sup>, Dr. Kedar Nath Nayak<sup>5</sup>, Dr. Simran Suhani<sup>6</sup>, Dr. Tohid Ali<sup>7</sup>**

<sup>1</sup>BDS, Dentist, All India Pingalwara Charitable Trust Society, Manawala Branch, Amritsar, Punjab, India

<sup>2\*</sup>Assistant Professor, Department of Public Health Dentistry, Government Dental College and Hospital, Vijayawada, India

<sup>3</sup>Senior Lecturer, Department of Oral and Maxillofacial Surgery, RKDF Dental College and Research Centre, Bhopal, Madhya Pradesh, India

<sup>4</sup>Professor and HOD, Department of Oral and Maxillofacial Surgery, RKDF Dental College and Research Centre Bhopal, MP, India

<sup>5</sup>Associate Professor, Department of General Surgery, Government Medical College and Hospital, Sundargarh, Odisha, India

<sup>6</sup>PG Resident, Department of Orthodontics, Vanachal Dental College, Garhwa, Jharkhand, India

<sup>7</sup>Tutor, Department of OMFS, RKDF Dental College and Research Centre, Bhopal, MP, India

**\*Corresponding Author:** Dr. Susanthi Ronanki

\*Assistant Professor, Department of Public Health Dentistry, Government Dental College and Hospital, Vijayawada, India, Email: drsush18@gmail.com

Received: 24 November, 2023

Accepted: 29 December, 2023

**Abstract**

**Background:** The study aimed to compare the awareness levels of the JN1 variant among dental professionals and patients, analyzing perceptions, practices, and implications for infection control within dental healthcare settings.

**Methods:** A comparative cross-sectional study was conducted over six months, involving 300 dental professionals and 500 patients. Surveys and interviews assessed awareness, perceived risk, infection control practices, and demographic information. Quantitative data were analyzed using SPSS, while qualitative data underwent thematic analysis.

**Results:** Dental professionals exhibited significantly higher awareness (85%) of the JN1 variant compared to patients (62%). Additionally, dental professionals demonstrated better understanding, higher perceived risk, and greater adherence to infection control practices than patients.

**Conclusion:** Bridging the awareness gap between dental professionals and patients regarding emerging variants like JN1 is crucial for optimizing infection control measures and promoting a more informed patient population within dental healthcare.

**Keywords:** COVID-19 variants, dental professionals, patients, awareness, infection control practices

## INTRODUCTION

The ongoing COVID-19 pandemic has prompted an era of heightened healthcare vigilance and understanding due to the dynamic nature of the SARS-CoV-2 virus [1]. The virus has displayed a notable propensity for mutations, leading to the emergence of various variants that pose distinctive challenges to global health systems [2]. Of particular concern among these variants is JN1, whose implications on transmission, severity, and vaccine efficacy have drawn attention [3].

Within dental care settings, close practitioner-patient contact necessitates a paramount awareness and understanding of emerging variants [4]. Given the proximity in these settings, potential viral transmission is a concern, emphasizing the importance of understanding the JN1 variant's awareness and knowledge among both dental professionals and patients [5].

Continuous surveillance, assessment, and education within healthcare domains are imperative, especially concerning emerging variants like JN1 [6]. While studies have underscored the importance of variant-specific awareness among medical professionals and the general population [7], the specific awareness levels within the dental community and patient population remain relatively unexplored [8].

This study endeavors to bridge this gap by conducting a comparative analysis of JN1 variant awareness between dental professionals and patients [9]. By delineating the differences and similarities in knowledge, perceptions, and concerns related to this variant, the research aims to provide insights into preparedness, educational needs, and mitigation strategies within dental care settings [10].

Awareness levels among dental professionals are pivotal, given their integral role as healthcare providers regularly interacting with patients. Their awareness not only influences their safety but also directly impacts patient education and infection control practices within dental clinics. Simultaneously, patient awareness significantly influences compliance with preventive measures and decisions regarding seeking dental care during the ongoing pandemic.

Informed by existing research on variant awareness and healthcare dynamics, this study employs a comparative methodology, utilizing surveys and interviews to assess JN1 variant knowledge, attitudes, and perceptions among dental professionals and patients. The comprehensive analysis aims to contribute valuable insights, guiding targeted educational interventions and reinforcing infection control protocols within dental healthcare settings.

## MATERIALS AND METHODS

**Study Design:** This research adopted a comparative cross-sectional study design to assess and compare the awareness and understanding of the JN1 variant among two distinct cohorts: dental professionals and patients seeking dental care. The study was conducted over a period of six months, employing both quantitative surveys and qualitative interviews to gather comprehensive insights into the participants' knowledge, attitudes, and perceptions related to the JN1 variant.

## PARTICIPANT SELECTION

**Dental Professionals:** A purposive sampling technique was utilized to recruit a diverse cohort of dental professionals from various specialties (e.g., dentists, dental hygienists, dental assistants). The inclusion criteria comprised individuals actively practicing within dental clinics or hospitals.

**Patients:** A consecutive sampling method was employed to enroll patients seeking dental care across different demographics and treatment needs. Inclusion criteria encompassed individuals aged 18 years and above seeking dental treatment during the study period.

**Sample Size:** The sample size was determined using a power analysis considering a confidence level of 95% and an effect size based on previous literature regarding COVID-19 variant awareness

among healthcare professionals and patients. A total of 300 dental professionals and 500 patients were targeted for inclusion in the study.

## DATA COLLECTION

**Surveys:** A structured questionnaire was designed for both dental professionals and patients, encompassing demographic information, general knowledge about COVID-19 variants, specific awareness of the JN1 variant, perceived risk, and infection control practices.

**Interviews:** Semi-structured interviews were conducted with a subset of participants from each group to delve deeper into their perspectives, concerns, and suggestions regarding the JN1 variant. Interviews were audio-recorded and transcribed for qualitative analysis.

**Procedure:**

Ethical approval was obtained from the relevant institutional review board before commencing the study.

Participants were recruited through flyers, email invitations, and direct contact within dental clinics. Informed consent was obtained from all participants before their inclusion in the study.

Surveys were administered either in-person or electronically based on participant preference.

Interviews were scheduled separately with consenting participants, ensuring confidentiality and privacy during discussions.

Data collection included both closed-ended responses from surveys and thematic analysis of qualitative interview transcripts.

Data analysis involved descriptive statistics for survey responses and thematic coding for qualitative data using qualitative analysis software.

## Data Analysis

Quantitative data were analyzed using statistical software [Statistical Package for the Social Sciences (SPSS)] to generate descriptive statistics, frequencies, and inferential analyses (e.g., chi-square tests) to compare awareness levels between the two groups.

Qualitative data from interviews underwent thematic coding and analysis to identify recurring themes, patterns, and divergent viewpoints regarding the JN1 variant.

**Limitations:** Potential limitations of the study included the reliance on self-reported data, the generalizability of findings limited to the study population, and the possibility of response bias.

## RESULTS

The study aimed to evaluate the awareness, perceptions, and practices regarding the JN1 variant among dental professionals and patients, as indicated in Tables 1-4.

### Demographic Characteristics (Table 1)

Both dental professionals and patients participated in the study, reflecting a diverse range of ages and genders. Dental professionals had a slightly younger average age (34 years) compared to patients (42 years). Gender distribution was relatively balanced across both groups, with 45% male and 55% female dental professionals, while patients comprised 40% male and 60% female.

### Awareness of JN1 Variant (Table 2)

The findings indicated a higher awareness of the JN1 variant among dental professionals compared to patients. Specifically, 85% of dental professionals were aware of the JN1 variant, whereas only 62% of patients demonstrated awareness. Additionally, dental professionals exhibited greater knowledge regarding the transmission (78%), severity (62%), and impact on vaccination efficacy (70%) of the JN1 variant compared to patients, whose awareness levels were comparatively lower.

### Perceived Risk and Concerns (Table 3)

Both groups expressed varying levels of concern regarding the JN1 variant. Dental professionals generally exhibited higher levels of concern across multiple aspects, rating the risk of transmission (4.2), severity of illness (3.8), efficacy of preventive measures (4.5), and impact on dental practice (4.1) higher on a scale of 1-5 compared to patients. Patients, while expressing concerns, indicated slightly lower levels of worry across these parameters.

### Infection Control Practices (Table 4)

Regarding infection control practices, dental professionals consistently demonstrated higher adherence compared to patients. The majority of dental professionals reported high adherence to mask-wearing (98%), hand hygiene (96%), disinfection protocols (92%), and physical distancing (85%). In contrast, patients showed relatively lower adherence rates, with percentages notably lower across all listed infection control practices.

### Interpretation of Findings

The findings reveal a noticeable discrepancy in the awareness levels of the JN1 variant between dental professionals and patients. Dental professionals exhibited a higher understanding of the variant's characteristics and potential implications, aligning with their profession's emphasis on infection control and continuous education.

Furthermore, the study highlighted the differing levels of concern and adherence to infection control measures between the two groups. Dental professionals, being more cognizant of the risks associated with the JN1 variant, demonstrated greater compliance with recommended infection control practices compared to patients.

### Demographic Characteristics

**Table 1: Demographic Characteristics of Study Participants**

Participant Group	Age (years) (Mean ± SD)	Gender (Male/Female) (%)	Occupation
Dental Professionals	34 ± 6.2	45/55	Dentists, Dental Hygienists, Dental Assistants
Patients	42 ± 8.1	40/60	Various professions, seeking dental treatment

### Awareness of JN1 Variant

**Table 2: Awareness of JN1 Variant Among Dental Professionals and Patients**

Question	Response (%) among Dental Professionals	Response (%) among Patients
Aware of JN1 variant	85%	62%
Knowledge about transmission	78%	55%
Understanding of severity	62%	40%
Impact on vaccination efficacy	70%	48%

### Perceived Risk and Concerns

**Table 3: Perceived Risk and Concerns Regarding JN1 Variant**

Concern	Level of Concern (Scale: 1-5) among Dental Professionals	Level of Concern (Scale: 1-5) among Patients
Risk of transmission	4.2	3.6
Severity of illness	3.8	3.0
Efficacy of preventive measures	4.5	3.9
Impact on dental practice	4.1	3.5

### Infection Control Practices

**Table 4: Infection Control Practices Implemented by Dental Professionals and Patients**

Practice	Adherence (%) among Dental Professionals	Adherence (%) among Patients
Mask-wearing	98%	85%
Hand hygiene	96%	78%
Disinfection protocols	92%	70%
Physical distancing	85%	60%

## DISCUSSION

The study investigated the awareness, perceptions, and practices related to the JN1 variant among dental professionals and patients, revealing noteworthy disparities between the two groups.

### Awareness Discrepancies

The findings echoed previous research highlighting a substantial gap in the awareness of emerging COVID-19 variants between healthcare professionals and the general population [6]. Consistent with these observations, our study indicated a significantly higher awareness level among dental professionals (85%) compared to patients (62%) regarding the JN1 variant. This divergence in awareness levels could be attributed to the nature of dental professionals' training, their routine exposure to infection control protocols, and continuous education within healthcare settings [7].

### Implications for Infection Control

The study's findings also underscored the importance of awareness in influencing infection control practices. Dental professionals, with their heightened awareness of the JN1 variant, demonstrated significantly higher adherence to recommended infection control measures compared to patients. These findings align with previous studies suggesting that increased awareness among healthcare providers positively impacts the implementation of infection control protocols [8].

### Patient Education and Communication Strategies

The disparities in awareness and adherence to infection control practices emphasize the need for targeted educational interventions aimed at patients within dental care settings. Effective communication strategies should be implemented to bridge the gap in knowledge between dental professionals and patients regarding emerging variants like JN1. These strategies could include informative pamphlets, digital media campaigns, and direct discussions during patient visits, empowering patients with essential knowledge to enhance their understanding and encourage compliance with infection control measures [9].

### Enhancing Patient-Centered Care

Improving patient awareness and understanding of variant-specific risks can contribute to a more patient-centered approach in dental practice. By involving patients in discussions about emerging variants and their implications, dental professionals can foster a sense of shared decision-making and mutual responsibility in infection control within the healthcare setting [10].

### Study Limitations and Future Directions

Despite the valuable insights gained, this study has limitations. The sample size, though adequate, may not fully represent diverse geographic or demographic characteristics. Future research could explore a broader spectrum of dental settings and geographic regions to capture a more comprehensive understanding of variant awareness among dental professionals and patients.

## CONCLUSION

In conclusion, this study highlights the significant gap in awareness of the JN1 variant between dental professionals and patients. Addressing this gap through targeted educational interventions and improved communication strategies is vital to enhance infection control practices and promote a more informed patient population within dental care settings.

## REFERENCES

1. Looi MK. Covid-19: WHO adds JN. 1 as new variant of interest.

2. Altamimi I, Alabdulkarim IM, Alhumimidi AS, Albabtain MA, Temsah MH, Alabdulkarim III IM. Navigating Novel Uncertainties of COVID-19: The Rise of the JN. 1 Variant. *Cureus*. 2024 Jan 2;16(1).
3. Yameny AA. The COVID-19 JN. 1 variant diagnosed in Egypt. *Journal of Medical and Life Science*. 2023 Dec 1;5(4):318-21.
4. Amalia H. JN. 1 COVID 19: Variant of interest. *Jurnal Biomedika dan Kesehatan*. 2023 Dec 31;6(3).
5. Arshad Z, Nazareth J, Pareek M. Learning to live with covid-19: testing, vaccination, and mask wearing still play a key part in managing the pandemic. *bmj*. 2023 Dec 14;383.
6. Malik YA. Properties of Coronavirus and SARS-CoV-2. *Malays J Pathol*. 2020 Aug;42(3):3–11. [PubMed: 32612716]
7. Park SE. Epidemiology, virology, and clinical features of severe acute respiratory syndrome - coronavirus-2 (SARS-CoV-2; Coronavirus Disease-19). *Clin Exp Pediatr*. 2020;63(4):119–24.
8. Khan MU, Shah S, Ahmad A, Fatokun O. Knowledge and attitude of healthcare workers about Middle East Respiratory Syndrome in multispecialty hospitals of Qassim, Saudi Arabia. *BMC Public Health*. 2014;14(1):1281.
9. Alshammari TM, Altebainawi AF, Alenazi HA, et al. Importance of Public Awareness and Practices in COVID-19 Pandemic. *SSRN Electron J*. 2020. doi:10.2139/ssrn.3596000
10. Levin-Zamir D, Bertschi I. Media Health Literacy, eHealth Literacy, and the Role of the Social Environment in Context. *Int J Environ Res Public Health*. 2018 Jul;15(8):1643.