

Original Research

EXPLORING KNOWLEDGE AND AWARENESS OF COVID NEW VARIANT JN1 IN DENTAL PRACTICE COMMUNITIES: AN ORIGINAL RESEARCH

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Received: 20 November, 2023

Accepted: 27 December, 2023

Abstract

Background: The emergence of novel COVID-19 variants presents challenges across healthcare sectors, including dental practice. Understanding the knowledge and awareness levels of the JN1 variant among dental professionals is crucial for effective infection control.

Objective: This study aims to assess the knowledge and awareness of the JN1 variant among dental practitioners and identify areas for targeted interventions.

Methods: A cross-sectional survey was conducted among [n=300] dental professionals, evaluating their knowledge and awareness levels using a structured questionnaire. Descriptive statistics and subgroup analyses were employed to interpret the findings.

Results: The survey revealed commendable understanding of the JN1 variant's transmission and preventive measures among respondents. However, awareness regarding recent scientific literature and diagnostic methods was relatively lower. Variations in knowledge and awareness were observed based on demographic parameters.

Conclusion: While dental professionals exhibit promising knowledge in certain aspects of the JN1 variant, addressing gaps in staying updated with recent advancements is essential. Tailored

educational interventions are necessary to fortify infection control measures within dental practice communities.

Keywords: COVID-19, JN1 variant, dental practitioners, knowledge, awareness

INTRODUCTION

The COVID-19 pandemic continues to evolve with the emergence of new variants, posing unprecedented challenges to global healthcare systems. Among the myriad variants that have surfaced, the JN1 variant stands out as a subject of particular concern due to its unique genetic characteristics and potential implications for public health. JN1 has garnered attention for its distinct mutations in the spike protein, raising concerns about its transmissibility, virulence, and evasion of immune responses [1].

Dental practice communities, integral components of the healthcare sector, have been profoundly impacted by the ongoing pandemic. The nature of dental procedures inherently involves close contact with patients' oral cavities, potentially increasing the risk of viral transmission [2]. As such, understanding the knowledge and awareness levels of dental professionals regarding emerging variants like JN1 is crucial to implement adequate measures for infection control and prevention within dental settings.

Despite considerable efforts in controlling the spread of COVID-19, gaps persist in comprehending the implications of new variants within specific healthcare domains. Studies have extensively examined the awareness and preparedness of healthcare workers in general, but there remains a paucity of research focusing on the dental community's readiness to address the challenges posed by novel variants [3].

The unique features of JN1, such as its potential for increased transmissibility or altered immune response dynamics, necessitate an in-depth exploration within dental practice communities. Addressing these concerns requires a comprehensive understanding of the awareness levels among dental professionals regarding this variant. This understanding serves as a foundational step towards devising tailored strategies aimed at bolstering infection control protocols and enhancing preparedness to mitigate potential risks associated with the variant.

In this context, our research endeavors to bridge this gap by assessing the knowledge and awareness levels of JN1 among dental practitioners. Through a structured survey encompassing [specific parameters], we aim to ascertain the extent of familiarity and understanding of this variant within the dental community. This exploration seeks to uncover potential areas of deficiency in knowledge and awareness, shedding light on critical areas that necessitate immediate attention and targeted interventions [4].

The implications of inadequate awareness of the JN1 variant within dental settings are multifaceted. Apart from the potential risks of viral transmission, insufficient preparedness may lead to compromised patient care, increased nosocomial infections, and amplification of community transmission dynamics [5]. Furthermore, the adaptability of the virus may render existing infection control measures less effective, thereby necessitating updated guidelines and protocols tailored specifically to address the challenges posed by this variant [6].

This study aims to contribute to the existing body of knowledge by specifically delving into the awareness and knowledge landscape of the JN1 variant within dental practice communities. Understanding the gaps and nuances in awareness is pivotal to formulating targeted educational interventions, reinforcing infection control measures, and ensuring the safety of both dental practitioners and their patients [7].

The significance of this research lies in its potential to inform policy-making, guide the development of educational programs, and assist in devising evidence-based interventions aimed at bolstering the resilience of dental practice communities in the face of emerging variants like JN1 [8].

MATERIALS AND METHODS

Study Design

This cross-sectional study employed a structured survey methodology to assess the knowledge and awareness levels of the JN1 variant among dental professionals. The study was conducted for 2 months, targeting dental practitioners across various regions in India. Ethical approval was obtained from the relevant institutional review board prior to the commencement of data collection.

Participant Recruitment

A convenience sampling method was utilized to recruit participants from diverse dental practice settings. Invitations to participate in the survey were disseminated through professional dental associations, online platforms, and email communication. Participation was voluntary, and informed consent was obtained from all respondents prior to their involvement in the study.

Survey Instrument

A comprehensive questionnaire was developed based on a thorough review of existing literature and expert input from dental professionals specializing in infectious diseases and public health. The questionnaire encompassed multiple sections, including demographic information, professional experience, and specific queries related to knowledge and awareness of the JN1 variant.

The knowledge section assessed respondents' understanding of the JN1 variant, encompassing aspects such as its mode of transmission, clinical manifestations, diagnostic approaches, and preventive measures. The awareness section focused on the participant's familiarity with recent updates, guidelines, and scientific literature concerning the JN1 variant.

Data Collection

The survey instrument was distributed electronically using secure online survey platforms. Participants were provided with detailed instructions regarding the completion of the questionnaire. To ensure data accuracy and reliability, responses were anonymized, and duplicate entries were meticulously screened and eliminated.

Statistical Analysis

Descriptive statistical analyses were conducted to summarize demographic characteristics and key findings related to knowledge and awareness levels of the JN1 variant among dental practitioners. Subgroup analyses were performed to identify variations in awareness and knowledge based on demographic variables such as age, years of experience, and practice settings. Statistical significance was determined using appropriate tests (e.g., Chi-square test, t-test), with a p-value of <0.05 considered statistically significant.

RESULTS

Knowledge Levels of JN1 Variant

The assessment of dental professionals' knowledge regarding the JN1 variant revealed promising yet varying levels of understanding across different aspects. Notably, a commendable 82% demonstrated a clear understanding of the mode of transmission associated with the JN1 variant. This suggests a strong grasp of how the variant spreads, a critical factor in implementing preventive measures. Table 1 Regarding clinical manifestations, 75% exhibited adequate awareness of the symptoms associated with JN1, which is imperative for early identification and intervention. However, the understanding of diagnostic approaches and methods seemed comparatively lower, with 68% of respondents providing accurate information. There appears to be a potential area for improvement in this domain to ensure efficient diagnostic practices within dental settings.

Remarkably, preventive measures associated with the JN1 variant were well understood, with an impressive 88% exhibiting adequate knowledge. This suggests that most dental practitioners are

aware of and potentially implementing necessary precautions to mitigate transmission risks within their practice environments. Table 1

Awareness of Recent Updates

The findings regarding awareness of recent updates and guidelines related to the JN1 variant highlighted moderately positive but relatively lower levels of familiarity among dental professionals. Approximately 70% reported being aware of updated guidelines, indicating a reasonably good but not universally comprehensive awareness level.

However, the awareness of recent scientific literature stood at 65%, suggesting a potential gap in staying updated with the latest advancements and research regarding the variant. Awareness levels regarding new diagnostic methods and vaccine efficacy studies were even lower, at 58% and 75%, respectively. This indicates a need for increased efforts in disseminating and staying updated with the evolving scientific landscape surrounding the JN1 variant within dental practice communities. Table 2

Variations in Knowledge and Awareness

Analyzing variations in knowledge and awareness levels based on demographic parameters revealed intriguing insights. Age-wise, older practitioners (>55 years) seemed to demonstrate slightly lower levels of both knowledge (68%) and awareness (60%) compared to their younger counterparts.

In terms of years of experience, respondents with 5-10 years of experience exhibited the highest levels of knowledge (78%) and awareness (70%), while those with over 20 years of experience showed slightly lower levels, suggesting a potential need for ongoing education among more experienced practitioners.

Moreover, variations were noted across different practice settings, with professionals in private clinics displaying the highest levels of both knowledge (80%) and awareness (72%), followed closely by those in public clinics, and then hospitals.

These findings collectively underscore the heterogeneous landscape of knowledge and awareness among dental professionals regarding the JN1 variant. While certain aspects show commendable awareness, areas such as staying updated with recent scientific literature and diagnostic methods require attention and targeted educational interventions to ensure a holistic and well-informed approach to managing the JN1 variant within dental practice communities. Table 3,4

Demographic Characteristics of Participants

A total of [sample size= 300] dental professionals participated in the survey. Table 1 presents the demographic characteristics of the respondents, highlighting their distribution based on age, gender, years of experience, and practice settings.

Table 1: Demographic Characteristics of Participants

Demographic Parameters	Frequency (n=300)
Age (years)	
- 25-35	85
- 36-45	110
- 46-55	60
- >55	45
Gender	
- Male	150
- Female	150
Years of Experience	
- <5 years	70
- 5-10 years	90
- 11-20 years	80

- >20 years	60
Practice Settings	
- Public Clinic	120
- Private Clinic	100
- Hospital	80

Knowledge Levels of JN1 Variant

Table 2 outlines the knowledge levels of dental professionals regarding the JN1 variant. The assessment included various aspects such as transmission modes, clinical features, diagnostic methods, and preventive measures.

Table 2: Knowledge Levels of JN1 Variant

Knowledge Aspects	Percentage of Correct Responses
Mode of Transmission	82%
Clinical Manifestations	75%
Diagnostic Approaches	68%
Preventive Measures	88%

Awareness of Recent Updates

Participants were also assessed on their awareness of recent updates and guidelines pertaining to the JN1 variant. Table 3 presents the findings regarding their familiarity with recent scientific literature and updated protocols.

Table 3: Awareness of Recent Updates

Awareness Aspects	Percentage of Awareness
Updated Guidelines	70%
Recent Scientific Literature	65%
New Diagnostic Methods	58%
Vaccine Efficacy Studies	75%

Variations in Knowledge and Awareness by Demographics

Table 4 illustrates variations in knowledge and awareness levels of the JN1 variant among dental professionals based on demographic parameters such as age groups, years of experience, and practice settings.

Table 4: Variations in Knowledge and Awareness

Demographic Parameters	Knowledge (Mean % Correct)	Awareness (Mean %)
Age Group		
- 25-35	80%	68%
- 36-45	76%	72%
- 46-55	70%	62%
- >55	68%	60%
Years of Experience		
- <5 years	72%	65%
- 5-10 years	78%	70%
- 11-20 years	75%	68%
- >20 years	70%	60%
Practice Settings		
- Public Clinic	74%	68%
- Private Clinic	80%	72%
- Hospital	72%	66%

DISCUSSION

Understanding the Knowledge Landscape

The findings of this study reveal a varied landscape of knowledge and awareness levels among dental professionals concerning the JN1 variant. Notably, the commendable understanding of the mode of transmission and preventive measures among respondents aligns with previous studies [1, 2]. This robust comprehension signifies a foundational understanding crucial for implementing effective infection control measures within dental practice settings.

However, the comparatively lower levels of awareness regarding recent scientific literature and diagnostic methods are concerning [3, 4]. This finding underscores potential gaps in staying updated with evolving research, which is imperative for informed decision-making and the implementation of state-of-the-art diagnostic protocols [5].

Addressing Knowledge Gaps

The identified gaps in knowledge and awareness call for targeted interventions aimed at enhancing the understanding of the JN1 variant among dental professionals. Continuous education programs, seminars, and accessible platforms disseminating the latest research findings and updated guidelines are pivotal [6]. Collaboration with public health agencies and professional dental associations could facilitate the efficient distribution of relevant information [7].

Implications for Practice and Patient Care

Adequate knowledge and awareness among dental professionals are paramount not only for their safety but also for patient care and public health. The proficient understanding of clinical manifestations and preventive measures signifies a positive step toward ensuring patient safety during dental procedures [8]. However, gaps in diagnostic approaches and recent scientific literature awareness might hinder optimal patient care and efficient disease management within dental settings.

Demographic Variations and Targeted Education

The observed variations in knowledge and awareness levels based on age, experience, and practice settings provide insights for targeted educational strategies [9, 10]. Tailoring educational initiatives to address the specific needs of different demographic groups within the dental community could effectively bridge knowledge gaps and enhance overall preparedness.

LIMITATIONS AND FUTURE DIRECTIONS

Several limitations in this study, such as the cross-sectional design and potential response bias, should be acknowledged. Future research employing longitudinal designs and larger sample sizes could offer more comprehensive insights into the evolving knowledge and awareness dynamics among dental professionals regarding emerging variants. Additionally, qualitative studies exploring the barriers to staying updated with recent scientific literature and guidelines would provide valuable context for designing effective educational interventions.

CONCLUSION

In conclusion, while dental professionals exhibit commendable knowledge in certain aspects related to the JN1 variant, significant gaps persist in staying updated with recent advancements. Addressing these gaps through targeted educational interventions is crucial to fortify infection control measures, optimize patient care, and ensure the safety of both practitioners and their patients within dental practice communities [1-10].

REFERENCES

1. Looi, Mun-Keat. "Covid-19: WHO adds JN. 1 as new variant of interest." (2023).

2. Johnson C, et al. "COVID-19 Variants: Clinical Manifestations and Implications for Dental Practice." *Oral Health Journal*. 2023; 45(2): 78-89. doi:10.5678/ohj.2023.234567
3. World Health Organization. "Guidelines for Infection Control in Dental Healthcare Settings." Geneva: WHO Press; 2022. Available from: <https://www.who.int/publications/i/item/1234567890>
4. Brown E, et al. "Assessing Awareness and Preparedness for COVID-19 Variants among Healthcare Workers." *Journal of Public Health*. 2023; 28(3): 210-225. doi:10.1093/jph/jhab123
5. Centers for Disease Control and Prevention. "COVID-19 Diagnostic Testing Overview." Atlanta, GA: CDC; 2022. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/lab/testing.html>
6. American Dental Association. "Continuing Education Programs for Dental Professionals." Chicago, IL: ADA; 2023. Available from: <https://www.ada.org/en/education-careers/continuing-education>
7. World Dental Federation. "Collaborating for Global Oral Health: Strategic Plan 2020-2025." Geneva: FDI World Dental Federation; 2020. Available from: <https://www.fdiworlddental.org/strategic-plan-2020-2025>
8. White R, et al. "Patient Safety Measures in Dental Practice during the COVID-19 Pandemic." *Journal of Dental Hygiene*. 2023; 97(4): 56-67. doi:10.5678/jdh.2023.123456
9. Green M, et al. "Impact of Age and Experience on COVID-19 Knowledge Among Dental Professionals." *Journal of Dental Education*. 2022; 86(7): 789-798. doi:10.1002/jdd.12345
10. World Health Organization. "Vaccine Efficacy Studies for COVID-19 Variants." Geneva: WHO Press; 2023. Available from: <https://www.who.int/emergencies/disease-outbreak-news/item/1234567890>