

Influenza Vaccination Perceptions and Attitudes among Georgian Dentists: A Cross-Sectional Analysis

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Abstract

Background: Influenza vaccination remains a cornerstone of public health initiatives aimed at curbing the spread of infectious diseases. Despite the known benefits, vaccine hesitancy persists among healthcare professionals, including dentists, due to concerns about vaccine efficacy and safety. The attitudes of dentists towards influenza vaccination are influenced by a variety of factors, including perceived risks, misconceptions, and personal beliefs.

Aim: This study aimed to explore the attitudes and perceptions of Georgian dentists towards influenza vaccination, examining the factors influencing their decision-making and the overall vaccination rates within this group.

Methods: A cross-sectional survey was conducted involving 2,900 certified dentists in Georgia. Data were collected on their vaccination status, attitudes towards influenza vaccination, and reasons for acceptance or hesitancy. The survey assessed demographic variables, professional experience, and self-reported knowledge about influenza vaccines.

Results: The findings revealed that 16% of the surveyed dentists received an influenza vaccine in the current season. Of the unvaccinated dentists, 30% cited safety concerns, and 21% did not perceive influenza as a significant threat. Experience levels were inversely correlated with vaccine confidence; dentists with less than five years of experience were more likely to get vaccinated compared to their more seasoned counterparts. Additionally, 24% of respondents deemed the vaccine less effective, and only 18% supported mandatory vaccination policies. Geographical trends indicated that the majority of non-vaccinated dentists were from the Imereti and Samegrelo-Zemo Svaneti regions.

Conclusions: The study highlights the presence of vaccine hesitancy among dentists in Georgia, with a notable portion exhibiting skepticism towards the flu vaccine's effectiveness and safety. Despite low vaccination rates, the absence of adverse events reported in the past decade provides a basis for addressing safety concerns. Educational interventions tailored to address specific misconceptions and regional disparities are necessary to improve vaccination rates. The research underscores the need for ongoing dialogue and education to bolster confidence in influenza vaccination, thereby enhancing public health outcomes. (TCM-GMJ June 2024; 9 (1):P14-P17)

Keywords: Influenza Vaccination, Vaccine Hesitancy, Dentists, Immunization, Public Health, Vaccination

Introduction

Influenza, widely recognized as a significant health challenge, poses a substantial burden on global public health systems and societies. Annually, influenza results in approximately 1 billion cases, including 3–5 million severe cases, and contributes to 290,000 to 650,000 respiratory deaths worldwide¹. These figures highlight the need for effective prevention strategies, with vaccination being the most crucial².

The role of dentists in public health, particularly in preventive care, is often underemphasized. As primary healthcare providers who frequently interact with patients,

dentists are strategically positioned to advocate for health promotion activities, including vaccination².

Their unique exposure to respiratory pathogens like the influenza virus through close patient contact necessitates not only self-protection but also the safeguarding of their patients from potential transmission³⁻⁵.

However, the acceptance of influenza vaccination among healthcare professionals, including dentists, is hindered by vaccine hesitancy and misconceptions about vaccine efficacy and safety. These barriers contribute to suboptimal vaccination coverage among healthcare workers, thereby weakening the healthcare system's response to respiratory illnesses⁶⁻⁸.

Healthcare workers' attitudes towards vaccination are shaped by various factors, including personal beliefs, knowledge about vaccines, perceived risks and benefits, and a sense of professional responsibility towards patient care⁹⁻¹¹.

The history of influenza vaccination dates back several

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decades, marking it as one of the older vaccines in use¹². Initially developed to counter seasonal flu outbreaks, the vaccine has evolved in composition and technology over the years^{13, 17}. Despite its long-standing presence in preventive medicine, influenza vaccination still faces challenges in acceptance due to concerns about side effects and contraindications^{14, 15}. Common side effects are generally mild and include soreness at the injection site, headaches, and low-grade fever. Contraindications are primarily severe allergic reactions to the vaccine or its components¹⁶. Understanding the history and current perception of the influenza vaccine is crucial in addressing hesitancy, especially among healthcare professionals like dentists, whose role in public health is increasingly recognized¹⁷.

In Georgia, the influenza vaccination drive has seen significant adherence among medical personnel following the 2019 mandate for their immunization. The National Center for Disease Control and Public Health has documented a successful vaccination campaign, with commendable compliance from healthcare workers and other vulnerable groups¹⁸. The center's records also show an impressive safety profile, noting a negligible incidence of adverse events related to vaccinations among medical staff over the past decade, with no medical personnel involved in the two recorded events¹⁹. Moreover, the deployment of a quadrivalent influenza vaccine in the 2021-2022 season led to widespread immunization, with 197,600 individuals vaccinated, indicating effective public health planning and execution^{20,21}.

This study aims to delve into the attitudes and perceptions of dentists towards influenza vaccination²². Understanding the factors influencing their decision-making is crucial for developing targeted interventions, educational programs, and policy initiatives that enhance vaccine acceptance and coverage among dental professionals²³. The urgency of this issue has been further highlighted by recent global health crises, such as the COVID-19 pandemic, underscoring the importance of vaccination and infection control in healthcare settings²⁴. This research contributes to a comprehensive understanding of vaccine attitudes within a crucial segment of the healthcare workforce, ultimately aiming to bolster public health and ensure patient safety.

Methods

Study Purpose and Framework

In this analytical cross-sectional study, we probed the perceptions and knowledge level of dentists regarding influenza immunizations within the compulsory vaccination framework enforced in Georgia post-2019. Guided by literature, we postulate that gaps in information and circulating myths might influence reluctance and adverse opinions about obligatory flu immunizations.

Sampling and Information Gathering

We concentrated on 2,900 certified, practicing dentists, as listed by Georgia's National Statistics Office in 2022. Selection criteria hinged on their active engagement in dentistry, with ages spanning from 25 to 60 years. Partici-

pants' experience was classified into four ranges: less than a year, between one to five years, six to ten years, and over a decade. A stratified random sampling technique was employed, engaging 10% of the listed dentists, which equated to 290 individuals. From these, we gathered 215 complete responses that were included in the subsequent data analysis.

The investigation covered diverse regions such as Samegrelo, Imereti, Kakheti, and Tbilisi, ensuring a broad representation of the dental sector by stratifying Tbilisi participants by district.

Survey Instrumentation

We utilized a structured questionnaire as the primary tool to gauge dentists' stance on flu immunizations. The questionnaire, divided into three segments, collated demographic details, gauged the understanding of the mandatory flu immunization policy, and explored the participants' attitudes towards it. This 16-item tool employed both closed and open-ended questions and was disseminated in printed form and digitally to the Georgian Dental Association members.

Ethical Assurance

We ensured ethical compliance throughout the research process, including obtaining approval from the Institutional Review Board (IRB) of the Health Research Union prior to conducting the study. The IRB approval process involved a comprehensive review of the research protocol, ensuring adherence to ethical guidelines and safeguarding participants' rights and well-being. Informed consent was obtained from all participants, ensuring voluntary participation and providing assurances of anonymity and confidentiality. Personal identifiers were not collected during data collection to maintain participant anonymity and confidentiality, demonstrating our commitment to upholding ethical standards in research.

Analytical Procedure

Data analysis was performed using SPSS, where we applied descriptive statistics, chi-square tests for population homogeneity, and t-tests for mean comparisons. The analysis was quantitative, aiming to impartially assess the knowledge, attitudes, and practices of the dental professionals concerning flu vaccination. The sample of 215 dentists was demographically reflective of the wider dental community.

Statistical Considerations

A 95% confidence interval was calculated for the validation of the research, with a margin of error established at $\pm 6.68\%$. The interval, which extends from 43.32% to 56.68%, was determined by employing a Z-score corresponding to a 95% confidence level. These calculations substantiate the statistical rigor and practical significance of the study's findings, presuming maximal variability in the response proportion.

Results and discussion

Demographic analysis of the participants reflected gender distribution within Georgia's dental sector, with females constituting 68% and males 32%. The experience

levels among respondents varied, with the largest group (53.7%) practicing for over ten years, followed by 22.8% with six to ten years, 16.2% with one to five years, and the smallest group (7.3%) with less than one year's experience.

Regarding influenza vaccination education, 54% of dentists reported having received formal instruction, whereas the other 46% had not. Self-assessment of vaccine knowledge showed that 27% of dentists rated their understanding as high, 68% as moderate, and 5% as low. Of those with formal education, only 21% considered their level of awareness to be high.

Vaccination rates for the current flu season stood at 16% among the study's dental professionals. Within the group that did not receive the flu vaccine, 30% cited safety concerns as their reason for abstention (See table 1.). Other reasons for not vaccinating included the belief that the flu or the vaccine was not a serious health concern (21%), time constraints (18%), already having had the flu (9%), or a belief that they were unlikely to contract it (9%). Ten percent avoided vaccination due to apprehension about side effects or aggravation of pre-existing health issues, with allergies (46%) and chronic conditions (23%) being the most frequently mentioned concerns.

Table 1: Vaccination Rates and Reasons for Non-Vaccination Among Georgian Dental Professionals

Category	Percentage
Vaccination Rate for Current Season	16%
Not Vaccinated (Safety Concerns)	30%
Not Vaccinated (Belief in Insignificance)	21%
Not Vaccinated (Time Constraints)	18%
Not Vaccinated (Previous Influenza)	9%
Not Vaccinated (Unlikely to Contract)	9%
Not Vaccinated (Side Effects/Health Issues)	10%
Not Vaccinated (Allergies)	46% (Among not vaccinated)
Not Vaccinated (Chronic Conditions)	23% (Among not vaccinated)

The data also indicated that professional experience inversely correlated with confidence in the vaccine. Dentists with less than five years of experience showed a higher acceptance and fewer doubts about the vaccine's safety and efficacy. The most common reason for vaccine refusal in this group (72%) was lack of time or pre-vaccination influenza infection.

Perceptions of the flu vaccine's effectiveness varied, with 24% considering it less effective and 6% viewing it as completely ineffective. When recommending the vaccine to peers, 27% did so consistently, while 14.2% never made such recommendations. Among the latter group, 37.5% held critical views on the vaccine's effectiveness and safety.

The stance on mandatory vaccination revealed that only 18% supported it, 25% were opposed, and the majority held neutral views that fluctuated with their personal expe-

riences of the disease and the vaccine. If mandatory vaccination were to be implemented, 52% believed the hepatitis B vaccine should be included, with 25.7% advocating for both the influenza and hepatitis B vaccines to be mandatory for healthcare workers. In contrast, 48% rejected any compulsory vaccination for dental personnel.

Regional trends showed that 68% of dentists who forwent vaccination were from the Imereti and Samegrelo-Zemo Svaneti areas. The data suggested that opposition to mandatory vaccination was more prevalent among those with longer work tenure, with 19% in the up to five years category, 24% with six to ten years, and 57% with more than eleven years of experience opposing it.

These findings, statistically significant with a p-value of 0.05, shed light on the varying attitudes and practices regarding flu vaccination within the dental community, delineated by both regional and experiential factors.

The reluctance to accept influenza vaccination among dentists in Georgia is a reflection of a broader hesitancy within the healthcare sector, often based on concerns about potential side effects and allergies. This hesitancy is met with reassurance from the National Center for Disease Control and Public Health of Georgia, which has recorded no adverse events related to influenza vaccination among medical personnel in the last decade²⁵. Such a record of safety provides a counterpoint to vaccine anxieties, underscoring the importance of disseminating this positive message to mitigate reservations within the medical community.

Adding to the safety narrative, extensive research, including a review by Mistry et al., 2023, has shown that while side effects are possible, they are usually mild and transient²⁶. This is further supported by the consensus from major health organizations on the negligible risk of egg-related allergic reactions from the flu vaccine²⁷.

The severity of influenza should not be underestimated. The illness can lead to significant complications, including hospitalization and mortality. The annual flu vaccine remains a critical preventative tool, with its safety profile robustly supported by large-scale studies, such as those reviewed by the CDC, confirming no elevated risk for adverse outcomes, even among pregnant individuals.

The reluctance to embrace the influenza vaccine observed among more seasoned dentists in our study might be influenced by longstanding beliefs and the changing landscape of vaccine information. Conversely, the greater receptivity seen among those with less experience may reflect recent advancements in medical training and a shift towards evidence-based healthcare.

The geographic differences in vaccine uptake noted in the study underscore the necessity for public health strategies tailored to specific communities. Despite some support for mandatory vaccination policies, particularly for the hepatitis B vaccine, there is no clear consensus among dental professionals, indicating the need for further dialogue and education within the profession.

To address the complex issue of vaccine hesitancy, a multifaceted strategy is required—one that encompasses

continuous education, open communication about vaccine safety, and an acknowledgment of individual clinical judgments. Enhancing the dental community's understanding of influenza's risks, coupled with the reassurance of the vaccine's safety, could lead to improved vaccination rates and better overall public health outcomes

Conclusion

The study of influenza vaccination among dentists in Georgia has shed light on the multifarious attitudes within the dental community towards this important public health intervention. The finding that a notable segment of dental professionals exhibits hesitancy towards the influenza vaccine, largely due to concerns over potential side effects and allergies, calls for increased educational outreach and communication efforts. The absence of adverse events reported by the National Center for Disease Control and Public Health of Georgia offers a counterbalance to these concerns and should be leveraged to bolster confidence in the safety of the vaccine.

Despite the acknowledged safety of the vaccine and the risks posed by influenza itself, there is a clear need for tailored strategies to address the specific apprehensions of healthcare providers. These strategies should include the dissemination of evidence-based information and the fostering of discussions that respect individual clinical judgments while emphasizing the collective benefits of vaccination.

Furthermore, the regional disparities and the correlation between professional experience and vaccine confidence uncovered in this study highlight the complexity of vaccine hesitancy. It is imperative that future policies and programs consider these nuances to enhance vaccine uptake.

Ultimately, this study contributes to our understanding of vaccine hesitancy in a key segment of the healthcare workforce. The insights gained underscore the importance of a nuanced approach in addressing vaccine hesitancy, one that not only informs but also engages healthcare providers in a dialogue about the critical role of vaccinations in ensuring public health and safety.

Conflict of Interest

The authors declared that there is no conflict of interest.

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