

## Digitalization in Dentistry: Ethical Issues

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### ABSTRACT:

As digitalization is rapidly making its way into the healthcare sector, it is simultaneously making a significant impact on the oral healthcare system as well. The dental industry has recently been booming with newer technology entering the clinics, promising cost efficiency, reduction in labor and better time management. However, new advancements bring new challenges and the need for implementation of a special ethical regulations fit for the current scenario. In this article we will be highlighting the possible ethical issues that come with the new age of dental digitalization.

**Keywords:** Ethics, digitalization, dentistry.

### INTRODUCTION:

According to The American Dental Association (ADA), the ethical code for dentistry consists of five major components that are: justice, veracity, patient autonomy, non-maleficence and beneficence.<sup>1</sup> These are the core values and guidelines that are to be followed by dental practitioners at all times. With the introduction of newer technology, different ethical challenges arise, that need to be resolved in compliance with the ADA norms.

The beginning of digitalization in dentistry started with the introduction of the Internet, where initially patients began comparing different treatment plans and cost, in addition to leaving reviews online for doctors. This led to a necessity for a visible and prominent website and social presence of the doctor being known. This brought in a new set of ethical challenges for practitioners.

In clinics, very few aspects of dental practice remain untouched by technology. Computer-aided design/ computer-assisted manufacturing (CAD-CAM), dental lasers, intra-oral camera, digital diagnosis of caries, tele dentistry, 3D imaging in dentistry are some of the latest innovations in the field. The ethical implications of these tools and devices are in dire need of regulation. The article highlights the possible ethical issues that come with the new age of dental digitalization.

## **DISCUSSION:**

### **DATA SECURITY**

The central question for data security has been a dire concern in the recent times. Few software giants and social media platforms have all been accused of storing and using personal data of users and manipulating it in form of targeted advertisements in the name of “enhanced user experiences”. The consent they take from the user is often frivolous or placed misleadingly in form of location access or tiny font placed on the bottom corner of the document.

The recent hacking of the database at AIIMS Delhi, has compromised the personal data of millions of patients and raised serious questions on the cyber security system in India.<sup>2</sup> Under such circumstances, relying solely on these advancements for data storage is not in the best interest of the practitioner neither the patient and puts the patient’s consent regarding their personal information at risk. This raises a serious ethical risk for the practitioner who could also further be answerable for legal implications of the same.

### **PATIENT- PRACTITIONER RELATIONSHIP**

As newer technology takes over, the interaction time between the patient and their doctor significantly decreases. This can impact the trust between the two as a result of lesser rapport forming time.<sup>3</sup> Moreover, tools and machinery that guide treatment plans can also hamper the trust of the patient as the dental practitioner then becomes questionable if he/ she chooses to go for an alternative or slightly different treatment plan on the basis of their better clinical knowledge. This unnecessary ethical implication both the parties face as a consequence is threat to the ethical principle of justice and veracity.

### **PATIENT AUTONOMY**

Psychological capacity of the patient for giving informed consent and three main components- agency, independence and rationality.<sup>4</sup> Agency is awareness of oneself, having desires and intentions and acting on them. Independence is the absence of influences and the third is rational decision making.<sup>5</sup>

However, as India still lags behind most developed nations on digital literacy, a true informed consent in some areas of work can be difficult to get as the patient cannot rationally consent to something that they do not completely understand. True informed consent, however can only be taken if the patient entirely understands the implications and consequences of the technology about to be applied.<sup>6</sup>

### **TELE - DENTISTRY**

The idea of tele dentistry is providing treatment planning, advice for patients and dental care through online technology instead of direct doctor to patient interaction.<sup>7</sup> It is now a days

being used in a variety of oral health fields, it can be helpful in educating patients, awareness about oral hygiene and need for periodic cleaning, diagnosing caries, oral diseases and providing treatment plans for orthodontic patients.<sup>8</sup> It proved to be a useful tool in the times of COVID where physical contact was restricted. However, in recent times many companies are now misusing the concept, giving rise to ethical concerns.

Companies providing direct to consumer appliances, promising aesthetic and functional benefits for the patients without intervention of a qualified orthodontist can be considered as a violation of the ethical code. For example, a patient with periodontal disease or caries wearing these appliances would make their condition worse without realising.<sup>9</sup>

## CONCLUSION:

Digitalization is becoming an integral part of our lives in all areas. However, digitalization in healthcare and dentistry is something that needs critical evaluation and should be proceeded with caution as precious lives are on the line.

Advancements are a sign of progress in society but can only be considered beneficial when they follow the core ethical values of a profession.

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