



## Medical Ethics in Oral and Maxillofacial Surgery: A Review

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### ABSTRACT

Medical ethics in oral and maxillofacial surgery (OMFS) encompasses the principles of beneficence, non-maleficence, autonomy, and justice, guiding surgeons in delivering ethical care. This review explores the integration of these ethical principles into OMFS practice, emphasizing the importance of informed consent and the professional standards set by the American Board of Oral and Maxillofacial Surgery. Ethical dilemmas, such as the challenges of delegation, patient autonomy, and distributive justice, are discussed, highlighting the need for continuous education and adherence to ethical guidelines. The impact of emerging technologies, particularly artificial intelligence (AI), on ethical practices in OMFS is also examined. AI introduces concerns related to bias, dataset diversity, and the subjective nature of beauty assessments, which must be addressed to ensure equitable patient care. This review underscores the necessity for OMFS practitioners to uphold ethical standards and adapt to evolving challenges, ensuring that patient care remains respectful, fair, and of the highest quality.

**Keywords:** Medical Ethics, Oral and Maxillofacial Surgery, Informed Consent, Beneficence, Non-Maleficence, Autonomy, Justice.

### Introduction

Medical ethics is an applied branch of ethics that examines the practice of clinical medicine and related scientific research. It is grounded in a set of values that healthcare professionals can use when faced with confusion or conflict. These values include respect for autonomy, non-maleficence, beneficence, and justice, which help doctors, care providers, and families develop and pursue a unified treatment plan.<sup>1</sup> It is important to recognize that these four values are not ranked by importance or relevance; they collectively represent the core principles of medical ethics. Medical ethics is especially pertinent in decisions involving involuntary treatment and involuntary commitment.<sup>2</sup> Oral and maxillofacial surgeons are obliged to understand and adhere to the core values and principles outlined in their professional code of ethics. However, challenges such as training deficiencies, conflicts of interest, ineffective regulatory bodies, limited practice opportunities, and a commercialized healthcare market can undermine professional conduct and compromise the specialty's reputation and integrity.<sup>3</sup> Despite the importance of ethics in oral and maxillofacial surgery (OMFS), the field remains understudied. Analyzing contemporary ethical and professional challenges faced by oral and maxillofacial surgeons in clinical practice is essential. These challenges can be addressed through Beauchamp and Childress' four prima facie moral principles of biomedical ethics: autonomy, beneficence, non-maleficence, and justice. These principles, embedded in the code of conduct, serve as comprehensive norms of obligation that lead to the creation of specific rules guiding judgment and actions. Given the complex nature of OMFS procedures and their significant impact on patients' lives, ethical considerations are paramount.<sup>4,5</sup> This review aims to provide an overview of the key ethical principles in OMFS and discuss common ethical dilemmas encountered in practice.

### REVIEW OF LITERATURE

In a study by Prof. Alexander Hemprich, it was found that human subject protection (HSP) and conflicts of interest receive insufficient attention in the field of oral and maxillofacial surgery. Therefore, it is crucial to establish proper oversight for ethical breaches and implement these measures as a standard in peer-reviewed publications.<sup>6</sup> In a study by Mohammad Nazir Khan, the professional dilemmas and ethically challenging situations encountered by maxillofacial surgeons were examined. All participants reported facing dilemmas in their professional lives, responding to these situations in their own ways without following specific guidelines. The scenarios described by the participants were similar to those faced by general surgeons, physicians, and nurses. However, identity-related issues were unique to maxillofacial surgeons, possibly due to the specialty's emerging status in the region.<sup>7</sup> Additionally, in a study by Hendelman W., medical students identified arrogance as the most common ethical lapse, observed in 55% of teaching faculty and physicians, followed by breaches of confidentiality in 51% of the teaching staff.<sup>8</sup>

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## **INFORMED CONSENT**

Informed consent is a crucial principle in oral and maxillofacial surgery, ensuring that patients are fully aware of and understand their options before undergoing any procedures. This principle mandates that a patient must have adequate information to make autonomous decisions regarding their surgical care. For oral and maxillofacial surgeons, informed consent encompasses several key components: Patients must have the mental capacity to understand and make decisions about their treatment. Surgeons need to assess whether patients can comprehend the information provided and make an informed choice.<sup>9</sup> Surgeons must document the consent process, whether it is through a written form or detailed records of verbal agreements. This documentation confirms that the patient has been informed and agrees to the proposed surgical intervention. Surgeons are responsible for providing comprehensive information about the procedure, including potential risks, benefits, alternatives, and the likelihood of success. This ensures that patients understand what the surgery involves and its potential outcomes. The patient must be competent to give consent, which means they should be able to understand the information given and make a reasoned decision. If a patient lacks competency, a legally authorized surrogate must provide consent. In the context of oral and maxillofacial surgery, expressed consent is often required for specific procedures, such as complex surgeries or interventions that carry significant risks.<sup>10</sup> This consent can be either oral or written, depending on the complexity of the procedure and institutional practices. Implied consent, on the other hand, might apply to routine or less invasive treatments where the patient's agreement is inferred from their actions, though this is less common in the surgical setting due to the nature of the procedures involved. Ensuring that informed consent is properly obtained and documented helps protect patient autonomy and promotes ethical medical practice.<sup>11</sup>

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## **ETHICAL GUIDELINES FOR ORAL AND MAXILLOFACIAL SURGEONS (OMFS)- AMERICAN BOARD OF MAXILLOFACIAL SURGERY**

Oral and maxillofacial surgery, recognized as a dental specialty, requires practitioners (OMSs) to uphold specific responsibilities to other health professionals, patients, the public, associates, and the Profession itself, all executed with honor and integrity. These surgeons, certified or candidates for certification by the American Board of Oral and Maxillofacial Surgery (the Board), are held to high standards to ensure public safety and optimal care. Ethical conduct, defined by adherence to professional customs and laws, is paramount, with violations potentially leading to disciplinary action. OMSs must report any criminal conduct related to the Profession and disclose investigations or actions by relevant agencies within 30 days, fully cooperating with the Board and agencies. Respecting patients' freedom to choose treatment and providers, OMSs must provide care within the boundaries of their certification, ensuring services are within the defined scope of oral and maxillofacial surgery. Patient care responsibilities include tailoring evaluations and recommendations to individual needs, maintaining confidentiality per HIPAA, being truthful and honest, avoiding misleading actions regarding fees and compensation, and ensuring services are necessary. Practice arrangements should not involve profit-sharing from referrals, and any financial interests must be disclosed. Compliance with federal and state laws is required, along with reporting any conduct violating these Canons. Tasks requiring unique skills should not be delegated to unqualified providers, and patients should not be refused based on discriminatory factors. Sexual relations with current patients and sexual harassment are strictly prohibited. OMSs must maintain the dignity of the Profession through proper conduct, avoid unethical solicitation, and ensure the confidentiality of credentialing examinations. Concerns about other health professionals' patient care should be addressed directly with them, with any criminal violations, incompetence, or malpractice reported to appropriate authorities. Credentials should only demonstrate competency within the practice scope, and any financial interests in recommended products must be disclosed without implying Board endorsement. These Canons apply to all OMSs, including certification candidates, ensuring ethical practice and the integrity of the Profession.<sup>12</sup>

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## **FOUR PILLARS OF MEDICAL ETHICS**

### **BENEFICENCE**

The Hippocratic Oath emphasizes that physicians should act for the benefit of the sick. Beneficence, a key ethical principle, encompasses both specific beneficence—focused on individual parties like patients—and general beneficence, aimed at societal welfare.<sup>2</sup> This principle mandates that procedures be performed with the intention of benefiting the patient, requiring healthcare providers to continually develop their skills and knowledge, stay updated with training, and consider each patient's unique circumstances to ensure a net benefit. For oral and maxillofacial surgeons, adhering to beneficence involves not only respecting and treating patients autonomously but also actively contributing to their well-being.<sup>13</sup> A challenge to this principle arises when clinicians delegate or transfer complete authority for complex tasks to trainees or auxiliary staff, potentially compromising patient safety. High-quality care is best achieved when a responsible clinician personally oversees and performs procedures, ensuring that patient care remains at the highest standard and minimizes the risk of harm.<sup>14</sup>

### **NON-MALEFICENCE**

The principle of "Primum non nocere," or "First do no harm," is central to medical ethics and reflects the Hippocratic Oath's commitment to using treatment to aid patients without causing injury or harm. This principle demands that procedures should not harm the patient or society. In fields like infertility, while the intent is to minimize harm by pursuing the greater good, the limited success rates and uncertain outcomes of assistive reproductive technologies can negatively impact patients' emotional states. This makes it challenging for doctors to fully apply the principle of "do no harm." Paternalism, which involves making decisions for another person and overriding their preferences, is often at odds with the principle of autonomy. Physicians have a legal duty to inform patients about their condition, differential diagnoses, the purpose of tests, treatment options, associated risks, alternatives, prognosis, and expectations. For a patient to give informed consent, they must have the capacity to understand and make decisions. If a

patient lacks capacity, a surrogate decision-maker must provide consent on their behalf. The standard of care for oral and maxillofacial surgeons is established through widespread practices within the specialty, universal norms, and guidelines issued by institutional and academic committees. This standard is evaluated on a case-by-case basis, often determined by expert testimony and judicial guidelines. Professional negligence occurs when this standard is not met, and proving negligence is a critical element in malpractice lawsuits.<sup>15,16</sup>

### **AUTONOMY**

The principle of autonomy emphasizes the right of individuals to self-rule or self-governance, which includes the freedom and capacity to make their own choices. For patients to exercise autonomy in healthcare decisions, they must be free from coercion and have a clear understanding of the risks, benefits, and potential outcomes of medical procedures. Key rules stemming from autonomy include truth-telling, confidentiality, and informed consent. Informed consent is an ongoing dialogue between the clinician and patient, not merely a signature on a form. It involves detailed discussions about the treatment's nature, risks, benefits, alternatives, and the right to refuse.<sup>16</sup> Patients should be given the opportunity to ask questions and reflect on their decisions, ensuring their choices are made voluntarily and without undue influence. Despite these requirements, conflicts can arise because traditional paternalism often persists in clinical settings. Some practitioners may still hold a superior attitude, assuming they know better than the patient or questioning the patient's capacity to make informed decisions. This approach undermines the respect for autonomy and informed consent.<sup>2,3</sup> Over the past twenty years, the patient-clinician relationship has evolved from a paternalistic model to one that values patient autonomy. This shift is driven by technological, social, cultural, legal, and ethical changes. As a result, oral and maxillofacial surgeons are increasingly expected to support a participatory approach that respects patient autonomy, guiding them to make informed decisions while adapting to this evolving model of care.<sup>17</sup>

### **JUSTICE**

The principle of justice in healthcare emphasizes that the burdens and benefits of new or experimental treatments should be distributed equitably across all societal groups. It requires that medical procedures adhere to legal standards and ensure fairness for everyone involved. When evaluating justice, healthcare providers must consider several factors: the fair allocation of limited resources, competing needs, rights and obligations, and adherence to existing laws. Reproductive technologies, in particular, pose ethical challenges due to their uneven availability, which can lead to disparities in care. A healthcare provider demonstrating a dismissive or uncaring attitude towards less affluent or less educated patients—such as by failing to thoroughly examine or explain their conditions, avoiding necessary treatments or follow-ups, or neglecting to address adverse outcomes—exemplifies unjust behavior. Such actions contribute to a lower quality of care and damage professional and interpersonal relationships. Additionally, mistreatment of staff and trainees, lateness, or poor attendance at essential meetings also reflects a disregard for justice and fairness in healthcare. Distributive justice concerns the fair and equitable allocation of resources. Several theories of justice provide different perspectives on this principle: Utilitarianism focuses on achieving the greatest good for the most people; Libertarianism emphasizes protecting individual liberty and property; Communitarianism stresses the community's responsibility to individuals, based on pluralism; and Egalitarianism advocates for basic equality among individuals.<sup>1,2,3,18</sup>

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## **ETHICAL CONCERNS WITH AI IN ORAL AND MAXILLOFACIAL SURGERIES**

The integration of artificial intelligence (AI) into oral and maxillofacial (OMF) cosmetic surgeries, particularly within plastic surgery practices, introduces multiple ethical challenges. One significant issue is the claim by some AI systems to objectively classify attractiveness, raising concerns about potential discrimination based on ethnicity and gender, which could lead to the propagation of racial division and a reduction in diversity within cosmetic surgeries. A major limitation in training AI models, especially convolutional neural networks (CNN), is the size and quality of the datasets used, as training data, algorithms, parameters, and the overall quality of the datasets heavily influence the effectiveness of AI models. Most studies on AI applications in OMF cosmetic surgeries have been constrained by limited dataset sources. Several methods can mitigate the challenges of small datasets, such as data augmentation techniques involving geometric deformation in image processing, and collecting diverse datasets from various centers, which include different genders, ages, and nationalities, to enhance the generalizability of AI models. Notably, black patients and providers are underrepresented in procedures like rhinoplasty and blepharoplasty. The validity of using data from dating platforms to assess attractiveness is questionable, as attractiveness, generally defined as the ability to elicit interest and desire in observers, is inherently subjective and influenced by cultural factors. AI-based assessments of attractiveness, while precise, are merely quantifiable representations of opinions and do not account for the subjective and cultural nuances of beauty. Facial recognition systems used in aesthetic practices may inadvertently marginalize the values and perceptions of beauty held by different cultures, and using datasets from a limited number of nationalities and countries can reinforce these biases. AI should not replace the essential process of shared decision-making between healthcare providers and patients; providers must ensure that biases inherent in AI datasets do not disrupt this collaborative process. Achieving the best quality of patient care involves balancing AI insights with patient preferences and cultural considerations. While AI has the potential to significantly enhance OMF cosmetic surgeries, addressing the ethical dilemmas it introduces by ensuring diverse and representative datasets, maintaining the subjective nature of beauty assessments, and prioritizing shared decision-making are essential steps to mitigate these ethical concerns.<sup>19,20</sup>

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## **CONCLUSION**

Medical ethics in oral and maxillofacial surgery is a complex and dynamic field, requiring practitioners to navigate a range of ethical challenges. By adhering to ethical principles and continuously seeking to improve their understanding and application of these principles, OMFS surgeons can provide the highest standard of care while respecting the dignity and rights of their patients.

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