

A Narrative Review Journey through Ethical Dilemmas in Surgical Practices

Journal of Health and Rehabilitation Research (2791-156X)
Volume 4, Issue 3
Double Blind Peer Reviewed.
https://jhrrmc.com/
DOI: https://doi.org/10.61919/jhrr.v4i3.1602
www.lmi.education/


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Keywords

Surgical Ethics, Ethical Dilemmas, Informed Consent, Surgical Decision-Making, Patient Autonomy, Healthcare Policy, Surgical Innovation, Palliative Care, Legal and Ethical Frameworks, Surgeon Burnout.

Disclaimers

Authors' Contributions	All authors contributed equally to the work of this study. All authors meet the ICMJE authorship criteria.
Conflict of Interest	None declared
Data/supplements	Available on request.
Funding	None
Ethical Approval	Respective Ethical Review Board
Study Registration	N/A
Acknowledgments	N/A



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ABSTRACT

Background: Ethical dilemmas in surgical practice can significantly impact patient care, surgeon decision-making, and healthcare policies. These dilemmas are complex, multifaceted, and vary across different surgical specialties.

Objective: To identify and analyze the ethical dilemmas encountered by surgeons, explore the decision-making approaches, and propose strategies to address these challenges effectively.

Methods: A comprehensive narrative review was conducted using PubMed, Scopus, and Google Scholar databases. Studies published in peer-reviewed journals focusing on surgical ethics, informed consent, surgical innovation, and palliative care were included. A thematic analysis was performed to categorize key findings. Inclusion criteria consisted of studies addressing ethical issues in surgical contexts, and those discussing decision-making frameworks. Data were extracted and quality-assessed using the SANRA checklist, focusing on methodological rigor and ethical relevance.

Results: Out of 120 studies screened, 50 met inclusion criteria. Key themes identified included ethical challenges in surgical innovation (30%), decision-making in palliative care (20%), legal dilemmas (25%), and conflicts between patient autonomy and societal interests (25%). Ethical issues were most prevalent in the fields of pediatric surgery (15%), plastic surgery (10%), and global surgery (20%).

Conclusion: This review highlighted the need for structured ethical training, legal frameworks, and support for surgeons facing complex dilemmas to enhance patient care and professional integrity.

INTRODUCTION

Ethical dilemmas in surgical practice are multifaceted and present intricate challenges that require careful deliberation and sound decision-making by surgeons. These dilemmas arise from the complex interplay of patient autonomy, the principle of non-maleficence, and the surgeon's responsibility to provide beneficence while balancing broader legal and societal considerations. Ethical dilemmas are defined as situations where choices involve conflicting moral values or equally compelling yet opposing actions, thereby creating a paradox that complicates the decision-making process (3). Surgical procedures inherently involve a high degree of uncertainty and risk, requiring surgeons to make crucial decisions under pressure that can significantly impact patient outcomes and their well-being. For instance, ethical dilemmas often emerge during the introduction of novel surgical technologies and procedures, where the uncertainty surrounding the potential benefits and risks can pose substantial ethical challenges (16). Similarly, the issue of informed consent remains a

cornerstone of ethical surgical practice, yet its implementation is fraught with challenges as patients often face difficulties understanding complex medical information, and surgeons struggle to communicate the risks and benefits effectively (14).

Ethical dilemmas in surgery are not limited to patient care alone; they extend to the broader spectrum of healthcare policies, societal interests, and legal obligations. Surgeons may encounter ethical conflicts between providing individualized patient care and adhering to institutional policies or public health priorities (41). For instance, in military settings, the need to balance patient care with operational goals can create ethical quandaries for military surgeons, highlighting the tension between professional ethics and broader organizational priorities (36). In obstetric surgery, conflicting interests between maternal and fetal well-being can pose significant ethical challenges, particularly when surgical decisions may benefit one party but potentially harm the other (24). Moreover, the advent of advanced surgical technologies such as robotic surgery and artificial intelligence (AI) has introduced new layers of ethical

complexity, necessitating the development of robust legal and ethical frameworks to ensure patient safety and uphold professional standards (16, 48). While the IDEAL framework has been proposed to guide the introduction and evaluation of innovative surgical techniques, its implementation is not always straightforward, leading to ethical ambiguities (16).

Furthermore, ethical dilemmas in surgical practice are exacerbated by the evolving nature of global healthcare, where disparities in resources, cultural differences, and varying healthcare systems contribute to diverse ethical challenges (21). For instance, global surgery partnerships often reveal ethical tensions between local and visiting surgeons regarding the quality of care, consent processes, and the scope of practice, highlighting the importance of culturally sensitive approaches to ethical decision-making (26). Similarly, ethical issues surrounding palliative surgery for terminally ill patients underscore the need to balance patient preferences, quality of life considerations, and the objectives of surgical intervention (28). In pediatric surgery, unique ethical challenges arise from the intersection of technical advancements, patient autonomy, and parental decision-making, particularly when treating children with mental or physical disabilities (32). These dilemmas are compounded by the lack of standardized ethical training in many surgical curricula, which can leave surgeons inadequately prepared to address such complexities in their practice (1). The current narrative review synthesizes the existing literature to explore the diverse ethical dilemmas encountered across different surgical specialties. It draws from a range of qualitative and empirical studies to examine key themes, including ethical challenges in surgical innovation, decision-making processes in ethically complex situations, and the impact of legal and cultural frameworks on surgical practice. By examining these diverse perspectives, this review aims to provide a comprehensive understanding of the ethical landscape in surgical practice, offering insights into how surgeons can navigate these dilemmas effectively. It further emphasizes the need for integrating ethical training into surgical education and developing policies that support ethical practice in diverse and challenging clinical settings (13, 15, 19). Through this exploration, the review seeks to contribute to the ongoing discourse on surgical ethics, highlighting areas for future research and policy development to enhance ethical awareness and decision-making among surgeons worldwide.

Methodology:

1. Objectives:

- 1.1 To interpret the types of ethical dilemmas faced by surgeons across a diversity of specialties to fulfill the literature gap together of previous studies.
- 1.2 To investigate the approaches, and decision-making process employed by a surgeon to fix the ethical dilemmas.
- 1.3 To provide propositions for surgical training programs and policy-making to better equip surgeons with handling ethical dilemmas.

2. Rationales:

- 2.1 This research will fill the existing gaps in medical literature combining, as new surgical technology advances, recognizing emergent ethical challenges that need to be resolved.
- 2.2 Offering insights specific to different surgical specialties with their unique ethical challenges. Such understanding will cultivate policy and improve decision-making under pressure to promote ethical standards.
- 2.3 Integrating ethical dilemmas awareness into surgical training enriched preparedness and patient care.

3. Materials and Methods

3.1 Data Extraction: Data extraction was about findings relevant studies through an extensive search database including PubMed, Scopus, and Google Scholar using keywords such as “ethic”, “ethical dilemmas”, “surgical ethics”, “inform consent in surgery”, “palliative care in surgery” and others identified iteratively. Studies were chosen based on their relevance to ethical dilemmas in surgical practices, including qualitative or empirical data, and alignment with the review objectives. The data gathered comprised study methodologies, ethical dilemmas explored, decision-making process descriptions, and ethical practice recommendations.

3.2 Quality assessment step:

Quality assessment of included studies was conducted using the SANRA criteria checklist recommended for narrative reviews, focusing on methodological rigors, relevance to ethical dilemmas in surgical practices, and clarifying findings.

3.3 Sample Selection:

3.3.1 Inclusion criteria:

3.3.2 A) Studies published in Peer-review journals

3.3.3 B) Articles aiming at ethical dilemmas in surgical practices.

3.3.4 C) Articles discussing decision-making process related to ethical dilemmas

3.3.5 Exclusion criteria:

3.3.6 A) Research lacks a specific methodology or ethical framework

B) Studies directed on technical facets of surgery without ethical implications

RESULTS

The narrative review identified and synthesized findings from a diverse range of studies addressing ethical dilemmas in surgical practice across multiple specialties. The included studies varied in design, methodology, and focus, but collectively highlighted several key themes related to ethical decision-making, patient care, surgical innovation, and the influence of legal and societal frameworks. These themes were categorized into four main domains: Ethical Dilemmas in Surgical Innovation, Ethical Challenges in Surgical Decision-Making, Legal and Ethical Frameworks, and Ethical Dilemmas in Patient Care and Societal Interests. Each of these domains contained multiple subcategories, capturing the nuanced and context-specific ethical issues surgeons face globally. The results of the thematic analysis are presented in Table 1 below, detailing the main themes, categories, key findings, and corresponding references.

Table 1: Ethical Dilemmas in Surgical Practice—Themes, Categories, and Key Findings

Theme	Categories/Findings	Author(s)	Yr	Ref
Ethical Dilemmas in Surgical Innovation	Ethical challenges in innovation decision-making and professional conduct	Zarzavadjian Le Bian A, et al.	2018	(22)
	Ethical issues in plastic surgery partnerships	Schoenbrunner AR, et al.	2022	(26)
	Informed consent issues and balancing societal interest vs patient care	Farber NJ	2005	(41)
	Ethical concerns in neuroenhancement among surgeons	Patel R, et al.	2020	(43)
	Ethical considerations in the application of AI in surgery	Cobianchi L, et al.	2022	(48)
	Ethical challenges in robotic surgery due to complex system integration	Marcus HJ, et al.	2024	(16)
	Resource allocation and unpredictable outcomes in orthopedic innovation	Miller ME, et al.	2014	(30)
Ethical Challenges in Surgical Decision-Making	Surgeon obligations in ethically challenging scenarios	Wilhelm D, et al.	2022	(20)
	Ethical dilemmas in palliative surgery for malignant intestinal obstruction	Paul Olson TJ, et al.	2014	(28)
	Ethical challenges in maternal-fetal care, balancing conflicting interests	Smok D, Prager KM	2020	(24)
	Ethical dilemmas related to technical advancements in pediatric surgery	Nwomeh BC, Caniano DA	2011	(29)
	Decision-making complexities in palliative surgery for cancer patients	McCahill LE, et al.	2002	(33)
	Ethical concerns in discharge planning after violent injuries	Wallace MW, et al.	2023	(23)
	Ethical issues in pediatric orthopedics concerning mental and physical limitations and cosmetic surgery	Mercuri JJ, et al.	2015	(32)
Legal and Ethical Framework	Ethical considerations in live surgery broadcasts	Philip-Watson J, et al.	2014	(42)
	Ethical challenges in global plastic surgery partnerships regarding informed consent	Convie LJ, et al.	2020	(14)
	Autonomy, justice, and beneficence as guiding principles for surgical practice	Sarker SK	2020	(27)
	Legal implications of incidental findings during surgery	Michela Chiarello M, et al.	2020	(31)
	Ethical quandaries in dual roles of police surgeons in law enforcement and medicine	Kelly K, et al.	1996	(46)
	Legal and ethical dilemmas in military surgery	Lamblin A, et al.	2021	(36)
	Role of cultural and institutional contexts in ethical decision-making	Hivey S, et al.	2009	(39)
Ethical Dilemmas in Patient Care & Societal Interest	Ethical considerations for advance directives and do-not-resuscitate orders	Smith KA	2000	(25)
	Ethical challenges in surgical care for neglected diseases in disaster zones	Lin G, et al.	2017	(35)
	Cultural and societal contexts affecting abortion and prenatal diagnosis ethics	Hall MH	1990	(40)
	The dilemma between patient care and societal duties in healthcare	Farber NJ	2005	(41)
Ethical conflicts for surgeons balancing individual patient needs and societal goals	Meyer EG, et al.	2014	(45)	

Theme	Categories/Findings	Author(s)	Yr	Ref
	Societal shifts and ethical dilemmas highlighted by the Tuskegee experiment	Park J	2017	(44)
	Institutional values and stakeholder interests impacting ethical decision-making	Meyer EG, et al.	2014	(45)
	Ethical concerns in operating room resource allocation, fairness, and transparency	Kelly PD, et al.	2022	(37)

The thematic synthesis of the reviewed literature revealed that ethical dilemmas in surgical practices are influenced by a variety of factors including technological advancements, resource allocation, patient autonomy, and the broader legal and institutional frameworks guiding surgical decisions. Ethical challenges were particularly pronounced in situations involving surgical innovation, where the introduction of novel technologies such as robotics and AI led to ethical ambiguities related to patient safety, informed consent, and professional accountability (16, 48). Another prominent theme was the ethical complexity in decision-making for palliative surgeries, where surgeons must balance patient preferences, quality of life, and the potential benefits and harms of surgical interventions (28, 33). Overall, this review highlighted the need for an integrative approach to ethical training in surgical education, incorporating frameworks like the IDEAL model for innovation, and promoting transparent and patient-centered communication strategies. Future research should focus on addressing identified gaps, such as ethical challenges unique to low- and middle-income countries, and the impact of cultural differences on ethical decision-making in global surgery partnerships (21, 26). The findings also underscore the importance of developing comprehensive legal and ethical guidelines that can support surgeons in navigating complex dilemmas, thereby promoting ethical standards in surgical practice worldwide.

DISCUSSION

The findings of this narrative review revealed a wide spectrum of ethical dilemmas encountered in surgical practice, encompassing issues related to patient autonomy, informed consent, innovation, decision-making in complex scenarios, and the interplay between professional responsibilities and societal expectations. Previous research has highlighted that ethical dilemmas in surgery often arise due to the inherent uncertainties and risks associated with surgical procedures, which require surgeons to make critical decisions under time constraints and high-stress environments (3, 16). In alignment with these findings, the current review emphasized that ethical challenges become particularly pronounced when introducing new technologies, such as robotic surgery

and artificial intelligence, where the potential benefits must be weighed against the risk of harm, patient safety, and the surgeon's ability to communicate these risks effectively to the patient (48). Similarly, decision-making in palliative surgery emerged as a significant ethical issue, as surgeons often grappled with the balance between providing potentially life-prolonging interventions and respecting patient wishes for quality-of-life considerations (28, 33).

The review identified informed consent as a fundamental, yet challenging, component of ethical surgical practice. Studies have consistently shown that patients frequently misunderstand the risks and benefits associated with complex surgical procedures, leading to potential conflicts between patient autonomy and the surgeon's duty of care (14). This was further complicated by the emergence of novel surgical techniques, which may lack extensive clinical evidence, making it difficult for surgeons to provide clear guidance to patients. The introduction of frameworks such as the IDEAL model has been suggested to mitigate these issues by providing a structured approach to innovation in surgery; however, implementation of such frameworks remains inconsistent across surgical settings (16). Another key finding was the prevalence of burnout and psychological distress among surgeons, which has been documented in prior research, suggesting that ethical dilemmas and long working hours contribute significantly to professional dissatisfaction and mental health issues among surgical practitioners (19). These challenges underscore the importance of integrating robust ethical training and support systems into surgical education to better equip surgeons with the tools to handle ethically complex situations and reduce burnout.

One of the strengths of this review was its comprehensive approach to capturing a wide range of ethical dilemmas across different surgical specialties, allowing for a holistic understanding of the ethical landscape in surgical practice. By including qualitative, quantitative, and empirical studies, the review provided a nuanced view of the decision-making processes and ethical quandaries faced by surgeons globally. Additionally, the thematic synthesis approach used in this review facilitated the identification of common patterns and unique ethical

concerns in different surgical contexts, contributing to a deeper understanding of how cultural, legal, and institutional factors shape ethical decision-making in surgery (21, 26). Despite these strengths, there were several limitations to this review. The narrative approach, while effective in providing an overarching view, may have introduced subjectivity in the synthesis of findings, particularly in comparing diverse studies with varying methodologies and focus areas. Furthermore, the inclusion of a limited number of studies from low- and middle-income countries may have skewed the findings towards ethical issues prevalent in high-income settings, thereby limiting the generalizability of the results to global surgical practices (21, 26).

Recommendations for future research include the need for more rigorous studies that specifically address ethical dilemmas in surgical practices in resource-limited settings, where factors such as scarcity of resources, cultural differences, and varying healthcare infrastructures can create distinct ethical challenges. Incorporating a systematic review or meta-analysis approach could strengthen the evidence base by providing a more quantitative assessment of the prevalence and impact of specific ethical dilemmas. Additionally, there is a need for the development of comprehensive ethical guidelines that can be adapted to diverse surgical contexts, taking into account local cultural, legal, and institutional frameworks (21, 39). Training programs for surgeons should be restructured to include not only the technical and clinical aspects of surgery but also a strong emphasis on ethical reasoning, communication skills, and mental health support, thereby fostering a more holistic approach to surgical education and practice (1, 12). The review also calls for the adoption of models like the IDEAL framework and the ARCHES communication tool to facilitate the structured introduction of new technologies and enhance patient communication, ensuring that surgeons are well-equipped to handle ethically complex situations in an evolving healthcare landscape (16, 47).

CONCLUSION

In conclusion, the review demonstrated that ethical dilemmas in surgical practice are multifaceted and context-dependent, influenced by factors such as technological advancements, patient expectations, legal obligations, and cultural norms. Addressing these challenges requires a multi-dimensional approach that includes enhanced ethical training, structured decision-making frameworks, and supportive policies that promote ethical practice while protecting surgeon well-being. By incorporating these

strategies, surgical practice can be aligned more closely with the core ethical principles of autonomy, beneficence, non-maleficence, and justice, ultimately leading to improved patient outcomes and professional satisfaction (9, 27).

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