

# Analysing the potential of clinical ethics consultations for surgical education: a thematic and contextual analysis

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## Summary

**STUDY AIMS:** Although surgeons face ethical questions and conflicts in daily practice, surgical education lacks ethics training. This study explores the relevance of clinical ethics consultations in addressing ethical conflicts and their potential role in surgical education.

**METHODS:** This study explored the role of clinical ethics consultations (CECs) between 2012 and 2021 in both formal and informal surgical ethics education. First, data from each clinical ethics consultation were retrieved from the electronic medical database of the clinical ethics consultation services of the University Hospital Basel (USB) and the University Psychiatric Clinics Basel (UPK). Second, the data were analysed using thematic and contextual analysis. In the final step, the analysis included the identification of the educational focus. The methodological approach aimed to provide a detailed exploration of the role of clinical ethics consultations in surgical ethics education, despite the inherent constraints associated with document analysis and practical limitations regarding participant observation and interviewing.

**RESULTS:** Of the 359 clinical ethics consultations examined, 38 were related to surgical interventions and conditions. Surgeons were involved in all 38 clinical ethics consultations, but surgical residents were involved in only 17 (45%), including 10 (26%) that they had requested themselves. These 17 clinical ethics consultations met the inclusion criteria and were suitable for in-depth analysis. Analysis of the ethical topics (maximum of three per case) revealed four main themes: patients' wishes (n = 8), treatment planning (n = 5), treatment of somatic diseases in patients with additional mental disorders (n = 5), and challenges in dealing with patients' representatives/relatives (n = 4).

**CONCLUSIONS:** Ethical issues faced by surgical residents are often unrelated to primary surgical concerns. Despite the importance of ethical decision-making training in medical education, residents participated in less than half of clinical ethics consultations. Surgical faculty should

involve residents in interdisciplinary discussions and clinical ethics consultations to increase awareness. Surgical curricula should incorporate resources to improve ethics-related decision-making skills.

## Introduction

Surgical practice presents a distinct context for clinical ethics due to its procedural nature, time-sensitive decision-making, high-stakes outcomes, and hierarchical team structures. These characteristics pose unique ethical challenges, often involving informed consent, risk-benefit assessments, interprofessional communication, and questions of futility or postoperative quality of life. Theoretical knowledge and clinical skills regarding ethics and its role in clinical practice are essential for the development of professionalism. With the transition to competency-based medical education, starting in 2018, institutions such as the Accreditation Council for Graduate Medical Education (ACGME) have defined ethical knowledge and skills as a core competency and established them as milestones [1]. Furthermore, medical universities and residency programs provide a variety of curricula and interventions for ethics education [2–4]. However, current literature suggests that clinical ethics education remains insufficient [3, 5, 6].

Surgical residents should be able to recognise and respond to ethical issues they encounter in clinical training [7]. However, because they lack sufficient clinical ethics education, they often rely on the fundamentals learned in medical school, observe and imitate the ethical behaviour of superiors or colleagues, learn from their own experience, and apply what they have gleaned within the framework of a basic ethical understanding [5, 8–10]. In general, surgical ethics can be taught in different forms: informal educational approaches include role modelling, bedside teaching, and the hidden curriculum, while formal approaches include lectures, case-based learning, small-group learning, role play, standardised patients, and ethics morbidity and mortality rounds [7].

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Clinical ethics consultation (CEC) services support decision-making in ethically difficult situations [5, 11]. They are based on fundamental ethical considerations and frameworks and help healthcare professionals find appropriate solutions [12–13]. However, there is a significant gap in understanding how clinical ethics consultations contribute to surgical residents' ethical education.

This study addresses a gap in surgical ethics education by evaluating the role of clinical ethics consultations in residency training. We focus on how clinical ethics consultations contribute as informal, real-time ethical support during patient care and as structured, case-based learning opportunities with ethics experts. By analysing the content of clinical ethics consultations related to surgical cases, we seek to identify the ethical questions, conflicts, and dilemmas surgical residents face. Our goal is to identify ways to integrate ethics more effectively into surgical education and improve decision-making. The findings provide insight into what residents learn through the consultations and highlight themes that could shape future surgical education.

## Materials and methods

In 2012, the University Hospital Basel and the University Psychiatric Clinics (UPK) initiated a clinical ethics consultation service to support healthcare providers, patients, and their relatives in ethical decision-making. All employees of the hospitals, as well as patients and family members, are allowed to request clinical ethics consultations [11]. Each clinical ethics consultation is moderated by a staff member of the clinical ethics unit and follows the Basel Model of Principle-Oriented Clinical Ethics Consultation, a structured process model for ethical decision-making [14]. This model includes the four-principles approach of biomedical ethics by Beauchamp and Childress, which entails consideration of respect for autonomy, nonmaleficence, beneficence, and justice, as well as the change-of-perspective approach [15–19]. The weighting of the principles is determined on a case-by-case basis.

The Basel Model is an eight-step procedural framework developed to support medical professionals in decision-making during interdisciplinary clinical ethics consultations. It aims to reach resolutions that respect the values and needs of those involved while remaining within ethical and legal boundaries [14].

The approach, according to the Basel Model, does not directly include a category for education. Instead, learning objectives can be formulated retrospectively from the recorded content of the ethical analysis. The categories of ethical focus discussed in clinical ethics consultations and documented in the transcripts are based on the Armstrong Clinical Ethics Coding System (ACECS) [20]. These categories also cover issues that may be primarily medical but also have ethical relevance, such as treatment planning and options. This can involve a wide range of ethical questions, such as considering how to proceed in a specific patient situation in consultation with the various disciplines involved.

Every clinical ethics consultation is logged by a member of the clinical ethics unit, and a draft is subsequently sent to

those involved for review. The document is finalised after further adjustments and the approval of all participants.

The study was exempted from review by the Ethics Committee for Northwest and Central Switzerland (Ethikkommission Nordwest- und Zentralschweiz, EKNZ; Req-2021-01418). Following the Ethical Principles for Medical Research Involving Human Subjects of the World Medical Association of Helsinki, data for each clinical ethics consultation were obtained from the electronic medical databases of the Clinical Ethics Consultation services of the University Hospital Basel (USB) and University Psychiatric Clinics (UPK). Inpatient and outpatient clinical ethics consultations from all adult specialities (surgical and nonsurgical) and departments (somatic and psychiatric) were included.

Patients' demographic and surgical data were extracted from anonymised clinical ethics consultation transcripts. To examine how clinical ethics consultations contribute to surgical ethics education, the analysis focused on two dimensions: the role in structured, curriculum-based learning (formal education), such as case discussions with ethics faculty, and the role in real-time learning (informal education) through residents' participation in bedside consultations during daily clinical care. The research team consisted of JK, a surgeon and surgical educator, and CW, a lawyer and staff member of the clinical ethics unit. They met regularly to discuss the findings and refine the analysis.

## Sampling and data collection

The study encompassed ethical inquiries related to individual cases submitted to the clinical ethics units of the Swiss University Hospital Basel and the University Psychiatric Clinic Basel between 2012 and 2021. The cases involved inpatients and outpatients across various medical specialities. To answer the research questions, all clinical ethics consultation reports from this period were reviewed to identify those dealing with requests for ethical issues in surgery. A two-step approach was employed to identify relevant cases. First, a comprehensive search of all documents was conducted using the defined key terms "oper" (German abbreviation for "operation"), "chir" ("surgery"), and "resek" ("resection"). Second, the content of each case was assessed to determine its surgical relevance by examining the presence of search terms in key protocol sections, including "patient's history," "request," "treatment options," "conclusion," and "statements by the treating persons or involved institutions." Cases discussing prospective surgical options without a surgeon present, as well as cases without surgical interventions, were excluded.

## Data analysis

To improve understanding of the ethical focus, content, and significance of the clinical ethics consultation within surgical ethics education, thematic and contextual analysis was performed. Rather than a simple review, a systematic approach was applied. The following steps were undertaken:

1. *Thematic analysis*: Clinical ethics consultation transcripts were analysed to identify recurring ethical themes and dilemmas associated with surgical cases.

2. *Contextual analysis*: The broader context in which the notes were taken was assessed, including the specific circumstances, decisions, and interactions that shaped the ethical discussions within the clinical ethics consultation.
3. *Educational focus identification*: The discussions within the clinical ethics consultation discussions were examined to identify elements contributing to formal and informal surgical ethics education. This included analysis of language, recommendations, and considerations relevant to the ethical aspects of surgical practice.

In summary, the methodological approach aimed to provide a detailed exploration of the role of clinical ethics consultations in surgical ethics education, despite the constraints of document analysis and the practical limitations of participant observation and interviewing.

## Results

Between January 2012 and December 2021, 359 clinical ethics consultation requests related to individual cases were submitted to the clinical ethics unit. The key-term search identified 113 potentially relevant consultations, of which 38 involved surgical patients. In the second step, 17 cases involving surgical residents were identified. Ten of these were requested independently by the surgical residents. Three consultations concerned the same patient. All clinical ethics consultations were conducted prospectively.

Of the 17 clinical ethics consultations, six were requested by the Department of Abdominal Surgery, two by the Department of Vascular Surgery, and two by the Department of Neurosurgery (one brain and one spinal). One consultation each came from the Departments of Heart Surgery, Oral and Maxillofacial Surgery, Breast Surgery, Otorhinolaryngology, Gynaecology, Urology, and Psychiatry.

The patients comprised 6 women and 11 men. Their age ranged from 32 to 85 years (mean 58 years). No data on ethnicity was available.

The structured process of the Basel Model for ethical decision-making within the clinical ethics unit applies the four-principles approach of biomedical ethics by Beauchamp and Childress [14]. Respect for autonomy was relevant in 17 cases, nonmaleficence in 15 cases, beneficence in 14 cases, and justice in 3 cases.

### Thematic and contextual analysis of the clinical ethics consultations

The 17 included clinical ethics consultations covered a broad range of themes in the request texts. Table 1 presents the themes of all clinical ethics consultation requests as well as the context in which they were made. Because requests are not formulated by ethics experts, their ethical relevance may not be immediately apparent.

The topic of addressing self-harming behaviour exhibited by a patient after surgery was discussed three times, each time pertaining to the same individual. Two clinical ethics consultation requests concerned the assessment of a patient's resuscitation status. Other requests addressed whether a patient's somatic and/or mental condition allowed an operation, a patient's negative attitude towards all

measures after surgery, the potential for the optimisation of inpatient follow-up treatment after surgery associated with extended hospitalisation, and whether an operation should be performed against the patient's wishes. All requests are presented here in abbreviated form due to anonymisation. A highly technical medical request may have prompted a broad ethical discussion during the consultation.

### Ethical topics of clinical ethics consultations

Analysis of the ethical topics (maximum of three per case) revealed four main themes: patients' wishes ( $n = 8$ ), treatment planning ( $n = 5$ ), treatment of somatic diseases in patients with comorbid mental disorders ( $n = 5$ ), and challenges in dealing with patients' representatives or relatives ( $n = 4$ ) (table 2). The numbers in brackets show how often the topic was mentioned in the other 342 clinical ethics consultation requests screened. Other relevant topics, such as care management, pregnancy conflicts, reproductive medicine issues, life-sustaining measures, resource allocation, and ethical issues relating to child welfare, were not relevant in our selected cases.

Patients' wishes were the most frequent clinical ethics consultation topic related to surgical interventions and were typically the main or secondary ethical focus (table 2). This corresponds with the evaluation of ethical principles, in which patient autonomy was considered most significant, being relevant in 15 clinical ethics consultations. Cases in which the patient's wishes were prioritised as the primary ethical consideration included discussions on the ethical implications of performing medically necessary surgery on a patient lacking decision-making capacity who expressed a presumed desire to die. Another evaluation examined whether the refusal of revisional surgery by a patient lacking decision-making capacity could be respected, knowing that it would result in death. Treatment planning was also important, but in most cases, it was the secondary rather than primary ethical focus of the consultation. In one of the two cases in which treatment planning was the main focus, dissent arose between the treatment team and the patient's relatives regarding further treatment. In the other case, the question concerned how to proceed in the case of an older adult patient who had been refusing tube feeding, medication, and other therapeutic measures for a week after curative surgical treatment of a tumour. In both cases, the ethical principles were balanced between respect for the patient's autonomy, beneficence (the provision of assistance), and nonmaleficence.

Surgical treatment of patients with comorbid mental disorders was also of particular importance in the clinical ethics consultations. This topic was the main ethical focus in four cases and the secondary focus in one case; three of these cases concerned the same patient. In such cases, the main issue was how to manage self-damaging behaviour after surgery. The other two cases involved patients whose mental disorders could have influenced their somatic diseases and potential surgical options. In these situations, the healthcare team expected poor patient compliance, which could have compromised the surgical plan. When planning subsequent treatment, it is essential to consider that difficulties with treatment engagement may be linked to a patient's psychiatric diagnosis [12].

Challenges in dealing with patients' relatives or representatives played an important role in four consultations. In some cases, patients lacked representatives; in others, relatives were present but disagreed with the healthcare team's recommendations. The healthcare team also struggled with relatives whom they perceived as overly demanding, making professional communication more difficult.

Self-endangerment by patients, therapy options, communication, and follow-up solutions were each discussed in three consultations. Risk-benefit analysis, treatment goals, the patient's CPR status, medical indications, and end-of-life care were addressed in two consultations each. In one consultation each, the topics included decisional capacity, compliance, coercive measures, assisted dying, advance directives, addictive disorders, and pain.

## Discussion

This study explored the role of clinical ethics consultations in formal and informal surgical ethics education. Analysis of the content of clinical ethics consultations of surgical cases provided insight into the types of ethical questions, conflicts, and dilemmas encountered by surgical residents during training. Of the 359 ethics consultation requests, 113 were surgery-related, but only 38 were directly associated with surgical questions. Surgical residents participated in fewer than half of these cases, only 10 of which were requested by the residents themselves. Overall, the 17 consultations involving surgical residents addressed a wide variety of ethical foci and individual needs for clinical ethics support.

Almost half of the consultations analysed focused on patients' wishes, which should be respected by the treating

**Table 1:**  
Clinical ethics consultation requests.

| No. | Thematic request                                                                                                                | Contextual information                                                                                                                                                                                                                                                            |
|-----|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | How should dissent between the treatment team and relatives (wife) regarding further therapy be handled?                        | The patient had suffered an ischaemic stroke. The blocked artery was successfully recanalised with lysis, but this did not resolve the ischaemia or left hemiplegia. A right decompressive hemicraniectomy and a dilation tracheotomy were performed.                             |
| 2   | Can this patient be operated on?                                                                                                | Abdominal surgery was considered and discussed. It had previously been ruled out due to the patient's unstable condition.                                                                                                                                                         |
| 3   | How should pain leading to fatigue be managed?                                                                                  | The patient reported severe pain in the head, chest, abdomen, and genitals. Previous surgical therapies had not provided long-term pain relief.                                                                                                                                   |
| 4   | How should the patient's CPR status be assessed?                                                                                | A young cancer patient at the end of life who insisted on maximal therapy.                                                                                                                                                                                                        |
| 5   | How should the wishes of a patient who underwent curative surgical tumour therapy and now refuses further treatment be managed? | An 85-year-old patient, after curative surgical tumour therapy, had been refusing tube feeding, medication, and other therapeutic measures for a week. The patient repeatedly expressed the wish to die, was at risk of suicide, and was admitted to psychiatry.                  |
| 6   | How should the patient's CPR status be assessed in an emergency?                                                                | The patient was in the emergency department.                                                                                                                                                                                                                                      |
| 7   | How should treatment options for a long-hospitalised patient be optimised?                                                      | The patient had inoperable abdominal fistulas. During the further course, complications such as infections and abscesses developed. Therefore, the patient remained on the ward for a very long time.                                                                             |
| 8   | Should an artificial heart be implanted?                                                                                        | A patient with a wide range of medical, social, cultural, and psychosocial problems had previously undergone artificial heart transplantation. The inner mechanics of the current device were damaged, resulting in recurrent pump thrombosis requiring subsequent lysis.         |
| 9   | Is the patient's wish for a particular surgical procedure ethically justifiable?                                                | A multimorbid male patient with vascular disease following leg amputation, and progressive breast carcinoma, for whom drug therapy had been exhausted.                                                                                                                            |
| 10  | How should an older adult patient with multiple problems and no contact person be managed?                                      | The patient presented with reclining trauma; left femur fracture; bilateral pneumonia; sacral decubitus, Grade III; and tachycardic atrial fibrillation. After surgery for the femur fracture, the patient developed delirium and several additional illnesses.                   |
| 11  | How should the discrepancy between the patient's wishes and the surgeon's opinion be managed?                                   | Due to complications from the first surgery, the patient refused revisional surgery.                                                                                                                                                                                              |
| 12  | How should self-harming behaviour be managed?                                                                                   | The patient had chronic wound-healing disorders after appendectomy without any recognisable surgical reason, with potential psychiatric causes.                                                                                                                                   |
| 13  | Are there alternative treatment options, and is there a risk of under- or overtreatment?                                        | The patient presented with secretion retention, respiratory insufficiency, and pre-arrest, as well as soft-tissue infection in the tracheostoma area and pleural empyema. The cancer prognosis was unfavourable, but curative treatment options had not yet been fully exhausted. |
| 14  | How should self-harming behaviour be managed?                                                                                   | The patient had abdominal wall abscesses due to self-manipulation, with a history of intra-abdominal abscess drainage.                                                                                                                                                            |
| 15  | How should self-harming behaviour be managed?                                                                                   | The patient developed septic shock due to recurrent abdominal abscesses from self-manipulation and had opioid addiction.                                                                                                                                                          |
| 16  | How should a patient's constant pain (VAS score 9–10) and the difficult situation with her husband be managed?                  | The patient had chronic back pain after multiple previous operations, with a current rod fracture on both sides and a subsequent fracture at T6. She was also diagnosed with a moderate depressive episode.                                                                       |
| 17  | Should a bilateral nephrostomy be placed in a noncompliant patient with a presumed wish to die?                                 | The patient had undergone surgical removal of a urothelial carcinoma with creation of a urostomy. The current hospital stay was due to the patient removing the nephrostomies. The patient also had liver cirrhosis and cachexia, and the medical prognosis was poor.             |

healthcare team. Tensions often arose between patients' wishes, relatives' opinions, and surgeons' motivations. Requests for clinical ethics consultations about patients' wishes showed that in the context of surgical procedures, the treating physicians may face difficulties in evaluating or complying with the wishes expressed.

From an educational perspective, clinical ethics consultations support the treating surgeon and their team, including the surgical residents, in assessing the situation and managing tensions between patients' wishes, surgeons' motivations, and the decision-making process [21–23]. Within a framework of ethical evaluation, surgeons must recognise that the patient's autonomy should be respected, even if their wishes do not correspond with the optimal or maximal theoretically possible treatment from a surgical perspective. Determining decision-making capacity in patients whose capacity may be compromised is particularly important for deciding whether the ethical principle of respect for autonomy or the principles of beneficence (e.g. protection or assistance) and nonmaleficence should take precedence. If patients' wishes remain unclear, it is ethically advisable to attempt to restore their decisional capacity before proceeding, in line with the principle *in dubio pro vita*.

Another relevant teaching point for surgical residents from these consultations is that therapy goals may need to be re-evaluated even after a medically successful operation, especially if the patient's wishes have changed. Consequently, consent information should address not only information on the intended interventional or surgical procedure but also the individual condition and needs of the patient, and it must be reconsidered if complications occur afterwards. Residents must recognise that the treatment plan may need to be reassessed regarding benefit versus harm. For these reasons, the framework conditions and the patient's compliance must be included in the counselling. To plan further treatment, it may be necessary to propose a

treatment plan that respects the ethical principle of autonomy.

The clinical ethics consultations for the surgical treatment of patients with mental disorders demonstrated how challenges may arise if the standardised surgical process is affected by additional factors, such as a psychiatric diagnosis [24–26]. These cases may be difficult because specific measures to manage mental disorders (e.g., self-harming behaviour) can interfere with surgical outcomes, and their management typically lies outside of the surgeon's expertise. In these scenarios, the focus of ethical considerations is on the principles of beneficence and nonmaleficence (i.e., benefit-risk ratio). Clinical ethics consultations concerning patients with mental disorders were instructive in generating knowledge about interdisciplinary approaches at the interface of somatic and psychiatric care – particularly the possibility of obtaining a psychiatric consultation and the potential for exchange with psychiatric professionals and institutions. Realistic therapy options, and therefore the best possible treatment procedure for the patient, can only be determined in light of the overall picture [27, 28]. These consultations also highlighted the need for clear and accessible documentation of the agreed treatment procedure for all providers involved in the patient's care.

The topics of dealing with relatives and self-endangerment by the patient were also highly relevant, although they were not the main ethical focus in any of the cases. On the one hand, there was a lack of early involvement of patients' relatives in treatment planning in complex situations. However, if the patient provided consent, such involvement could be helpful and necessary. On the other hand, difficulties were also encountered when the wishes expressed by the relatives of a patient lacking decision-making capacity needed to be critically questioned because maximal therapy was desired but therapeutic success was not assured. Considering such cases, surgical residents must be trained to understand that the wishes of patients and their relatives are of limited weight; in other words,

**Table 2:**  
Ethical topics of all clinical ethics consultation requests (n = 359) according to the Armstrong Clinical Ethics Coding System.

| Topic                                                                      | First (main) ethical focus | Second ethical focus | Third ethical focus | Total |
|----------------------------------------------------------------------------|----------------------------|----------------------|---------------------|-------|
| Patient's wishes                                                           | 3 (10)                     | 4 (7)                | 1                   | 8     |
| Treatment planning                                                         | 2 (25)                     | 0 (9)                | 3 (1)               | 5     |
| Treatment of somatic diseases in patients with additional mental disorders | 4                          | 1                    | 0                   | 5     |
| Dealing with representatives/relatives; substitute decision maker          | 0 (5)                      | 2 (8)                | 2 (6)               | 4     |
| Self-endangerment by patient                                               | 0 (6)                      | 3                    | 0                   | 3     |
| Treatment options                                                          | 1 (3)                      | 1                    | 1                   | 3     |
| Communication                                                              | 1 (4)                      | 1 (4)                | 0 (2)               | 3     |
| Follow-up solutions                                                        | 0 (5)                      | 1 (13)               | 2 (7)               | 3     |
| Risk-benefit analyses                                                      | 2 (14)                     | 0 (2)                | 0 (1)               | 2     |
| Therapy goal                                                               | 0 (4)                      | 2 (2)                | 0 (1)               | 2     |
| CPR status                                                                 | 2 (4)                      | 0 (1)                | 0 (1)               | 2     |
| Medical indication                                                         | 0                          | 0                    | 2 (1)               | 2     |
| End-of-life care                                                           | 0 (5)                      | 0 (3)                | 2 (2)               | 2     |
| Decisional competence                                                      | 0 (12)                     | 1 (15)               | 0 (1)               | 1     |
| Compliance, patient behaviour                                              | 1 (11)                     | 0 (3)                | 0 (1)               | 1     |
| Coercive measures                                                          | 0 (47)                     | 0 (15)               | 1 (2)               | 1     |
| Assisted dying                                                             | 0 (6)                      | 1 (1)                | 0 (1)               | 1     |
| Advance directive                                                          | 0 (5)                      | 0 (2)                | 1 (2)               | 1     |
| Addictive disorder                                                         | 0                          | 0                    | 1                   | 1     |
| Pain                                                                       | 1 (5)                      | 0                    | 0 (1)               | 1     |

there is no entitlement to a measure that is not medically indicated (ethical principle of nonmaleficence) [29, 30]. In addition, when relatives are involved, it is particularly important to ensure that the patient's wishes are represented and that the relatives' wishes or peace of mind are not the primary consideration. Managing relatives requires sensitivity and training in communication, especially when it affects decisions related to end-of-life care and decisions, such as palliative care (ethical principle of beneficence).

Overall, the teaching points from the clinical ethics consultations may help physicians handle individual cases better as well as acquire and expand their ethical skills in general. This educational approach may support surgical residents in managing similar cases in collaboration with an interdisciplinary team. In this way, clinical ethics consultations can be seen as a hybrid method to handle challenging ethical requests and as an educational intervention for all healthcare providers involved [31]. While it may be necessary to have experienced physicians responsible for decision-making on clinical ethics committees, it is crucial to encourage the participation of residents as well. Therefore, both the clinical ethics team and the main treating physician should ensure that residents are included in clinical ethics consultations for educational purposes. Although the learning process from a clinical ethics consultation cannot replace direct ethical education, ethically justified action strategies can be developed, applied, and later transferred to other cases based on individual cases [23]. Surgeons should also consider initiating clinical ethics consultations in the early stages of potentially challenging cases, as this can reduce tensions within the healthcare team and expand expertise for such cases. To enhance the learning process for treating physicians beyond the individual case, it is necessary to explicitly assign the discussed arguments to the ethical principles. However, complex cases will still require assistance from the clinical ethics support service. Therefore, we have made clinical ethics consultations a mandatory format for surgical residents at our tertiary hospital when they are involved in a particular case.

### Limitations

Recognising the decision to focus our analysis rather than conduct a comprehensive examination of all clinical ethics consultations as a study limitation, we acknowledge the potential oversight of other pertinent ethical issues. Nevertheless, this study incorporates data from all relevant specialities associated with surgical cases, revealing a diverse range of ethically relevant information for surgical education.

Simultaneously, we acknowledge the inherent limitations of textual document analysis, including the potential for nuances in the purposes and context in which the notes were recorded. While mindful of these constraints, we underscore that a more extensive approach involving participant observation and interviews was impractical within the confines of this research design.

Additionally, we are aware of the relatively small sample size, but we affirm its importance as an initial exploration into a nuanced area of clinical ethics.

This study serves as a valuable starting point for several reasons. Firstly, the comprehensive examination of clinical

ethics consultation transcripts across various surgical specialities provides a rich and diverse dataset, offering insights into the ethical dimensions of surgical practice. Secondly, the specific focus on surgical cases ensures depth in exploring ethical issues unique to this field.

We recognise that the scope of this study could be expanded through more comprehensive research, including multi-centre studies and prospective qualitative and quantitative approaches. Despite the small sample size, this study provides a foundation for future investigations and offers opportunities for broader generalisability and a deeper exploration of the role of CESs in surgical ethics education.

### Conclusions

Surgical residents may encounter a wide range of ethical issues during their training. However, topics not included in core surgical ethics curricula may be ethically relevant and decisive for residents' education. Nonsurgical issues, such as psychiatric and social questions, may be difficult for surgeons to address. Thus, interdisciplinary case discussions in clinical ethics consultations are valuable both for finding solutions and for educational purposes. While requesting assistance from clinical ethics may support decision-making in complex cases, a basic level of ethics competency remains essential. This study may help clinical ethics consultation services determine how to best educate various hospital specialities in addressing ethical issues common to their fields. Further research is needed to explore residents' perceptions of their ethics-related decision-making skills and ways to strengthen them.

### Data sharing statement

The data and codes related to this study are available from the corresponding author upon reasonable request.

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