A Systematic Scoping Review of Ethical Issues in Mentoring in Surgery

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ABSTRACT

BACKGROUND: Mentoring is crucial to the growth and development of mentors, mentees, and host organisations. Yet, the process of mentoring in surgery is poorly understood and increasingly mired in ethical concerns that compromise the quality of mentorship and prevent mentors, mentees, and host organisations from maximising its full potential. A systematic scoping review was undertaken to map the ethical issues in surgical mentoring to enhance understanding, assessment, and guidance on ethical conduct.

METHODS: Arksey and O'Malley's methodological framework was used to guide a systematic scoping review involving articles published between January 1, 2000 and December 31, 2018 in PubMed, Embase, Scopus, ERIC, ScienceDirect, Mednar, and OpenGrey databases. Braun and Clarke's thematic analysis approach was adopted to compare ethical issues in surgical mentoring across different settings, mentee and mentor populations, and host organisations.

RESULTS: A total of 3849 abstracts were identified, 464 full-text articles were retrieved, and 50 articles were included. The 3 themes concerned ethical lapses at the levels of mentor or mentee, mentoring relationships, and host organisation.

CONCLUSIONS: Mentoring abuse in surgery involves lapses in conduct, understanding of roles and responsibilities, poor alignment of expectations, and a lack of clear standards of practice. It is only with better structuring of mentoring processes and effective support of host organisation tasked with providing timely, longitudinal, and holistic assessment and oversight will surgical mentoring overcome prevailing ethical concerns surrounding it.

KEYWORDS: Surgery, mentor, professionalism, ethics

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Introduction

Mentoring in surgery enhances the job satisfaction of mentees and mentors,[1,2] boosts mentees' personal and professional growth,[2-11] and advances the reputation of the host organisation through improved research productivity[1] and faculty retention.[10] Described as 'an activity in which a more senior or experienced person who has earned respect and power within his or her field takes a more junior or less experienced person (known as a mentee or protégé) under his or her wing to teach, encourage and ensure the protégé's success',[11] mentoring's success pivots on the formation of enduring and personalised mentoring relationships between mentors and mentees.[12-15] However, nurturing mentoring relationships between senior clinicians and junior doctors and/or medical students renders mentees heavily reliant on the mentoring relationship for their success.[10,16-24] These concerns are multiplied when surgical mentoring occurs within a hierarchical work environment that propagates power differentials.[10,16-24] Concerns are further raised given suggestions that surgical mentoring has done little to address growing concerns about potential abuse of mentoring relationships, the misappropriation of mentee's work,[10,16-24] and its poor record on whistleblowing.[16,25,26]

Concerns over professional and ethical lapses in mentoring practice are also compounded by data suggesting that mentors and mentees are poorly equipped to meet their mentoring roles[27-29] and host organisations are not well equipped to assess mentoring relationships[1-11,16,18-21,30-47] or programmes in surgery.[12-16,48-67] Policing compliance of mentoring processes are also limited by the presence of varied mentoring practices fed in part by diverse understanding of mentoring processes due to conflation of distinct mentoring approaches[14,15,54-68] and due to mistaken intermixing of mentoring approaches with supervision,

Table 1. PICO, inclusion criteria, and exclusion criteria applied to literature search.

PICOS	INCLUSION CRITERIA	EXCLUSION CRITERIA
Population	Medical students Junior and senior clinicians Residents	Allied health specialities such as dietetics, nursing, psychology, chiropractic, midwifery, and social work
Intervention	Mentoring by senior clinicians for junior clinicians Mentoring by junior clinicians or residents for medical students	Non-medical specialities such as Clinical and Translational Science, Veterinary, and Dentistry
Comparison	None	Non-surgical specialities including anaesthesiology and obstetrics and gynaecology
Outcome	Attitude of Health Personnel Interprofessional Relations Ethical behaviour Professionalism Problems/barriers of mentoring	Peer mentoring, near-peer mentoring, mentoring for leadership, mentoring patients, or mentoring by patients
Study design	All study designs are included – Descriptive papers – Qualitative, quantitative, and mixed study methods – Perspectives, opinion, commentary pieces and editorials	Role modelling, coaching, supervision, and advising

role modelling, coaching, advising, networking, and/or sponsorship.[69,70] Limiting the efficacy of prevailing mentoring assessment tools[71] has been their failure to account for different curricula, mentee and mentor populations, and health care and education systems[13-15,49,52,71,72] as well as mentoring's evolving, adaptive, goal-specific, context-sensitive, and mentee-, mentor-, relationship-, and host-organisation-dependent nature (mentoring's nature).[73]

The need for this review

At the heart of these limitations has been a lack of an effective understanding of prevailing ethical concerns in surgical mentoring. Although redesigning assessment tools lies outside the remit of this article, a good start to overcoming these obstacles is better understanding the nature of ethical issues impacting surgical mentoring.[16,19-21,74]

Methodology

Given mentoring's nature which limits scrutiny of mentoring practice to studies of mentoring programmes in similar health care, educational, and clinical settings and congruous mentor and mentee populations, this study focuses its interests on articles focused on ethical issues in surgical mentoring.[12,14,15,49,52,72] A systematic scoping review of ethical issues in mentoring in surgery is adopted to explore the scope and depth[12,14,15,49,52,72] of limited existing data on mentoring malpractice in surgery.[16,19-21,28,75-84] Guided by Arksey and O'Malley's[79] and Levac et al's[78] methodological framework for conducting scoping reviews,[77,80,81] the flexible nature[75-77] of systematic scoping review[76] allows a summary of current data on ethical issues in mentoring across multiple contexts and population backgrounds in peer-reviewed and grey literature[28,79,82,83,85] in novice mentoring in surgery.[28,78,79,81-83] Defined as 'dynamic, context dependent, goal sensitive, mutually beneficial relationship between an experienced clinician and junior clinicians and/or undergraduates that is focused upon advancing the development of the mentee', novice mentoring is the dominant form of mentoring medical education.[52,53] Attention on novice mentoring in surgery is also apt given that it is especially susceptible to power differentials in mentoring relationships.[52,53]

Similarities between novice mentoring practices in undergraduate and postgraduate surgery programmes allow them to be analysed together.[14,15,49,52,72]

Stage 1: Identifying the Research Question

With the objectives of this review established under the guidance of librarians at the National University of Singapore's (NUS) medical library and the National Cancer Centre Singapore's (NCCS) medical library and 5 local educational experts and clinicians, the 6 members of the research team determined and developed the primary research question to be 'What are the ethical issues and professional lapses affecting mentoring in surgery?'. The secondary questions included 'What factors precipitate concerns about abuse of mentoring?' and 'What solutions have been offered to mitigate them?'. This research question was established with the use of the PICO framework as illustrated in Table 1.

Stage 2: Identifying Relevant Studies

With guidance from librarians at the NUS's medical library and the NCCS's medical library and 5 local educational experts and clinicians, the 6 members of the research team finalised the inclusion and exclusion criteria of this review.

The research team worked in pairs and examined all the abstracts retrieved from a MEDLINE search while applying the abstract screening tool, using variations of the word 'mentor' AND 'ethics' OR 'morals' OR professionalism OR barriers OR negative attitudes OR 'concerns' that appeared in the title or abstract of surgical papers. Applying the abstract screening

tool that the research team designed, the 3 reviewers (F.Q.H.L., W.J.C., C.W.S.C.) guided by the 2 senior reviewers (L.K.R.K. and S.M.) and the near-peer mentor (AT) independently screened the titles and abstracts identified in the PubMed search and compared the first 50 identified abstracts. F.Q.H.L., W.J.C., and C.W.S.C. received individual feedback on their findings and then proceeded to employ the abstract screening to the rest of the search results from PubMed.

On completing their review of PubMed articles, the 5 members of the review team compared their individual findings at online meetings and met to discuss discrepancies in their findings with the senior researcher (L.K.R.K.) and the near-peer mentor (AT). F.Q.H.L., W.J.C., and C.W.S.C. participated in group feedback sessions on the findings and were provided a chance to discuss their concerns and queries. Reviewing the results, the 6 reviewers employed Sambunjak et al's[27] 'negotiated consensual validation' approach to achieve consensus on the inclusion/exclusion criteria for the search, the search teams, and the abstract screening tool. Five members of the research team (F.Q.H.L., W.J.C., C.W.S.C., AT, L.K.R.K.) reviewed the search results and agreed on the inclusion/exclusion criteria which formed the basis of the abstract screening tool used in this study. All study designs (qualitative, quantitative, and mixed approaches) were included in this review. Articles that did not focus on ethical issues and professional lapses within mentoring in surgery were excluded.

The finalised search strategy included the following keywords: (medicine OR medical OR clinical) AND (mentor* OR mentee*) AND (ethics OR morals OR professionalism OR barriers OR negative attitudes). Following the standardisation and training process, the 5 reviewers performed searches of the other databases, then screened the list of full text independently, created their individual lists of articles to be included, and shared them online with all the reviewers. The same keywords were used for all the databases.

Centring around mentoring in surgery, 5 databases, namely, PubMed, Embase, ERIC, ScienceDirect, and Scopus, were searched between April 18 and October 24, 2018. After the pilot search, the search strategy was further evaluated and refined after consultations with the librarians. The same search strategy was replicated on OpenGrey and Mednar databases between September 12 and September 20, 2018. An identical search strategy was again performed on March 10, 2019 for all 7 databases to retrieve all relevant 2018 articles. Articles published in English or with English translations describing ethics in mentoring, challenges, barriers, and unprofessional practices from January 1, 2000 to December 31, 2018 were analysed.

Articles published before year 2000 were excluded as they often failed to delineate the specific mentoring approach being studied and were prone to conflating novice mentoring with distinct forms of mentoring such as group, mosaic, mixed, patient, family, youth, leadership, near peer, and e-mentoring as well as role modelling, coaching, supervision, networking, advising, and/or sponsorship.[14,15,49,52,72] All allied health specialities (eg, dietetics, nursing, psychology, chiropractic, midwifery, social work), non-medical professions (eg, science, veterinary, dentistry), and other non-surgery medical specialities were excluded.

Stage 3: Selecting Studies to Be Included in the Review

To provide a wide perspective of ethical issues in surgical mentoring, the features and nature of ethical issues facing novice mentoring programmes across various educational, clinical, health care, health care financing, and cultural settings in surgery were examined. To circumvent limitations arising from mentoring's nature, Braun and Clarke's[86] approach to thematic analysis was used to determine the consistent characteristics of a surgical mentoring approach across different contexts, objectives, and mentee and mentor profiles within novice mentoring programmes.[27,86,87] Braun and Clarke's[86] approach to thematic analysis was also employed given the absence of an *a priori framework* of mentoring[27,86,87] and as it circumvents the vast array of research methodologies used by the included articles, which prevent the adoption of statistical pooling and analysis.

Analysis of the Transcripts

The senior mentor (L.K.R.K.) and the near-peer mentor (AT) who are well versed with Braun and Clarke's[86] approach to thematic analysis guided the 3 junior members of the research team (F.Q.H.L., W.J.C., C.W.S.C.) as they performed independent searches of the 7 databases. The abstract screening tool was applied to extract potential articles before importing to EndNote, where removal of duplicates, organisation of references, and compilation of a list of individual abstracts to be analysed were done. Each list was shared among members of the review team. Disputes were settled during online or face-to-face review meetings. Sambunjak et al's[27] approach of 'negotiated consensual validation' was applied to achieve consensus on the finalised abstracts to be reviewed.

Each reviewer independently analysed the final list of abstracts and compiled a list of full-text articles to be reviewed. The lists were compared and discrepancies resolved at online or face-to-face review meetings. 'Negotiated consensual validation' was used to achieve consensus on the finalised full-text articles to be reviewed.[27]

All full-text articles to be reviewed were added to a shared Google folder and independently reviewed by the research team who developed individual lists of articles to be included in the study. These lists were compared and discussed online and 'negotiated consensual validation'[27] was used to achieve consensus on the final list of articles to be included (Figure 1).

The data charting form used by Tan et al[14] that characterised all publications by author, year of publication, objective of the study, practice setting, methodology, population profile, and outcome evaluation was adopted. The data charting form was trialled on the first 10 articles and evaluated by the

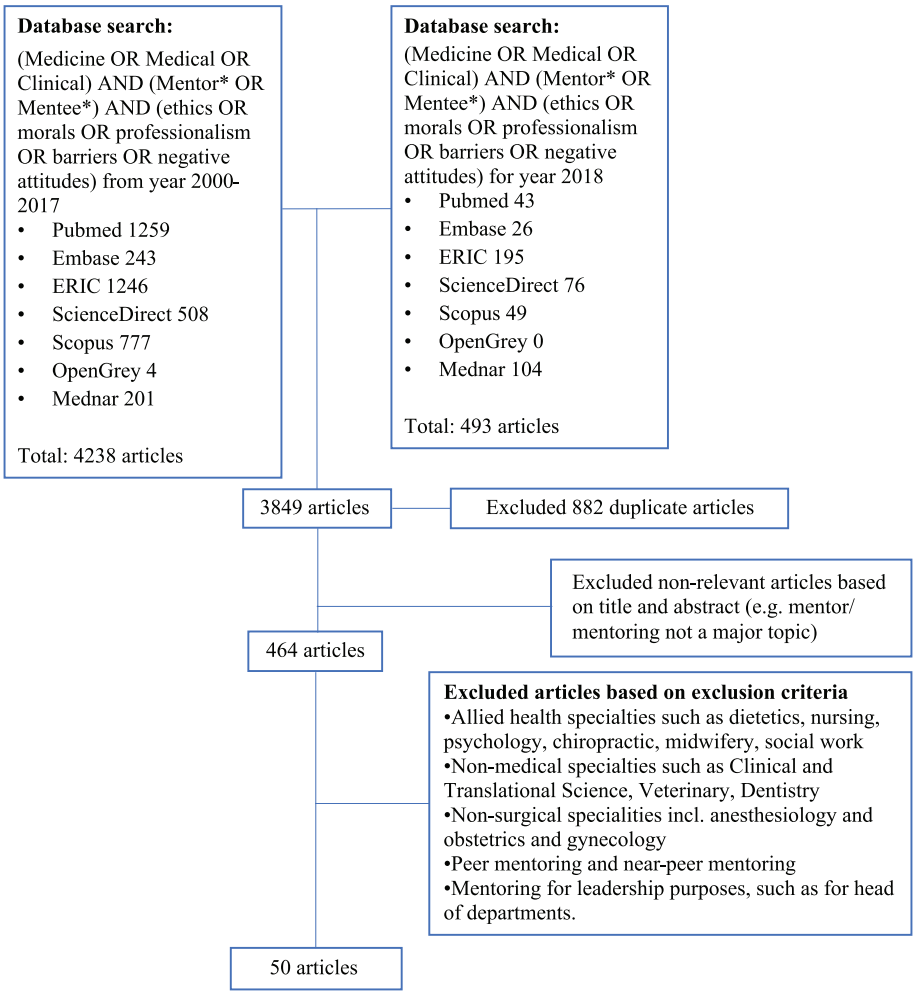

Figure 1. PRISMA flowchart.

5 members of the review team (F.Q.H.L., W.J.C., C.W.S.C., AT, L.K.R.K.) to ensure comprehensibility. The research team independently coded all the included articles and shared their findings online.

Stage 4: Data Characterisation and Analysis

Of the 50 included articles, 43 discussed mentoring practice and relationships, and 7 scrutinised mentoring obstacles and how to mitigate problems in surgical mentoring.

In total, 24 articles employed quantitative methods,[1,3,4,7,10,34,36,37,39,40,42,88-100] 3 were qualitative,[101-103] 5 used mixed methods,[9,38,45,104,105] 8 were literature reviews,[2,8,11,18,31,35,106,107] 5 were perspective papers,[6,30,32,33,43] 3 were descriptive in nature,[41,44,108] and 2 were systematic reviews.[5,109] Nineteen studies involved mentees only,[3,4,32,36,40,42,45,88,90,92,94-96,98,99,101,102,104,108] 4 studies involved mentors only,[1,33,100,103] 25 articles involved both mentees and mentors,[2,5-9,11,18,30,31,34,35,37,38,41,43,44,89,91,93,97,105-107,109] 1 included the views of mentees and programme directors,[39] and 1 involved chairs of departments of surgery.[10]

The review team independently 'coded' the 'surface' meaning of the same 10 included articles. Thematic saturation was achieved after 8 papers. The coding process comprised line-by-line coding and subsequently focused coding 'evolving to produce categories that responded to these codes'.[110] The independent analyses and 'negotiated consensual validation'[27] were used to delineate a common coding framework and code book. The 'detail-rich' codes were grouped together to determine semantic themes.[14,15,86,111] The data, themes, coding framework, and code book were regularly reviewed[86,112] and 'negotiated consensual validation'[27] was used to decide on the finalised themes.

Stage 5: Collating, Summarising, and Reporting the Results

The 3 themes identified were the ethical issues at the mentor or mentee level, relational level, and the host organisation level. Given that most of these concerns have not been discussed in detail in prevailing publications and to enhance use of the data, the findings will be presented in tables.

Results

Ethical issues at the individual mentor or mentee level

Ethical issues at the individual mentor or mentee level are presented in Table 2.

Table 2. Ethical issues at the individual mentor or mentee level.

Ethical issues		
Mentor	Negative attitudes towards mentee	8,9,18,36,38,41,43,45,100,103,107
	Lack of motivation	8,36,41,45
	Refusal to communicate	43
	Hostility and disrespect	45
	Failure to give mentees due credit	10,11
	Prejudice against women and/or ethnic minorities	2,11,98,100
Mentee	Lack of initiative	2,11,18,32,34,38
	Belief that seeking mentors is a sign of weakness	8,18,35,41
	Failure to take responsibility	38
	Failure to nurture mentoring relationships	32
Predisposing factors		
Mentor	Inadequate mentor training	4,5,7-10,30,98,100,106
	Inability to cater to all mentee's needs	2,10,11,30-34
	Lack of experience	9,11,34
	Personality traits and training that ran contrary to received knowledge on the ideal mentor	3,4,8,9,107
Mentee	Limited professional contact	1,35,36
Both mentor and mentee	Poor attitudes and misconceptions towards mentoring and mentoring culture	2,11,18,32,34,38

Possible solutions. Training programmes and routine evaluation of the mentoring relationship run by the host organisation were the most common proposals to address ethical issues at the mentor or mentee level. The proposed solutions are summarised in Table 3.

Ethical issues at the level of the mentoring relationship

Ethical issues at the level of the mentoring relationship are presented in Table 4.

Possible solutions. The proposed solutions explore methods to address the lack of time of both mentors and mentees, and reconcile the inherent differences between both parties. The proposed solutions are summarised in Table 5.

Ethical issues at the level of the host organisation

Ethical issues at the level of the host organisation are presented in Table 6.

Possible solutions. The role of the host organisation is key to addressing ethical issues affecting mentoring relationships. The proposed solutions are summarised in Table 7.

Stage 6: Undertaking Consultations With Key Stakeholders

Stakeholders were consulted on the findings of this scoping review to gather their opinions regarding the findings, the cost effectiveness and feasibility of actualising changes, and what they thought were other ethical concerns not discussed in this study. These findings together with limited studies on the downsides of mentoring[124-126] and a lack[127-129] of quality[126,130-135] and comprehensive[124,136-142] evaluations of mentoring processes, relations, and programmes also helped focus future studies.

Discussion

This systematic scoping review succeeds in highlighting and defining the concept of mentoring abuse in surgery that must consider the nature and conduct within mentoring relationships, the roles and responsibilities of the host organisation, the specific clinical setting, and the mentoring environment. This wider concept of lapses in ethical practice is referred to as 'mentoring malpractice'. Mentoring malpractice underlines the need for a holistic, multisource, and longitudinal view of ethical practice in mentoring that should alert programme designers and administrators to lapses in practice.

There are a number of aspects to mentoring malpractice. The first 3 pertain to the matching process, evaluations of

Table 3. Proposed solutions to ethical issues at mentor or mentee level.

ROOT CAUSES OF ETHICAL ISSUES FACED	RECOMMENDATION
Lack of proper training	1. Training programmes for both mentors and mentees focused on communication strategies, roles, responsibilities, goals, and a definition of mentorship[3,4,7-10,18,98]
Inability to cater to all needs of mentee	1. Paradigm for online mentoring to have a network of mentors to meet mentee's varied needs[4] 2. Multiple mentors for mentee[2,10,11,31,32,98] 3. Routine evaluation by mentoring committee of mentor-mentee relationship to check for potential conflicts and a failing relationship. If relationship is failing, an exit strategy, eg, a 'no fault divorce', should be implemented[10] 4. Use of social media for mentorship has the potential to establish a community of mentors for multiple needs and career stages of mentees[91]
Negative attitudes towards mentee	1. Mentees to seek the advice of a more senior colleague, possibly at a different institution, and the advice of multiple colleagues to effectively manage ending an ineffective mentoring relationship[11] 2. Training programmes for both mentors and mentees which are focused on communication strategies, roles, responsibilities, goals, and a definition of mentorship[18] 3. Routine evaluation by mentoring committee of mentor-mentee relationship to check for potential conflicts and a failing relationship. If relationship is failing, an exit strategy, eg, a 'no fault divorce', should be implemented[10] 4. Mentors with poor feedback from mentees should not be allocated to trainees[103]
Prejudice against women and/or ethnic minorities	1. Multiple mentors, especially for minority groups and women trainees[4] 2. Institutions to step up efforts to enhance faculty development opportunities by targeting professionals often marginalised from the traditional tenure-track environment[11] 3. Sex and cross-cultural exposure to foster mutual understanding and growth[2] 4. Routine evaluation by mentoring committee of mentor-mentee relationship to check for potential conflicts and a failing relationship. If relationship is failing, an exit strategy, eg, a 'no fault divorce', should be implemented[10] 5. Organisational structural support to address sex biases in medical culture and encourage sex diversity[101] 6. Mentors with poor feedback from mentees should not be allocated to trainees[103]
Failure to give proper credit or take credit of mentee's work	1. Routine evaluation by mentoring committee of mentor-mentee relationship to check for potential conflicts and a failing relationship. If relationship is failing, an exit strategy, eg, a 'no fault divorce', should be implemented[10] 2. Discussions about authorship and credit should take place at the onset of every project to avoid offence subsequently[18] 3. Mentors with poor feedback from mentees should not be allocated to trainees[103]
Failure of mentee to take initiative	1. Allowing mentees to choose their mentors helps mentees to become more proactive in the mentoring relationship[10,34] 2. Mentee may have a periodic priority list which includes his or her personal preferences, goals, and current commitments and share the list with his or her mentor[35] 3. Mentee to be open and honest during discussions and to advice, to ask for guidance where and when he or she needs it will help increase proactivity of the mentee[2,11,18]
Perception that seeking mentors is a sign of weakness	1. Institutions can dissuade this misconception and provide resources to bring mentors and mentees together through a mentoring programme[18]
Mentees have little professional contact	1. Provide formal training to mentees to teach them how to choose a mentor[10] 2. In the process of seeking mentors, potential mentees to research departmental websites, talk to other students, and evaluate a potential mentor's interactions with peers and medical students during teaching conferences or on rounds[11] 3. Senior mentoring to broaden mentee's network[31] 4. Formal mentoring programmes which facilitate exposure between students and potential mentors[1,18,36] 5. Speed mentoring programme[105] 6. Provide students shadowing opportunities and chances to assist in operating rooms to broaden professional network[107] 7. Social media can serve as a valuable tool to enhance networking of mentees in seeking mentorship[91]

mentoring relationships, and oversight and structuring of the mentoring process. All 3 practices emphasise the central role of mentoring relationships at the heart of mentoring and the role of matching and structuring the mentoring process to nurture effective mentoring relationships. These considerations draw attention to the role of the host organisation, which is tasked with supporting and evaluating the matching, assessment, policing, and structuring of recruitment, matching, appraisal, and support systems within the mentoring process. To begin, despite its central role in overseeing mentoring practice, the constituents, structure, roles, and responsibilities of the host organisation remain poorly described. This gap impacts the ability of the host organisation to consistently assess and oversee mentoring processes.

It is also apparent that failure to consider contextual factors and their influence on the mentoring process, approach, and

Table 4. Ethical issues at the level of mentoring relationship.

Ethical issues	
Competition (perceived and real) between mentors and mentees	9,11,18,41
Conflicts of interest	9,18,31
For example, mentor involved in appraisal and career progression of mentee	31
Breaches in professional boundaries (eg, inappropriate personal relationships)	2,11,31,100
Predisposing factors	
Competitive environment of surgical practice	41
Lack of time	1-5,7-9,11,18,34,36,38,39,45,88-90,97,98,103,104,108,109
Culture and sex differences	2,5,11,18,101
Generational gaps	5,11,18,42,98
Power differences inherent within surgical specialities	10,34,42
Personality conflicts	9,11,36,39,41,43,44,91,98,107
Overstepping boundaries	2,11,31,100

Table 5. Proposed solutions to ethical issues at the level of mentoring relationship.

ROOT CAUSES OF ETHICAL ISSUES FACED	RECOMMENDATIONS
Difference in culture and sex of mentor and mentee	1. Miscommunications due to differences can be avoided by establishing and clearly defining goals and objectives of the relationship[7] 2. Mentors must maintain cultural and sex sensitivity towards mentees[11,18] 3. Mentors and faculty members must gain insight into the additional challenges mentees from different backgrounds face[98,101] 4. Good communication and being perceptive to the possibility of misinterpretation or misunderstanding[2] 5. Matching cross-cultural mentor partnerships through modern communication technology[2] 6. Match mentees with mentors based on certain attributes, eg, racial, ethnic, religious, and sex differences[18]
Generational gap	1. Mentors and mentee to understand and reconcile their differences[5]
Power differential	1. Proper oversight to avoid abusive situations[10] 2. Mentors should support mentees through a collaborative partnership where neither party has power over each other[31]
Personality conflict	1. 'Speed-matching' that entails quick meetings between mentors and mentees for each party to make a quick evaluation of their willingness to work together[34,105] 2. Self-selection of mentors by mentees[3] 3. Active listening of mentor and constructive, early, and definitive feedback to mentees[43,98] 4. Personality assessment can provide a guide for addressing problems with mentee and become an additional tool in the training process[44] 5. Encourage residents to meet with at least 3 potential faculty members and submit ranked mentor preferences to the programme director[97] 6. Extensive data collection and analysis of resident profiles to help mentors be aware of which factors are associated with match success[93]
Lack of time	1. Greater emphasis and support at the institutional level are needed to address the issues of time[7] 2. Give financial incentives to encourage mentors to make time[8] 3. 'Protected time' within the work schedule for mentoring responsibilities will provide mentors and mentees with time and reduce obligations elsewhere[5,96,97,100,103,104,108] 4. Modern communication technology can be used to enable the mentee to communicate with a compatible mentor regardless of distance[2,91] 5. Recruit potential faculty mentors with full-time surgical faculty and academic appointments who are more likely to be able to dedicate the effort necessary to facilitate a productive mentorship experience[97]
Inappropriate boundaries or competition between mentor and mentee	1. Mentee may consider seeking the advice of a more senior colleague[11] 2. Routine evaluation by mentoring committee of mentor-mentee relationship to check for potential conflicts and a failing relationship. If relationship is failing, an exit strategy, eg, a 'no fault divorce', should be implemented[10]
Conflicts of interest between mentor and mentee	1. Effective and structured oversight of mentoring relationships to avoid abusive situations[10] 2. Routine evaluation by mentoring committee of mentor-mentee relationship to check for potential conflicts and a failing relationship. If relationship is failing, an exit strategy, eg, a 'no fault divorce', should be implemented.[10] Mentees can then seek a mentor without similar conflicts of interest[18] 3. Distance mentoring so that mentor's advice is less likely to be affected by conflicts of interest that arise within a shared place of work[31]

Table 6. Ethical issues at the level of host organisation.

Role of host organisation	
Recruitment, training, and matching of mentors to mentees, supporting the parties involved, and setting the direction through the course of the mentoring relationship	12,13,62,113-123
Predisposing factors	
Lack of institutional support	1,3,8,10,11,18,34-37,39,41,90-92,95,97,98,104,107-109
Poor access to trained mentors	1,4,5,18,35-39,90,91,95,97,102,104,107,108
Poor access to same-sex mentors	1,2,5,7,9,11,18,31,35,36,40,91,100,105,107
Lack of protected time	18,34,35,104,109
Insufficient recognition of mentor contributions	3,8,10,18,39,98
Insufficient financial rewards for mentor	8,18,37,41,109
Failure to facilitate adequate mentee-initiated relationships	2,4,7,10,11,31,34,91,92,95,98,107
Poor support of formal matching	1-3,7,10,11,31,34,39,98,107
Inadequate mentoring networks that support mentees	8,11,90,97,108
Absence of official mentoring programmes	1,36,39,91,92,95,107

Table 7. Proposed solutions to ethical issues at the level of host organisation.

ROOT CAUSES OF ETHICAL ISSUES FACED	RECOMMENDATIONS
Lack of mentors	1. Web-based system for pairing of appropriate mentors and mentees and virtual telementoring system[4,109] 2. Identify a number of people with the skills and motivation to be mentors, personality and enthusiasm for the process, thereby creating a pool from which to draw on[8] 3. Co-mentoring, peer-group mentoring, and long-distance mentoring can be successful when clear roles and goals are established for each mentor relationship[11,107,108] 4. Near-peer mentoring can be suitable to mentor individuals through social, teaching, and academic activities[94] 5. Provide performance improvement and continuing medical education credits to faculty as incentives to mentor research activities[108]
Lack of same-sex mentors	1. Recruit additional experienced female surgeons for the mentor pool[9] 2. Mentors and mentees to understand and reconcile their differences to allow surgeon to mentor mentees of any profile[5] 3. Employ sex-mindful mentorship with scarcity of female mentors by establishing networks for connecting female faculty with regional and international surgical women's groups[101] 4. Use of social media allows female surgeons to build a larger network of same-sex mentors or mentees who may be remote from where they live or work[91]
Lack of institutional support	1. Design a dedicated mentoring programme[1,4,8,10,89,92,98,105] 2. Define a set of standardised criteria for mentoring scheme[8,31,41] 3. Pairing of mentors and mentees[8,10,31,105,106] 4. Training of mentors[3,8-10,31,41,100,103,105,106] 5. Training of mentees[31] 6. Clarification of goals and roles, eg, mentor-mentee contract[3,8-10,31,89,105] 7. Monitoring and evaluation[3,8,31,41] 8. Give financial incentives to mentors[8,10] 9. Provide incentives such as recognition for mentors[10,18,36,97,103,105] 10. Institution to provide economic support for mentorship programme[10,105] 11. Protected time for mentoring[1,34,36,96,97,100,103,104,108]
Imbalance between self-identification and formal assignment of mentors	1. Adopting a mixed approach to matching[2,3,7,31,36] 2. Establish formal mentorship initially to provide support and structure during formative years and subsequently allow residents to self-identify mentors who better align with their current goals[95]

programme[12-15] and the impact of mentoring's goal-sensitive, context-specific, mentee-, mentor-, host-organisation-, mentoring-approach-, mentoring-relationship-dependent nature[12-15,48,49,51-53,72,143-147] underline the limitations of prevailing tools. Inconsistencies in the mentoring approach make it difficult to assess the selection, matching, and training and mentoring processes. These variabilities compromise alignment of expectations that then endanger mentoring relationships and

hinder effective policing of expectations, roles, and responsibilities and compromise mentoring standards. These considerations impair the ability of the host organisation to evaluate and support programmes.

Limitations to mentoring tools also arise due to failure to account for the culture of the programme that stem from the manner that breaches in mentoring practice are perceived.[47,148] Larkin's[149] characterisation of unacceptable behaviour which includes discrimination of patients and colleagues based on race, sex, or creed, performing procedures without consent and/or appropriate indications, and breaking patient confidentiality would in the *present* climate be viewed as egregious lapses warranting censure.[47,148] Similarly, many practices deemed egregious by Larkin[149] would in the *present* day be worthy of dismissal.[47,148] Such shifts in conceptions reflect changes in thinking and underline the influence of regnant social, professional, and academic norms, values, and beliefs which warrant further evaluation.[47,148] This indicates the need for context-dependent, culturally appropriate understanding of mentoring and professional standards and culture given changes in guidelines, codes of conduct, and standards of practice.

Another aspect of mentoring malpractice regards distributive justice or 'giving to each that which is his due'.[150,151] In the surgical mentoring context, it may be more apt to refer to "'her" due' when it is women who often have little access to the benefits of mentoring. Although there are programmes focused on increasing access for women and learners from ethnic minorities through specific stipulations in the matching processes, how access to the limited resources within mentoring programmes is addressed remains unclear. Fair access to mentoring programmes may also be limited by the overall goals such as those that prioritise publications and successful grants. Such goals may place greater weight on the recruitment, selection, and matching of mentees with proven research and academic track records rather than prioritising equal access based on needs or on development of talent. Rationing of mentoring resources is also inevitable in the face of funding restrictions raising questions about how transparent recruitment decisions are.[152] This ought not to be tied to waste management which similarly imposes stricter matching processes to minimise the potential for failed relationships.[152] The notion that mentees and mentors can have a 'trial period' to work together before confirming a match may be a luxury many programmes cannot afford making poor support of matching, assessment, and oversight an ethical concern.[153]

No discussion of mentoring malpractice would be complete without due considerations of mentoring dynamics or interactions between mentee, mentor, and the host organisation within their particular mentoring relationship. Mentoring quality builds on effective mentoring dynamics[154-171] and on interactions facilitated by appropriate and personalised execution of mentoring responsibilities, effective responses on the part of the mentee, and the ability of host organisations to create and support mentoring environments and relationships. However, little is known about how these facets blend with one another, how the quality of mentoring relationships may be improved, and their impact on mentoring malpractice.

Limitations

Attenuating fears of ethical lapses in mentoring in surgery will also benefit from establishment and consistent policing of a code of conduct and standards of practice and clear delineation of the roles and responsibilities of mentors and mentees. The role of e-mentoring and other technology-based supplements to the mentoring process should also be a focus for further study.

It is apparent that there are substantial gaps in the primary data. First, most of the included articles focus on specific aspects of mentoring and confine their attention to specific ethical concerns rather than take a holistic perspective of ethical and professional concerns. This hampers the understanding of ethical issues in the mentoring process. Second, prevailing accounts of the mentoring process are rarely comprehensive and not longitudinal and accentuate insufficient insight into mentoring led in part by a lack of effective and validated assessment tools. A deeper understanding of the mentoring process will facilitate redesigning of mentorship tools to cater to the entangled nature of mentoring. Third, many solutions proposed are rudimentary and need to be contextualised and re-evaluated given the diversity of mentee, mentor, and host organisation populations, mentoring objectives, relationships and nature, and the respective educational and health care scenes. It is also crucial to recognise the principal goals, support, and inclination of the institution.

Conclusions

Although this systematic scoping review's sketch of the ethical issues facing mentoring in surgery which will be of value to programme administrators, organisers, mentees, and mentors alike, there remain significant gaps. Absent are effective understanding of mentoring dynamics, the quality and nature of mentoring relationships, holistic mentoring environment and culture, and the predisposing factors behind mentoring malpractice. Missing too are longitudinal and consistent assessments of ethical issues in surgical mentoring.

It is only with better understanding of mentoring malpractice in surgery can effective assessment be designed to catch issues at an early stage. Drawing from lessons learnt from the closely related topic of assessments of professionalism,[172-176] mentoring malpractice must first be seen as a multidimensional construct that demands assessments of mentoring malpractice be longitudinal, multisource, multidimensional, and at an individual, interpersonal, and societal or institutional level.[172-176] Assessments also ought to consider the attributes and behaviours of positive ethical behaviours and include feedback from and to all parties.[171-175] It is only thus can mentoring in surgery be advanced and surgical training be better supported and evaluated.

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Author Contributions

FQHL, WJC, CWSC, YPT, SM, and LKRK conceptualised the study. FQHL, WJC, CWSC, EKYH, AMCC, YPT, SM, and LKRK proposed the methodology. FQHL, WJC, CWSC, YPT, SM, and LKRK performed the formal analysis. FQHL, WJC, CWSC, KTT, YPT, SM, and LKRK performed the investigation. FQHL, WJC, CWSC, YPT, SM, and LKRK curated the data. FQHL, WJC, CWSC, YPT, SM, and LKRK prepared the original draft of the manuscript. All authors reviewed the paper. FQHL, WJC, CWSC, KTT, EKYH, YPT, SM, and LKRK edited the paper.

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Supplemental Material

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