

Conflict Management Competencies for Surgical Residents: A Scoping Review

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Received: 2025 June 17

Revised: 2025 September 11

Accepted: 2025 October 29

Published online: 2025 October 29

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Citation:

Sohrabi Z, Bigdeli Sh, Nosrati S.
Conflict Management Competencies
for Surgical Residents: A Scoping
Review. *Strides Dev Med Educ.* 2025
October; 23(1):e1607.

doi:10.22062/sdme.2025.201408.1607

Abstract

Background: Conflict is prevalent in surgical clinical environments due to hierarchical cultures, communication challenges, and professional differences. Such conflicts adversely affect healthcare professionals, team performance, and patient safety. Despite their importance, conflict management competencies are often overlooked in surgical residency training.

Objectives: This review aims to identify the essential competencies in conflict management required of surgical residents.

Methods: A scoping review was conducted following Arksey and O'Malley's five-stage framework. Comprehensive literature searches were performed across multiple national and international databases from January 2011 to March 20, 2024. Data extraction adhered to PRISMA-ScR guidelines, and inductive content analysis was used to synthesize findings.

Results: Of 9,252 retrieved articles, 35 met the inclusion criteria. Three main categories emerged: (1) Educational Approaches, including experiential learning methods such as simulations and role-playing; (2) Conflict Management Competencies, emphasizing critical skills such as emotional regulation, negotiation, communication, empathy, role clarity, and collaborative problem-solving; and (3) Contextual Factors influencing conflicts, including hierarchical structures, cultural diversity, and institutional dynamics.

Conclusion: Conflict in clinical settings is a multifaceted issue influenced by individual skills, pedagogical methods, and systemic factors. Effective conflict management requires integrated educational programs, combined with organizational culture reforms that promote transparent communication and equitable power dynamics. Embedding conflict management training within competency-based medical education frameworks is essential to prepare surgical residents better and improve patient care outcomes.

Keywords: Conflict Management; Surgical Residents; Competency-Based Medical Education; non-Technical Skills

Background

The operating room's hierarchical culture and leadership expectations contribute to negative emotions and communication challenges (1). Conflict in surgical teams is common and can negatively impact healthcare professionals, team effectiveness, and patient safety (2). Conflict in surgical environments can arise from a range of factors, including individual differences, communication styles, and professional hierarchies (3). Surgical residents face significant interpersonal conflicts within healthcare teams. These conflicts contribute to

stress, burnout, and job dissatisfaction among healthcare professionals (4). Surgical resident training programs often overlook soft skills like conflict management, despite their importance in healthcare settings (5). Recent research highlights the critical need to incorporate conflict management and communication training into surgical residency programs, addressing a longstanding gap in curricula that have traditionally focused on clinical and technical competencies (6). Conflict management competencies are essential in various contexts, including

organizational performance, local governance, and educational settings (7).

While conflict management is recognized as an essential competency across diverse settings, the surgical environment—with its steep hierarchies, high-pressure operative dynamics, and interprofessional teamwork—creates a particularly unique and critical area for focused study (8). Competency-based medical education (CBME) represents a paradigm shift in medical training, centering on learners' ability to demonstrate essential competencies rather than advancing based on time spent in training. This model prioritizes integrating theoretical knowledge with clinical practice, ensuring that students develop practical, evidence-based skills in real-world settings (9). Clive Chappell et al. (10) and Nazik Hammad (11) emphasize the importance of competency-based education in designing training programs that accurately diagnose educational needs and improve the applicability of learning. Despite some studies in the field of conflict in healthcare settings, especially in nursing and health management (12-14), given the complexity of the surgical environment and the critical role of teamwork in achieving successful treatment outcomes, identifying and developing competencies in conflict management for surgical residents is an undeniable necessity (10). However, there has been limited targeted and coherent research on the specific roles, challenges, and competencies required of surgical residents in managing conflict. This review focused on surgical residents because conflict dynamics in surgical training are shaped by unique factors, including steep hierarchies, high-pressure operative environments, and multidisciplinary team interactions. These conditions differ significantly from other residency programs (2). The study aims to map conflict management competencies essential for surgical residents in clinical settings. Findings provide valuable insights for researchers, educators, and policymakers to enhance surgical education and professional performance.

Objectives

This review aims to identify the essential competencies in conflict management required of surgical residents.

Methods

Scoping reviews are designed to map the existing body of literature on a broad topic area, offering an overview of potentially extensive and diverse research (11). This scoping review was conducted following

Arksey and O'Malley's (11) iterative five-stage framework, as outlined Figure 1.

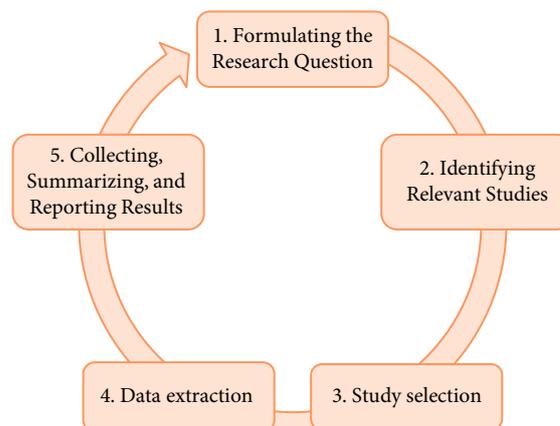


Figure 1. Steps in Conducting the Study

1. Identifying the Research Question

The research question was developed using the PCC framework (Population, Concept, and Context), as follows:

Population: Surgical residents

Concept: Conflict management competencies

Context: Clinical environment

This structured approach ensured the scope of the review remained focused and clinically relevant, addressing the specific needs of surgical trainees who encounter conflict in real-world healthcare contexts.

The main research question was as follows:

What are the required competencies for clinical conflict management in surgical residents?

The specific questions are:

1. *Which conflict management competencies are essential for surgical residents in the clinical setting?*

2. *What strategies are effective for teaching and developing conflict management competencies in the clinical setting?*

3. *What contextual factors (e.g., cultural, institutional, hierarchical) influence conflict situations and their resolution in a clinical setting?*

2. Identifying Relevant Studies

A comprehensive search strategy was developed using MeSH and standardized keywords to ensure broad and accurate retrieval across databases. Searches were conducted in both national (SID, Magiran, Irandoc, Civilica) and international databases (PubMed, Scopus, Web of Science, ProQuest, ERIC, EBSCO, Emerald, and Google Scholar). All retrieved records were screened using predefined eligibility criteria to include only studies involving surgical residents, with keywords summarized in Table 1.

3. Study Selection and Screening

All retrieved articles were imported into EndNote (Version 18), and duplicates were removed. Study selection proceeded with title and abstract screening, followed by full-text review of potentially relevant studies. To ensure methodological rigor and maintain relevance, predefined inclusion and exclusion criteria—based on the research objectives—were applied during article selection (Table 2). The final selection of articles included in the review was independently assessed by two authors (Z.S. and S.N.). Any disagreements or discrepancies were resolved through discussion with a third author (Sh.B.) to reach a consensus, ensuring a rigorous and unbiased screening process.

4. Data Extraction

To ensure transparent and comprehensive data reporting, this scoping review adhered to the PRISMA Extension for Scoping Reviews (PRISMA-ScR) checklist (12). This form was used to extract data from the included studies. A team meeting was held to ensure a shared understanding of terminology before distributing articles. The initial studies were assigned to two authors, and the data from the articles were then entered into the form. The data extraction table included items such as the year of study, article language, country, authors, conflict management competencies, and educational strategies for conflict management.

5. Collecting, Summarizing, and Reporting Results

After extracting data from the included studies, inductive content analysis was used to analyze the findings. The process began with coding, where key concepts were identified from the extracted data. Similar or related codes were then grouped into broader categories. This step helped organize the data by identifying patterns and conceptual similarities among the codes.

Process for Data Synthesis:

Data were extracted from included studies using a structured PRISMA-ScR form covering Dimension, Main Components, Subcomponents, Key Findings, Objective, Study Type, Country, and Authors (Appendix 1).

Extracted data were summarized through tables and figures showing publication year, study type, and country distribution. An inductive content analysis was then conducted to identify key codes, subcategories, and categories related to conflict management competencies in surgical settings. Final results, limitations, and recommendations for future research were comprehensively reported.

Results

The number of retrieved articles from each database is shown in Table 3.

A total of 9,252 articles were retrieved in the database search. After duplicate article removal and screening, 35 articles were selected for final analysis. The characteristics of the final extracted articles are included in Appendix 1. The PRISMA flow diagram for the study is shown in Figure 2 below.

Among the included studies, the subspecialties represented were general surgery (30 studies), orthopedics (1 study), and mixed surgical cohorts (4 studies). This breakdown provides additional insight into the contexts in which conflict management competencies have been studied.

Distribution of Studies by Publication Year

The 35 included studies were published between 2011 and 2024. The most studies were published in 2011 (13-16) and 2012 (17-20), with 4 studies each. The distribution of studies by year of publication is presented in Figure 3.

Table 3. Number of retrieved articles from each database

Database	Number of Articles Retrieved
SID	58
Magiran	32
IranDoc	29
Civilica	47
ERIC	345
Scopus	509
PubMed	2,902
ProQuest	621
PsychINFO	170
Web of Science	916
Emerald	230
EBSCO	223
Google Scholar	3,150
Total	9,252

Type of Studies

The 35 included studies were classified into four main categories; the types of the final included studies are presented in Table 4.

Distribution of Studies by Country

A total of 35 studies were included in the review, originating from various countries. The United States contributed the largest number of studies, with 15 (6, 13, 15, 18-29). The distribution of studies by continent is presented in Figure 4.

Content Analysis of Extracted Data

An inductive content analysis approach was employed to analyze the extracted data.

The process began with identifying codes and their frequency. Similar codes were grouped into subcategories, which were further refined into broader categories. The codes and their corresponding categories are presented in [Tables 5 and 6](#).

Discussion

This scoping review aimed to map the essential conflict management competencies for surgical residents in clinical settings. As a result of the content analysis process, three main categories were identified that reflect the multifaceted nature of conflict in clinical settings:

(1) *Educational Approaches to Conflict Competency Training.*

(2) *Conflict Management Competencies.*

(3) *Contextual Factors of Conflict Formation.*

1. Educational Methods: Bridging Theory and Practice

The first category includes formal and informal instructional strategies focused on experiential and reflective learning approaches—such as simulations, role-playing, case studies, and continuous feedback—to prepare learners for real-world conflict management effectively. The diverse teaching strategies—from formal courses and workshops to experiential learning through simulations and role-playing—highlight the complexity of preparing healthcare professionals for conflict resolution. These findings align with Kolb's experiential learning theory (30), emphasizing that active engagement with real-life-like scenarios enables learners to internalize and apply conflict management skills more effectively. Conflict simulation with feedback underscores Ericsson's concept of deliberate practice (31), reinforcing the importance of feedback and iterative learning in mastering conflict competencies. Such approaches not only develop cognitive understanding but also foster emotional readiness and behavioral adaptability, critical for navigating the unpredictable, high-stakes nature of clinical conflicts.

2. Conflict Management Competencies: Interpersonal and Emotional Foundations

The second category highlights the central competencies required for conflict resolution, including emotional regulation, communication, empathy, role clarity, and collaborative problem-solving as fundamental to resolving clinical conflicts. The competencies identified are consistent with established psychological and organizational theories. Empathy and perspective-taking

facilitate mutual understanding and reduce miscommunication, resonating with Johnson and Johnson's Social interdependence theory (32). Emotional regulation's prominence reflects current evidence linking healthcare workers' stress management capacity with conflict outcomes (33).

3. Social Context and Organizational Factors: The Systemic Lens

The third category underscores the influence of systemic and contextual factors that shape conflict dynamics beyond individual interactions. Contextual factors such as hierarchical power imbalances, organizational culture, and political dynamics emerge as fundamental in shaping conflict patterns. These findings support Schein's model of organizational culture (34) and Coser's structural conflict theory (35), which articulate how embedded power relations and cultural norms create fertile ground for conflict. The identification of the political and social context extends the analysis to Jackson's social conflict resolution (36), emphasizing that conflict cannot be fully understood without considering the broader socio-cultural environment. Role ambiguity's influence on conflict supports role theory (37), highlighting how unclear expectations increase interpersonal tension.

Thus, conflict management requires not only skill acquisition but also clarity in professional roles. This systemic perspective underscores the need for organizational interventions alongside individual skill development. As Bronfenbrenner's (38) socio-ecological model suggests, effective conflict management must operate across multiple levels—individual, team, and organizational—to produce sustainable change.

Our integrative findings extend prior studies (39-41) by demonstrating the interconnectedness of educational, interpersonal, and organizational domains. While earlier research often examined these factors separately, our analysis shows their dynamic interplay and cumulative impact, underscoring that isolated interventions may fail to address the root causes of clinical conflict.

Strengths and Limitations of the Study

The key strengths and limitations of this scoping review are summarized in [Table 7](#), providing an overview of its methodological rigor and contextual boundaries.

Practical Implications

The practical implications of this review for education, training, and organizational leadership are summarized in [Table 8](#).

Conclusion

This scoping review synthesizes evidence that effective conflict management for surgical residents is a multifactorial competency requiring integrated development through tailored education and supportive organizational structures. Embedding these principles into CBME frameworks is essential for fostering resilient surgical teams and safeguarding patient safety. Future research should explore how these principles can be embedded into competency-based medical education to cultivate collaborative, resilient healthcare teams.

Acknowledgements: The authors express their sincere gratitude to the Center for Educational Research in Medical Sciences for their support.

Conflict of interests: There is no conflict of interest.

Ethical approval: This study received approval from the ethics committee of the School of Medicine at Iran University of Medical Sciences (Code: IR.IUMS.FMD.REC.1403.015).

Funding/Support: This research was supported by the Research Deputy of Iran University of Medical Sciences.

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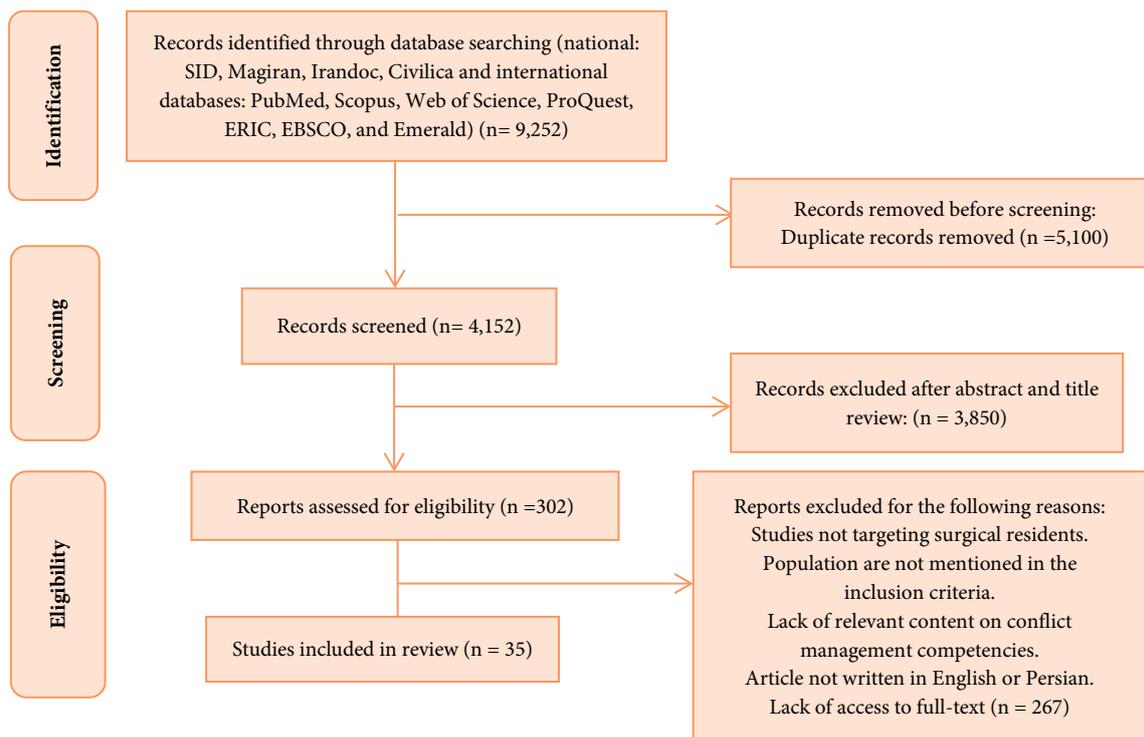


Figure 2. PRISMA flow diagram of the study selection process

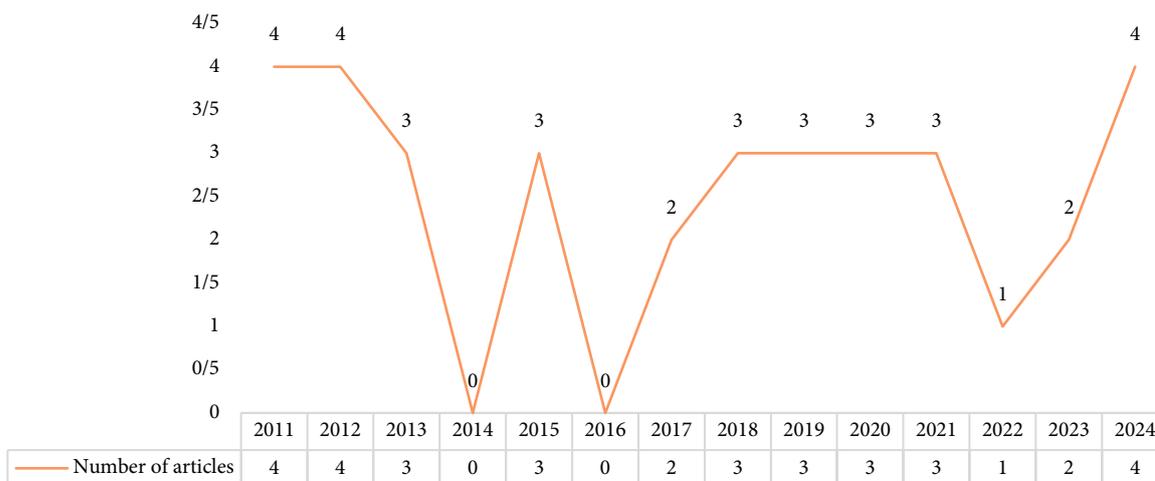


Figure 3. Publication Year of Studies



Figure 4. Distribution of Extracted Articles Based on Geographical Continents

Table 1. Keywords and Search Terms used in this study

Concept 1: Conflict management		Concept 2: Competency		Concept 3: Clinical setting		Concept 4: Surgical assistants
OR	AND	OR	AND	OR	AND	OR
Conflict direction		Competence		Clinical context		Surgical residents
OR		OR		OR		OR
Conflict handling		Ability		Clinical		Surgical Trainee
OR		OR		Environment		OR
Conflict control		Capacity		OR		Surgical practitioners
OR		OR		Clinical location		OR
Conflict Resolution		Aptitude		OR		Junior surgeons
		OR		Operating Room		
		Skill		Environment		
		OR		OR		
		Capableness		Healthcare Setting		
				OR		
				Clinical situation		
				OR		
				Clinical position		
				OR		
				Hospital Setting		

Table 2. Eligibility Matrix: Inclusion and Exclusion Criteria

Study Characteristics	Inclusion Criteria	Exclusion Criteria
Population	Studies focusing explicitly on surgical residents or assessing their conflict management skills.	Studies not targeting surgical residents or lacking a clear population definition.
Concept	Studies that define, teach, or evaluate conflict management competencies.	Studies unrelated to conflict management or focused solely on technical/therapeutic issues.
Context	Studies conducted in or adaptable to real clinical settings.	Studies in non-clinical contexts or lacking applicable components.
Time Frame	Published between January 1, 2011, to March 20, 2024.	Published outside this range.
Language	English and Persian.	Any language other than English or Persian.
Study Design	Original research, reviews, and relevant letters to the editor.	Case reports, conference abstracts, editorials.

Table 4. Types of the final included studies

Methodology	Method	Number of Studies
Quantitative Studies	Cross-sectional/Descriptive	8
	Retrospective	1
	Experimental (including RCT and intervention studies)	2
	Quasi-experimental	1
	Survey-based	3
Qualitative Studies	Content Analysis	3
	Phenomenological	2
	Grounded Theory	1
	Other (e.g., focus group or unspecified qualitative)	2
Mixed-Methods Studies	Mixed-methods (exploratory/explanatory not specified)	2
Review Studies	Systematic Review	5
	Scoping Review	3
	Analytical Review	2
Total		35

Table 5. Codes and their frequency

N.	Code (Frequency)	N.	Code (Frequency)	N.	Code (Frequency)
1	Brief didactics training (12)	18	Evidence-Based practice (11)	35	Stress (8)
2	Workshop-based training (9)	19	Professionalism (7)	36	Dynamic culture (6)
3	On-the-job and clinical environment training (7)	20	Emotional Intelligence (8)	37	Lack of proper planning (8)
4	Conflict simulation with feedback (6)	21	Managing hierarchy (7)	38	Organizational hierarchy (12)
5	Role-playing (5)	22	Self-improvement (7)	39	Political and social context (10)
6	Case study-based training (7)	23	Self-awareness (9)	40	Lack of medical personnel (5)
7	Experiential learning (7)	24	Active listening (6)	41	Diversity of roles and specialties (6)
8	Problem-Based Learning (6)	25	Clinical experience (7)	42	Clinical burnout and stress (6)
9	Team-based learning (9)	26	Uncertainty about treatment method (6)	43	Weak/incomplete communication (12)
10	Lecture (5)	27	The variety of moral, philosophical views (8)	44	Unclear responsibilities (4)
11	Reflective practice (6)	28	Insufficient patient information (7)	45	The educational nature of the clinical center (6)
12	Communication skills (8)	29	Variety of surgical procedures (6)	46	Delay reporting and managing conflicts (10)
13	Negotiation skills (14)	30	Unscientific decision making (6)	47	Autocratic leadership (3)
14	Empathy (8)	31	Role ambiguity (6)	48	Negative environments (6)
15	Flexibility (9)	32	Complexity of the clinical environment (9)	49	Judgment and decision-making skills (8)
16	Situations Analyzing skill (10)	33	Workload (11)	50	Check out other views (10)
17	Stress management (6)	34	Different scientific and experimental levels (5)		Total: 362

Table 6. Codes, sub-category, category, and themes obtained from articles

Category	Subcategory	Code (Frequency)
Educational Approaches to Conflict Competency Training	Formal and Structured Training	Brief didactics training (12)
		Workshop-based training (9)
		On-the-job and clinical environment training (7)
		Lecture (5)
	Interactive and Experiential Learning	Conflict simulation with feedback (6)
		Role-playing (5)
		Case study-based training (7)
		Experiential learning (7)
		Problem-Based Learning (6)
		Team-based learning (9)
Reflective practice (6)		

Conflict Management Competencies	Intrapersonal Skills	Empathy (8)
		Self-awareness (9)
		Self-improvement (7)
		Emotional Intelligence (8)
		Stress management (6)
		Flexibility (9)
		Clinical experience (7)
		Situations Analyzing skill (10)
		Evidence-Based practice (11)
		Judgment and decision-making skills (8)
		Interpersonal and Professional Skills
	Professionalism (7)	
	Managing hierarchy (7)	
	Contextual Factors of Conflict Formation	Social Context and Organizational Factors
Active listening (6)		
Role ambiguity (6)		
Complexity of the clinical environment (9)		
Workload (11)		
Dynamic culture (6)		
Insufficient patient information (7)		
Organizational hierarchy (12)		
Lack of medical personnel (5)		
The educational nature of the clinical setting (6)		
Delay reporting and managing conflicts (10)		
Unclear responsibilities (4)		
Autocratic leadership (3)		
Negative environments (6)		
Personal and Role-related Factors	Variety of surgical procedures (6)	
	Diversity of roles and specialties (6)	
	Lack of proper planning (8)	
	Personal and Role-related Factors	Clinical burnout and stress (6)
		Political and social context (10)
		Uncertainty about treatment method (6)
		The variety of moral, philosophical views (8)
		Unscientific decision making (6)
		Different scientific and experimental levels (5)
		Weak/incomplete communication (12)
		Stress (8)

Table 7. Strengths and Limitations of the Review

Category	Description
Strengths	<ol style="list-style-type: none"> 1. This scoping review systematically mapped a decade’s worth of literature, providing a comprehensive overview of conflict management competencies relevant to surgical residents in clinical settings. 2. Inclusion of both national and international databases expanded the scope and relevance of findings across diverse healthcare systems. 3. Inductive content analysis allowed for the identification of key categories that offer practical insights for curriculum development and organizational policy.
Limitations	<ol style="list-style-type: none"> 1. Potential publication bias: Relevant studies may have been missed due to limited indexing or non-publication in peer-reviewed sources. 2. Language bias: Restriction to English and Persian studies may have excluded evidence from other regions (e.g., South America). Future reviews, including additional languages, could provide a broader perspective. 3. Study heterogeneity: Variability in study design, settings, and populations limited comparability and synthesis. 4. Lack of quality assessment: As a scoping review, no formal appraisal of methodological quality was conducted. 5. Context specificity: Findings from culturally or institutionally specific studies may not be generalizable to all clinical environments.

Table 8. Recommendations for Education, Training, and Organizational Leadership

Domain	Recommendations
Education and Training	<ul style="list-style-type: none"> • Develop diverse learning programs combining formal instruction with experiential methods such as simulations, role-playing, case studies, and on-the-job training. • Embed continuous formative assessments to provide ongoing feedback and support deliberate skill refinement. • Integrate emotional intelligence and empathy training to improve interpersonal conflict resolution, focusing on emotional regulation and effective communication. • Design curricula that are sensitive to cultural, organizational, and socio-political contexts affecting conflict. • Clarify roles and responsibilities clearly within the curriculum to reduce ambiguity and role-based conflicts. <ul style="list-style-type: none"> • Encourage lifelong learning and reflective practice to support sustained development of conflict management competencies.
Organizational Leadership	<ul style="list-style-type: none"> • Cultivate transparent, democratic leadership and equitable power distribution. • Enhance communication infrastructure to facilitate information flow and early conflict detection. • Promote a positive organizational culture valuing open dialogue and shared goals. • Embed conflict management practices across individual, team, and organizational levels within healthcare institutions.

Appendix 1. Characteristics of final extracted articles

Authors	Country	Study Type	Objective	Key Findings	Subcomponents	Main Components	Dimension
Surapaneni KM.(42)	India	Analytical review	ABC framework to enhance residents' conflict resolution skills	Expertise recognition, power balance, and transparent communication improve teamwork and patient-centered care	Recognizing expertise, Role and power balance, Transparent and empathetic communication	Respect for expertise, Balanced decision-making, Clear communication	Individual Interpersonal Organizational
Mohseni F, & et. al.(43)	Iran	Scoping review	Review of educational methods for teaching conflict management to medical students	Active and interactive methods were frequently used, but no single method proved superior.	Role-playing, Standardized patient, Case-based simulation	Learner-centered approaches for better conflict management	Active learning methods for conflict management in medical students
Mohseni F, & et. Al. (44)	Iran	Randomized controlled trial	Evaluating the impact of Fogg model-based training on medical students' attitudes toward conflict management	Training with the Fogg model significantly improved medical students' attitudes toward conflict management.	Increasing motivation, simplifying conflict management, Using supportive learning tools (e.g., reminder messages)	Enhancing communication, Impact of Fogg model on behavior change, Strengthening conflict resolution skills	Active learning methods for teaching conflict management
Okoli C, & et. al.(45)	India	Analytical Review	Improving residents' conflict resolution skills to enhance teamwork and patient-centered care	Fifty-two point two percent of residents lacked conflict management knowledge; 93% preferred avoidance; 83% interested in training	Decision-making, emotional regulation, effective communication	Cognitive, Emotional, Behavioral Skills	Conflict Competence
Gunasingha & et. al.(24)	USA	Quasi-experimental intervention study	Examining variations in conflict resolution styles among medical residents and their impact on conflict management skills	Integrating conflict management in curricula improved residents' skills. Simulation and virtual reality were effective.	Motivation enhancement, Simplified strategies, Supportive learning tools	Conflict resolution competency, Team communication improvement	Continuous training and assessment in conflict management
Konlan KD, & et. al. (46)	Ghana	Qualitative	Assessing the impact of conflicts among clinical professionals on patient care in Tamale Teaching Hospital	Conflicts affect professionals, hospitals, and policies. Poor conflict management leads to widespread negative consequences. Conflicts must be addressed immediately to avoid time and cost loss. High conflict experience exists within clinical teams.	Individual training, Organizational planning	Impact of conflicts on different hospital aspects	Strategic planning for clinical conflict management
Mohammed EN.(47)	Nigeria	Descriptive, cross-sectional	Examining knowledge, causes, and experiences of interprofessional conflict in a Nigerian university	Majority of clinical team members experienced interprofessional conflict, delaying career advancement. Poorly managed conflicts negatively impact patient care and accessibility to high-quality healthcare.	Addressing conflict sources, Ensuring a peaceful healthcare environment	Prevalence and impact of interprofessional conflict, Career progression delays	Fair compensation and conflict reduction in clinical teams

Andriopoulou M, & et. al.(48)	Greece	Descriptive, cross-sectional	Examining conflicts in the operating room, identifying causes, and proposing management strategies	Most participants experienced interprofessional conflicts, with workload and compensation disparities being key contributors. Lack of awareness about conflict management strategies was widespread. Organizational policies and democratic leadership improved resolution.	Early conflict identification, Democratic leadership, Equity in compensation, Empathy-driven teamwork	Role differentiation, Leadership structures, Fair resource distribution	Necessity of conflict management training for nurses and physicians in the operating room
Lyons O, & et. al. (49)	UK	Mixed-methods study	Implementation and evaluation of a conflict management framework in pediatric healthcare services	Training interventions reduced time spent on conflict resolution by 24%. Conflict resolution was more challenging for older patients and severe cases. Educational investments improved healthcare outcomes and efficiency.	Effective educational interventions, Patient-centered conflict management, Complexity of resolution in high-patient-load scenarios	Reducing clinical workload, Training healthcare teams, Minimizing patient hospitalization costs	Strategic planning and investment in conflict management competencies
Sivrikova N, & et. al.(50)	Russia	Survey	Assessing students' competencies in conflict management	Participants reported adequate conflict resolution skills. Self-reported competencies highlighted the importance of understanding communication context and predicting actions. Most students valued principles of tolerance but rated personal resilience lower. 80% agreed on non-violence as a core principle.	Multidimensional approach, Resilience training, Emotional regulation	Communication skills, Self-assessment of conflict resolution, Inclusion in educational programs	Long-term educational planning and integration of conflict management competencies in curricula
Dossett LA, & et. al.(23)	USA	Qualitative	Exploring interprofessional conflict scenarios among surgeons, its impact on personal, professional, and patient outcomes, and surgeons' decision-making in conflict situations	Conflict often stems from communication breakdowns and performance issues. Participants reported personal and professional consequences, including self-doubt, anxiety, and career delays. Reduced communication due to unresolved conflicts posed risks to patient safety. Identified strategies include relationship management, improved communication, and enhanced social capital.	Performance-related conflict sources, Organizational policy violations, Cultural tensions	Environmental resources and clinical team competencies, Gender-based disparities, Evidence-based guidelines	Strategic and structured planning for conflict management

Michael Shanahan E, & et. al. (51)	Netherlands	Qualitative, phenomenological	Exploring clinical educators' lived experiences of interprofessional conflict in medical settings	Physicians highlighted the psychological and behavioral issues of students as a major factor influencing conflict occurrence and intensity. Conflicts had a significant emotional impact on physicians, often leading to avoidance strategies. The study underscored how physician perspectives on challenging student interactions affected educational quality.	Challenges in evaluating attitudes, Role conflict due to workload, Professional behaviors and communication	Physicians' heightened responsibility, Psychological and attitudinal assessment	Addressing emotional and attitudinal factors in curriculum design
Barr KP, & et. al.(6)	USA	Descriptive	Evaluating the impact of workshop-based training on conflict resolution skills among physical medicine and rehabilitation residents in a group setting	Ninety-seven percent of participants felt prepared to manage conflicts after training. Simulation-based learning was highly effective and perceived as realistic. Skill application improved across all model stages.	Hot-seat simulation model, Standardized patient role-play, Acceptance of simulation training	Peer feedback and coaching, Simulation-based learning, Practical conflict resolution skills	Utilizing innovative and active methods for conflict management training
Broukhim M, Yuen F, & et. al.(21)	USA	Mixed-methods study	Exploring interprofessional conflicts in a hospital from the perspective of three healthcare student groups	Conflict is a significant part of clinical training, but education systems do little to prepare students for managing it. Students reported frequent conflicts with professionals in their own field. 44% were dissatisfied with conflict management approaches.	Interprofessional conflict themes: relationships, values, systems, role ambiguity, hierarchy, personality, communication	Conflict resolution styles, Prevalence in medical fields, Key sources	Organizational conflicts and their management in healthcare
Sinsky JL, & et. al. (28)	USA	Review	Developing a framework for improved conflict management among surgeons in operating environments	Effective communication improves conflict resolution. Cultural differences impact patient care. Structured training enhances teamwork in high-stakes environments.	Emotional regulation, Active listening, Formal conflict management training	Addressing vulnerable patient groups, Training for conflict resolution styles, Cultural competency	Enhancing communication skills and understanding patients' needs in conflict situations
Cullati S, & et. al. (52)	Switzerland	Qualitative, content analysis	Examining healthcare professionals' experiences and understanding of conflict impact on patient care	Forty-one percent of conflicts had potential patient care consequences, mostly delays and extended hospital stays. Intraprofessional conflicts reduced patient-centered care, while interprofessional conflicts affected timeliness.	Defining six key care dimensions: safety, effectiveness, patient-centeredness, timeliness, efficiency	Conflict effects on patient care quality, Delays in medical services, Direct health impact	Assessing the impact of conflict situations on patient health and their management
Pitsillidou M, & et. al. (53)	Cyprus	Survey	Identifying conflict management strategies among healthcare professionals in Cyprus hospitals	Workload and unclear directives cause conflicts. Most professionals report dissatisfaction with pay. Avoidance is the most used resolution strategy, followed by negotiation. More experienced staff prefer negotiation.	Communication and collaboration, Professional rights, Clear role allocation	Workload impact, Conflict resolution competencies, Organizational policies	Establishing a strategic vision for conflict reduction in healthcare organizations

Cochran N, & et. al. (22)	USA, Washington	Systematic review	Defining core competencies for effective conflict resolution among healthcare professionals	Essential competencies include emotional regulation, constructive communication, teamwork, and cultural awareness. Training enhances professional interactions and conflict resolution abilities.	Self-awareness, active listening, empathy, collaborative problem-solving	Individual, interpersonal, and group competencies	Integrating conflict management competencies into medical curricula
Wolfe AD, & et. al.(29)	USA	Intervention study	Enhancing conflict management skills through communication training	Training improved team dynamics and conflict resolution strategies. Emphasis on nonverbal communication, structured discussions, and team-based exercises was valuable. Motivation to engage in conflict resolution workshops declined over time.	Interactive workshops, Peer feedback, Communication skill enhancement	Conflict resolution training, Reflection in practice, Continuous evaluation	Evident effectiveness of educational interventions in clinical conflict management
Kim S, & et. al. (25)	USA, Washington	Scoping review	Reviewing studies on conflict management sources and outcomes in medical settings	Conflict sources include personal traits, poor communication, and organizational constraints. Leadership transparency and structured policies enhance conflict resolution.	Personal traits, leadership styles, systemic barriers	Individual, interpersonal, and organizational conflict factors	Strengthening communication and organizational management for conflict resolution
Jerng J-S, & et. al.(54)	Taipei, Taiwan	Quantitative, retrospective	Examining medical errors linked to interprofessional conflicts	Significant correlation between conflicts and medical errors. Surgical specialists experience conflicts more frequently. Most reported errors involve patient transfers, lab tests, surgeries, and imaging.	Job role distribution, Reporting mechanisms, Professional disagreements	High prevalence of clinical conflicts, Impact on patient safety, Institutional oversight	Establishing a reporting system for documenting and managing conflict situations
Leksell J& et. al. (55)	Sweden	Survey	Assessing physicians' conflict management competency levels	No significant difference in conflict management competencies among medical disciplines. Continuous education enhances conflict resolution skills. Physicians acknowledged workshops as effective for skill development.	University training impact, Experience-driven improvement, Consistency across specialties	Identifying essential competencies, Continuous assessment, Inclusion across medical fields	Training and integrating conflict management competencies into continuing medical education
Akel DT, & et. al.(56)	Egypt	Descriptive, cross-sectional	Analyzing factors and sources of conflict between physicians and trainees	Physicians and nurses share similar conflict causes and resolution approaches. Compromise is the preferred strategy among both groups, though physicians use it more frequently. Physician-student conflicts impact academic evaluations.	Workload issues, Personality differences, Educational disparities	Physician-nurse collaboration, Causes of conflict, Resolution strategies	Examining conflict management styles across clinical teams
Attri JP, & et. al. (8)	China	Systematic review	Investigating causes and factors contributing to conflicts in surgical environments	Effective communication prevents conflicts and improves teamwork. Operating rooms require strong collaboration due to shared responsibilities. Resolving conflicts enhances patient safety and professional relationships.	Impact of poor communication, Team-based conflict resolution, Multidisciplinary coordination	Positive conflict resolution, Professional collaboration, Respectful communication	Establishing reliable communication channels for conflict management in the operating room

Rogers DA, & et. al.(27)	USA	Qualitative, focus group	Exploring surgical team perspectives on conflict management training, its impact, and effective strategies	Surgeons primarily learn conflict management through trial and error, leading to stress and patient care disruptions. Continuous training enhances team cohesion and conflict resolution skills.	Problem-solving, Communication reinforcement, Emotional resilience	Training deficiencies, Impact on team performance, Stress reduction strategies	Importance of conflict management competency training for surgical teams
El-Masry R, & et. al.(57)	Egypt	Descriptive, cross-sectional	Investigating perceived sources of conflict between surgeons and anesthesiologists in a healthcare center	Conflict between anesthesiologists and surgeons stems from work pressures, unclear patient roles, and communication gaps. Staffing shortages and excessive workload are major contributors.	Anesthesia-surgery team dynamics, Workplace stressors, Decision-making challenges	Staff shortages, Conflict sources, Patient preferences	Importance of continuous patient communication for conflict management
Olson TJP, & et. al.(26)	USA	Descriptive, cross-sectional	Examining surgical team perspectives on conflict management and its consequences	Less experienced surgeons report higher conflict rates. Effective conflict management requires structured education, time, and experience. Surgeons with stronger patient communication skills manage conflicts more effectively.	Impact of surgeon experience, Postoperative psychological factors, Need for structured training	Academic vs. private practice conflicts, Experience-related conflict trends, Surgeon-patient communication	Managing high conflict rates between surgeons and the healthcare team in critical patient care
Opatt D, & et. al.(20)	USA	Qualitative, content analysis	Assessing conflict intensity and experiences among surgeons	Experienced surgeons report fewer conflicts. Disagreements over surgical choices, particularly in aesthetic procedures, are common. Surgeons in specialized cancer centers face higher conflict rates than those in general hospitals.	Variability in conflict across surgical fields, Experience-related trends, Aesthetic surgery disputes	Differences in perception, Conflict management strategies, Curriculum integration	Addressing surgeon-patient conflicts in selecting surgical interventions
Katz JD. (18)	USA	Systematic review	Reviewing common sources and solutions for conflict in healthcare settings	Poor communication contributes to medical errors and inefficiencies. Conflict resolution requires both institutional frameworks and personal strategies. Structured programs improve team cohesion and patient safety.	Miscommunication risks, Systematic barriers, Structured resolution approaches	Institutional and individual conflict resolution, Impact on patient safety, Strategic planning	Enhancing clinical team communication for effective conflict management
Lee L, & et. al.(19)	USA	Systematic review	Identifying conflict resolution methods and strategies in medical education	Formal conflict resolution training for surgeons is limited. Poor conflict management affects patient outcomes and career progression. AGME emphasizes communication skills in residency training.	Structured resolution models, Communication-based strategies, Leadership approaches	Accreditation standards, Conflict resolution techniques, Leadership styles	Importance of open and flexible communication for effective conflict management
Greer LL, & et. al. (17)	Netherlands	Systematic review	Examining intergroup conflicts in medical education	Task conflicts impact team performance but can be mitigated. Process and relationship conflicts hinder clinical efficiency. Structured resolution strategies improve conflict management.	Task, process, and relationship conflicts, Four resolution methods: coercion, submission, avoidance, problem-solving	Classification for better management, Conflict resolution strategies, Root cause analysis	In-depth analysis and categorization of conflict situations

Baldwin Jr DC, & et. al. (13)	USA, Chicago	Descriptive, cross-sectional	Examining conflict experiences, effects, and contributing factors among medical residents	Twenty percent of residents reported serious conflicts. 23.8% admitted to medical errors due to conflict. Neurology and obstetrics had the highest conflict rates, while pathology and radiology had the lowest.	High conflict prevalence, Link to medical errors, Specialty-based differences	Impact on patient care, Interprofessional collaboration, Conflict variation across specialties	Enhancing a positive team environment and reducing workplace stress
Saltman DC, & et. al.(16)	Australia, Sydney	Qualitative, content analysis	Developing a structured model for conflict resolution in medical education	Human interactions in medicine inherently lead to conflicts. Poor conflict management negatively affects patient satisfaction. A structured four-phase conflict resolution model enhances professional competency.	Conflict formation model, Impact on patient care, Intergroup communication	Structured training, Root cause analysis, Systematic resolution frameworks	Revising medical curricula based on conflict management models
Brown J, & et. al.(14)	UK, London	Qualitative, phenomenological	Investigating healthcare professionals' experiences with conflict and response strategies	Conflict stems from unclear roles, excessive workload, and avoidance behaviors. Leadership strategies include structured protocols, open communication, and proactive resolution approaches.	Role ambiguity, Time constraints, Leadership interventions	Workload reduction, Effective leadership, Continuous training	Examining barriers, sources, and strategies for conflict resolution by organizational leaders
Rogers D, & et. al.(15)	USA	Qualitative, grounded theory	Examining conflict formation in surgical teams to design educational management programs	Poor resource allocation and non-scientific language contribute to surgical conflicts. Emotional responses impact conflict resolution speed. Structured conflict management improves efficiency and team cohesion.	Resource allocation, Communication barriers, Positive and negative conflict outcomes	Team values, Leadership dynamics, Emotional awareness	Considering environmental and cultural factors for better conflict management