REVIEW ARTICLE

How Physicians Learn to Say "I'm Sorry": Power, Culture, and Apology in Medical Education

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Background: Apologizing after a medical error is a vital component of ethical, patient-centered care. Sincere apologies can restore trust, reduce distress, and support healing. Yet the ability to apologize is not instinctive, it is shaped by institutional culture, power dynamics, and educational exposure. Despite increasing emphasis on disclosure training, no prior synthesis has thoroughly examined how medical students are taught to apologize or how sociocultural factors influence this learning. This scoping review explores how medical students learn to apologize in clinical settings, focusing on formal curricula, faculty role modeling, institutional norms, and emotional skill development.
Method: Using Arksey and O'Malley's framework, refined by Levac et al., and reported per PRISMA-ScR guidelines, we searched PubMed, MEDLINE, Scopus, ERIC, and Google Scholar. Peer-reviewed articles published in English from 2000-2024 were included if they addressed apology or error disclosure in undergraduate medical education. Two reviewers conducted independent screening and data extraction. Studies were thematically analyzed across five domains: curriculum, faculty role modeling, institutional culture, emotional skills, and outcomes.
Results: Seventeen studies met inclusion criteria. Interventions such as simulations, communication frameworks, and patient safety exercises improved students' confidence in disclosure. Faculty role modeling had strong influence, though observed apologies were often inadequate. Hidden curricula and hierarchies hindered authentic communication. Empathy training facilitated sincere apologies, yet few programs assessed long-term behaviors or addressed structural barriers.
Conclusion: Teaching apology in medicine requires more than communication skills, it demands longitudinal, systems-based efforts that foster humility, transparency, and institutional accountability.
Keywords: Education, Medical, Apology, Medical Errors, Disclosure, Curriculum

كيف يتعلم الأطباء قول "أنا آسف": القوة والثقافة والاعتذار في التعليم الطبي

الخلفية: يُعدّ الاعتذار بعد الخطأ الطبي ركنًا أساسيًا من أركان الرعاية الأخلاقية التي تُركّز على المريض. فالاعتذارات الصادقة تُعيد الثقة، وتُخفّف الضيق، وتُعزّز الشفاء. ومع ذلك، فإنّ القدرة على الاعتذار ليست غريزية، بل تتشكّل بفعل الثقافة المؤسسية، وديناميكيات السلطة، والخبرات التعليمية. على الرغم من التركيز المتزايد على التدريب على الإفصاح، لم تُجرِ أيّ دراسة سابقة دراسةً شاملةً لكيفية تعليم طلاب الطب الاعتذار أو كيفية تأثير العوامل الاجتماعية والثقافية على هذا التعلّم. تستكشف هذه المراجعة الاستقصائية كيف يتعلم طلاب الطب الاعتذار في البيئات السريرية، مع التركيز على المناهج الرسمية، ونماذج أعضاء هيئة التدريس، والمعايير المؤسسية، وتنمية المهارات العاطفية.
الطريقة: باستخدام إطار عمل أركسي وأومالي، الذي طوّره ليفاك وآخرون، والمُبلّغ عنه وفقًا لإرشادات PRISMA-ScR، بحثنا في PubMed وMEDLINE وScopus وERIC وGoogle Scholar. أُدرجت المقالات المُحكّمة والمنشورة باللغة الإنجليزية بين عامي ٢٠٠٠ و٢٠٢٤، إذا تناولت موضوع الاعتذار أو الكشف عن الأخطاء في التعليم الطبي الجامعي. أجرى مُراجعان فحصًا مستقلًا واستخلاصًا للبيانات. حُلّلت الدراسات موضوعيًا عبر خمسة مجالات: المنهج الدراسي، ونماذج أعضاء هيئة التدريس، والثقافة المؤسسية، والمهارات العاطفية، والنتائج.
النتائج: استوفت سبع عشرة دراسة معايير الإدراج. حسّنت تدخلاتٌ مثل المحاكاة، وأطر التواصل، وتمارين سلامة المرضى ثقة الطلاب في الإفصاح. كان لنموذج هيئة التدريس تأثيرٌ قوي، على الرغم من أن الاعتذارات الملحوظة غالبًا ما كانت غير كافية. أعاقت المناهج والتسلسلات الهرمية الخفية التواصلَ الحقيقي. سهّل التدريب على التعاطف تقديم اعتذارات صادقة، إلا أن برامج قليلة قيمت السلوكيات طويلة الأمد أو عالجت العوائق الهيكلية.
الخلاصة: يتطلب تدريس الاعتذار في الطب أكثر من مجرد مهارات التواصل، بل يتطلب جهودًا منهجية طويلة الأمد، تُعزز التواضع والشفافية والمساءلة المؤسسية.
الكلمات المفتاحية: التعليم، الطب، الاعتذار، الأخطاء الطبية، الإفصاح، المنهج الدراسي

معالجین "مجھے افسوس ہے" کہنا کیسے سیکھتے ہیں: طبی تعلیم میں طاقت، ثقافت، اور معافی

پس منظر: طبی غلطی کے بعد معافی مانگنا اخلاقی، مریض پر مبنی دیکھ بھال کا ایک اہم جز ہے۔ مخلصانہ معافی اعتماد کو بحال کر سکتی ہے، تکلیف کو کم کر سکتی ہے، اور شفا یابی کی حمایت کر سکتی ہے۔ پھر بھی معافی مانگنے کی صلاحیت فطری نہیں ہے، یہ ادارہ جاتی ثقافت، طاقت کی حرکیات، اور تعلیمی نمائش سے تشکیل پاتی ہے۔ افشاء کرنے کی تربیت پر زیادہ زور دینے کے باوجود، کسی بھی سابقہ ترکیب نے اچھی طرح سے جانچ نہیں کی ہے کہ میڈیکل کے طلباء کو کس طرح معافی مانگنا سکھایا جاتا ہے یا سماجی ثقافتی عوامل اس سیکھنے کو کیسے متاثر کرتے ہیں۔ یہ اسکوپنگ جائزہ اس بات کی کھوج کرتا ہے کہ طبی طلباء کس طرح کلینیکل سیٹنگز میں معافی مانگنا سیکھتے ہیں، رسمی نصاب، فیکلٹی رول ماڈلنگ، ادارہ جاتی اصولوں، اور جذباتی مہارت کی نشوونما پر توجہ مرکوز کرتے ہیں۔
طریقہ: Arksey اور O'Malley کے فریم ورک کا استعمال کرتے ہوئے، Levac et al. کے ذریعے بہتر کیا گیا، اور PRISMA-ScR رہنما خطوط کے مطابق رپورٹ کیا گیا، ہم نے PubMed، MEDLINE، Scopus، ERIC، اور Google Scholar کو تلاش کیا۔ ۲۰۲۳-۲۰۰۰ کے درمیان انگریزی میں شائع ہونے والے ہم مرتبہ نظرثانی شدہ مضامین کو شامل کیا گیا تھا اگر وہ انڈرگریجویٹ میڈیکل ایجوکیشن میں معافی یا غلطی کے انکشاف پر توجہ دیتے ہیں۔ دو جائزہ کاروں نے آزادانہ اسکریننگ اور ڈیٹا نکالنے کا اہتمام کیا۔ مطالعات کا پانچ ڈومینز میں موضوعاتی طور پر تجزیہ کیا گیا: نصاب، فیکلٹی رول ماڈلنگ، ادارہ جاتی ثقافت، جذباتی مہارت، اور نتائج۔
نتائج: سترہ مطالعات نے شمولیت کے معیار پر پورا اترا۔ مداخلتوں جیسے نقلی، مواصلاتی فریم ورک، اور مریض کی حفاظت کی مشقوں نے انکشاف میں طلباء کے اعتماد کو بہتر بنایا۔ فیکلٹی رول ماڈلنگ کا گہرا اثر تھا، حالانکہ مشاہدہ شدہ معذرتیں اکثر ناکافی تھیں۔ پوشیدہ نصاب اور درجہ بندی مستند مواصلت میں رکاوٹ ہے۔ ہمدردی کی تربیت نے مخلصانہ معذرت کی سہولت فراہم کی، پھر بھی چند پروگراموں نے طویل مدتی رویوں کا اندازہ لگایا یا ساختی رکاوٹوں کو دور کیا۔
نتیجہ: طب میں معافی کی تعلیم دینے کے لیے مواصلاتی مہارتوں سے زیادہ ضرورت ہوتی ہے، یہ طولانی، نظام پر مبنی کوششوں کا مطالبہ کرتا ہے جو عاجزی، شفافیت اور ادارہ جاتی جوابدہی کو فروغ دیتے ہیں۔
مطلوبہ الفاظ: تعلیم، طبی، معافی، طبی غلطیاں، انکشاف، نصاب

چگونه پزشکان گفتن "متأسفم" را یاد می گیرند: قدرت، فرهنگ و عذرخواهی در آموزش پزشکی

زمینه و هدف: عذرخواهی پس از یک خطای پزشکی جزء حیاتی مراقبت اخلاقی و بیمارمحور است. عذرخواهی صمیمانه می تواند اعتماد را بازگرداند، ناراحتی را کاهش دهد و به بهبودی کمک کند. توانایی عذرخواهی غریزی نیست، بلکه توسط فرهنگ سازمانی، پویایی قدرت و قرار گرفتن در معرض آموزش شکل می‌گیرد. علیرغم تأکید روزافزون بر آموزش افشاگری، تا کنون هیچ مرور جامعی به طور کامل بررسی نکرده است که چگونه به دانشجویان پزشکی آموزش داده می شود که عذرخواهی کنند یا تأثیر عوامل اجتماعی-فرهنگی بر این یادگیری چگونه است. این مرور دامنه، به نحوه یادگیری عذرخواهی توسط دانشجویان پزشکی در محیط‌های بالینی می‌پردازد و بر برنامه های درسی رسمی، الگو بودن اعضای هیأت علمی، هنجارهای سازمانی و توسعه مهارت های هیجانی تمرکز دارد.
روش: با استفاده از چارچوب Arksey و O'Malley، اصلاح شده توسط لواک و همکاران و گزارش بر اساس دستورالعمل های PRISMA-ScR، پابمد، مدلاین، اسکوپوس، اریک و گوگل اسکالر را جستجو کردیم. مقالاتی که بین سال‌های ۲۰۰۰ تا ۲۰۲۴ به زبان انگلیسی منتشر شده است، چنانچه به عذرخواهی یا افشای اشتباه در آموزش پزشکی در مقطع کارشناسی پرداخته باشد، مورد بررسی قرار گرفت. دو داور، غربالگری و استخراج داده‌ها را به طور مستقل انجام دادند. مطالعات به صورت موضوعی در پنج حوزه مورد تجزیه و تحلیل قرار گرفتند: برنامه درسی، الگوبرداری از اساتید، فرهنگ سازمانی، مهارت‌های عاطفی و نتایج.
یافته‌ها: هفده مطالعه معیارهای ورود را داشتند. مداخلاتی مانند شبیه‌سازی‌ها، چارچوب‌های ارتباطی و تمرین‌های ایمنی بیمار، اعتماد دانشجویان به افشای اطلاعات را بهبود بخشید. الگوبرداری از اساتید تأثیر زیادی داشت، اگرچه عذرخواهی مشاهده شده اغلب کافی نبود. برنامه های درسی پنهان و سلسله مراتب، مانع از برقراری ارتباط معتبر می شد. آموزش همدلی، عذرخواهی صادقانه را تسهیل کرد، اما تعداد کمی از برنامه ها رفتارهای بلندمدت را ارزیابی کردند یا به موانع ساختاری پرداختند.
نتیجه‌گیری: آموزش عذرخواهی در پزشکی بیش از مهارت‌های ارتباطی نیازمند تلاش‌های طولی و مبتنی بر سیستم است که فروتنی، شفافیت و مسئولیت‌پذیری نهادی را تقویت می‌کند.
واژه‌های کلیدی: آموزش، پزشکی، عذرخواهی، خطاهای پزشکی، افشاگری، برنامه درسی

INTRODUCTION

Medical errors remain a significant source of preventable harm within healthcare systems, prompting an urgent need for transparent communication and accountability. Apologizing following a medical error is not only an ethical imperative but also a critical skill in patient-centered care. When physicians acknowledge an error, take responsibility, and express regret, it can reduce patient anger and blame, rebuild trust, and strengthen the therapeutic relationship (1). Patients expect and value apologies, as they convey empathy and compassion while providing emotional reassurance (2). Moreover, apologies may promote healing for both patients and healthcare professionals, helping restore dignity and preserve professional identity (3). Despite concerns that apologies might provoke litigation, evidence suggests that sincere, well-communicated apologies may actually reduce malpractice risk by fostering trust and early resolution (1,4). Apologizing is thus both an ethical obligation and a practical tool for cultivating a culture of safety and emotional support in healthcare (5,6).

However, the ability to deliver an effective and sincere apology is not innate—it is shaped by power hierarchies, institutional norms, and the quality of educational experiences throughout medical training. Medical culture often implicitly discourages vulnerability, particularly in the context of hierarchical relationships, which may inhibit trainees from learning how to appropriately disclose and apologize for errors (5). As a result, growing attention has been directed toward integrating apology and disclosure training into medical education (7). Structured curricula, simulation-based practice, and faculty role modeling have emerged as promising strategies to support learners in developing these communication skills (8–10). Recent reviews highlight a growing recognition that communication failures—not solely clinical errors—drive a significant proportion of malpractice claims, underscoring the need for comprehensive education in disclosure and apology (3).

Programs such as *When Things Go Wrong* exemplify this educational shift, offering interactive sessions that help clinicians and trainees assess their attitudes toward error, explore patient and family narratives, and practice bedside disclosures (7). Observational learning also plays a central role. Medical students frequently look to senior physicians to model appropriate behaviors, and complete apologies that include acknowledgment, explanation, remorse, and reparation have been shown to positively influence trainees' attitudes and learning (11). Effective communication about error must also engage cognitive, emotional, and moral dimensions—skills that can be cultivated through a combination of didactic teaching, reflective discussion, and experiential learning (5,9,10). Notably, these approaches align with emerging frameworks in relational ethics and trauma-informed care, which emphasize the clinician's responsibility to engage in compassionate and transparent dialogue even in the face of institutional constraints (11,12).

Empathy and compassion are foundational to meaningful apology, and these attributes can also be taught. The systematic review by identified educational approaches that enhance empathy and compassion among medical learners, including recognizing opportunities for compassionate communication and using validating, supportive language (12). These behaviors are central to effective apology following medical errors. Their findings align with those who advocate for formal training and strong faculty modeling to reinforce the importance of transparent, patient-centered communication (7,11,13,14). At the same time, qualitative work suggests that learners often experience emotional dissonance when institutional or supervisory cues contradict formal teachings, further reinforcing the role of culture in shaping behaviors around apology (1).

Given the ethical, relational, and systemic importance of apology in healthcare, a comprehensive understanding of how physicians are taught to apologize is essential. However, no existing synthesis has examined how apology practices are currently being addressed across medical education contexts, or how power and culture shape these learning processes. Therefore, this scoping review aims to explore how physicians learn to apologize in the context of medical education, with specific attention to the influence of power dynamics, institutional culture, and formal training strategies. By mapping the existing literature, this review seeks to identify key themes, gaps, and opportunities to strengthen the way apology is taught and modeled in clinical learning environments.

METHODS

This scoping review was conducted to examine how apology is taught and learned within medical education, with particular attention to the influence of power, culture, and communication pedagogy. The review followed a structured and iterative process consistent with Arksey and O'Malley's scoping review framework (15), refined by Levac et al. (16) , and was reported in accordance with the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines (17). As this study involved the synthesis of publicly available data and did not involve human participants or identifiable information, formal ethics approval was not required.

A comprehensive literature search was performed across five academic databases: PubMed, MEDLINE, Scopus, ERIC, and Google Scholar. These databases

were selected for their relevance to medical education, healthcare communication, and pedagogical development. The search strategy employed a combination of keywords and MeSH terms designed to reflect the review's focus on apology, medical error disclosure, and related teaching practices in undergraduate medical education (UME). Search terms included "medical apology," "error disclosure," "communication training," "medical education," "professionalism," "empathy training," "hidden curriculum," "power dynamics," "role modeling," and "patient-physician relationship." Boolean operators (AND/OR) were used to refine search results, and filters were applied to restrict the search to English-language publications published between January 2000 and March 2024.

Articles were eligible for inclusion if they were peer-reviewed publications in English from the years 2000 to 2024; focused on undergraduate medical education, including both pre-clinical and clinical training stages; described or evaluated educational approaches related to apology, error disclosure, or emotionally responsive communication; and addressed the role of institutional culture, hierarchy, or power in shaping communication practices. Studies were excluded if they focused solely on postgraduate or continuing professional development, targeted non-physician health professionals without explicit reference to physician training, were opinion pieces, editorials, or conference abstracts without empirical or descriptive educational content, or lacked substantive discussion on teaching or modeling apology or disclosure.

The selection process involved two stages. In the first stage, titles and abstracts were screened for relevance based on the eligibility criteria. In the second stage, the full texts of potentially relevant articles were reviewed to confirm inclusion. Any discrepancies during screening were resolved through discussion among the reviewers. Screening was conducted independently by two reviewers using a shared screening spreadsheet to ensure consistency and transparency.

From each included article, data were extracted on the study's year, country, and institutional setting; the level of education (e.g., pre-clinical, clinical, or interprofessional); the content of the educational intervention (e.g., apology training, disclosure protocols, empathy instruction); the pedagogical methods used (e.g., simulation, role-play, formal curricula, or informal observation); the cultural influences described (e.g., hierarchy, power dynamics, institutional norms); the reported outcomes (e.g., learner attitudes, behavior change, skill development); and any relevant theoretical frameworks, such as those grounded in ethics, humanism, or communication theory. Data extraction was conducted using a standardized Excel-based charting form, which was pilot-tested on five studies by two reviewers to refine categories and ensure reliability. Any uncertainties in coding were resolved through consensus.

The extracted data were synthesized using a thematic analysis approach. Thematic analysis was conducted inductively by two reviewers who independently reviewed the charted data, identified initial codes, and iteratively grouped these codes into higher-order themes. Findings were organized into five major domains: curricular approaches to apology and disclosure training; the role of faculty and clinical role modeling; the influence of institutional culture and power hierarchies; empathy and compassion as foundational elements in apology; and reported outcomes, barriers, and gaps in educational practice. Themes were reviewed and refined collaboratively to ensure coherence and to capture the diversity of perspectives presented across studies. Throughout the analysis, an interpretive lens grounded in professionalism, relational ethics, and systems-based education was applied to guide synthesis and interpretation.

The initial search yielded 1796 records across the five databases, with an additional 82 articles identified through manual screening of reference lists. After removing 398 duplicates, 1480 unique records remained for title and abstract screening. Of these, 1328 were excluded due to irrelevance or ineligible study type. Full-text review was conducted on the remaining 152 articles, resulting in 17 studies that met all inclusion criteria and were included in the final qualitative synthesis.

RESULTS

This scoping review identified a range of educational strategies, institutional influences, and psychological constructs that shape how medical students learn to apologize in clinical contexts. The 17 studies included in this synthesis offer insights into curricular interventions, faculty role modeling, power dynamics within hierarchical learning environments, and the emotional and ethical dimensions of empathy and compassion. These sources collectively highlight both the progress and limitations of current educational approaches to teaching apology in medical training.

Thematic synthesis was conducted using an inductive approach. Two reviewers independently reviewed the extracted data and coded each study line-by-line for relevant concepts and patterns. Codes were grouped into higher-level categories through iterative discussion and comparison. Discrepancies were resolved through consensus, and themes were refined collaboratively to ensure they reflected the full range of data across studies. This analytic process was informed by the frameworks of Arksey & O'Malley and Levac et al., and guided by principles of interpretive synthesis.

The results are presented across five thematic domains: (1) curricular approaches to apology and

disclosure training, (2) the role of faculty and clinical role modeling, (3) the influence of institutional culture and power hierarchies, (4) empathy and compassion as foundational elements in apology, and (5) reported outcomes, barriers, and gaps in educational practice.

Curricular Approaches to Apology and Disclosure Training

Curricular approaches to apology and disclosure training for medical errors in medical students involve several key strategies. One effective method is the integration of interactive patient safety reporting curricula into clinical clerkships. This approach requires students to engage with real patient safety incidents they have experienced, analyze the severity and root causes, and reflect on system-based prevention and personal impact. This model has been shown to improve students' ability to accurately analyze and report medical errors, leading to system-based improvements (18).

Another approach involves structured educational programs that include didactic sessions, role-playing, and simulation training. These programs focus on developing communication skills necessary for effective error disclosure, including expressing regret, taking responsibility, and explaining preventive measures for future errors. Studies have demonstrated that such programs increase students' confidence and competence in disclosing medical errors (5,19). One example of a successful framework is the *When Things Go Wrong* curriculum (7), which was shown to improve clinician preparedness and patient-family-clinician communication following adverse events. The program utilized interactive sessions, patient narratives, and communication skill-building to facilitate sincere, compassionate disclosures.

Additionally, incorporating lessons from social psychology into error disclosure training can address cognitive biases that hinder effective disclosure. This includes using standardized patients and virtual reality simulations to practice and reinforce these skills (20). Team-based disclosure training is also emphasized, where students practice disclosing errors as part of an interprofessional team. This method has been shown to improve knowledge and comfort with error disclosure, highlighting the importance of teamwork in managing medical errors (21).

Overall, these curricular approaches aim to create a culture of transparency and learning, ensuring that medical students are well-prepared to handle medical errors ethically and effectively.

The Role of Faculty and Clinical Role Modeling

Faculty and clinical role modeling play a crucial role in teaching medical students how to apologize effectively. Apologies in medical practice are essential for maintaining trust, demonstrating empathy, and addressing medical errors. The process of learning to apologize is often informal and heavily reliant on the observation of senior clinicians. According to Fischer and Frankel (11), third-year medical students frequently observe apologies made by attending physicians or residents, which significantly influences their understanding and engagement in the apology process. The study found that complete apologies—including acknowledgment, explanation, regret or remorse, and reparation—were associated with positive student experiences. However, many apologies observed were incomplete, highlighting the need for better role modeling.

Bell et al. (7) emphasize the importance of structured educational programs that include both trainees and faculty physicians to improve communication skills related to error disclosure and apology. Their *When Things Go Wrong* curriculum demonstrated that faculty who participated felt better prepared to teach and address these topics, underscoring the necessity of explicit training and support systems. Furthermore, Anderson et al. (22) found that explicit modeling of communication skills by faculty led to greater uptake and recognition of these skills by medical students. This suggests that deliberate and explicit demonstration of how to apologize can enhance students' learning and confidence in performing these actions themselves.

In summary, faculty and clinical role models are pivotal in teaching medical students how to apologize. Effective role modeling, supported by structured educational programs, can significantly improve students' ability to offer sincere and complete apologies, thereby fostering a culture of transparency and empathy in medical practice.

The Influence of Institutional Culture and Power Hierarchies

Institutional culture and power hierarchies significantly influence how medical students learn to apologize. Medical education occurs within a highly hierarchical environment where students often observe and emulate the behaviors of their superiors, such as attending physicians and residents. This hierarchical structure can both positively and negatively impact the learning process. Fischer and Frankel (11) highlight that medical students often learn to apologize by observing their superiors; however, the quality of these apologies varies, with only 17% being complete—containing all four key elements: acknowledgment, explanation, regret or remorse, and reparation. This suggests that students may not always receive optimal models for effective apologies.

The hidden curriculum, as discussed by the American College of Physicians, plays a crucial role in shaping students' professional behaviors, including how they handle apologies. Positive role models can reinforce the importance of sincere apologies, while negative role models can perpetuate inadequate practices (23). Power hierarchies can also suppress open communication and the ability to apologize

effectively. Vanstone and Grierson (24) note that hierarchies in medical education can repress lower-status individuals, such as medical students, limiting their ability to communicate openly and exercise agency. This can lead to a culture where students feel uncomfortable or unprepared to offer apologies, especially in the presence of their superiors.

In summary, institutional culture and power hierarchies significantly shape how medical students learn to apologize, with both positive and negative influences stemming from the behaviors modeled by their superiors and the hierarchical nature of medical education.

Empathy and Compassion as Foundational Elements in Apology

Empathy and compassion are foundational elements in an apology, particularly when medical students learn to apologize. Empathy involves the cognitive capacity to understand and share the feelings of another, while compassion involves the affective capacity to engage with the patient's experience and be driven to provide effective care (25). In the context of medical education, empathy and compassion are critical for effective communication and maintaining therapeutic relationships. According to Patel et al. (12), effective empathy and compassion training in medical education includes behaviors such as recognizing and responding to patients' non-verbal cues, making verbal statements of acknowledgment, and providing validation and support. These behaviors are essential in crafting a sincere and effective apology. Similarly, Kaldjian (5) emphasized that communication training should not be limited to scripts or technical skills. Instead, it must encompass ethical reflection, emotional expression, and a commitment to responsibility, delivered through didactic sessions, reflective discussion, and role-play. Fischer and Frankel (11) highlight that a genuine apology in medical practice should include acknowledgment, explanation, regret or remorse, and reparation. These elements are more likely to be perceived positively by patients and can significantly impact the patient-physician relationship. Moreover, Allan et al. (26) emphasize that apologies should focus on the needs of the patient, demonstrating an understanding of the impact of the event, expressing remorse, and offering actions to address the harm caused. This patient-centered approach aligns with the principles of empathy and compassion, ensuring that the apology is not merely a formality but a meaningful interaction that fosters trust and healing.

In summary, empathy and compassion are integral to the process of apologizing in medical practice, as they ensure that the apology is sincere, patient-centered, and effective in maintaining the therapeutic relationship.

Reported Outcomes, Barriers, and Gaps in Educational Practice

The reported outcomes, barriers, and gaps in educational practice for teaching medical students how to apologize are multifaceted. First, educational interventions have demonstrated positive outcomes in enhancing medical students' confidence, comfort, and perceived importance of apology skills. For instance, a multi-component intervention increased students' confidence in providing effective apologies and their comfort in disclosing errors (26). Additionally, students who received training reported improvements in their knowledge, skills, and attitudes toward error disclosure (27).

Several barriers hinder effective teaching of apology skills. These include a lack of formal instruction and an overreliance on observing senior physicians, who may not always model appropriate behavior (11). Fear of litigation remains a significant barrier, discouraging physicians from offering complete apologies (1). Moreover, the emotional toll on clinicians and uncertainty about how to discuss errors further contribute to the reluctance to apologize (7).

Lastly, there are notable gaps in current educational practices. Few programs specifically target apologies in routine practice, leading to inconsistent learning experiences for students. Existing curricula often lack rigorous assessment of long-term skill retention and behavior change in clinical settings. Furthermore, there is a need for more comprehensive and continuous training—including role-playing, simulations, and real-world practice—to better prepare students for these challenging conversations (5).

In summary, while educational interventions can improve medical students' ability to apologize, significant barriers and gaps remain, including insufficient formal training, fear of litigation, and the need for more robust and longitudinal educational strategies.

DISCUSSION

This scoping review reveals that while medical education has increasingly recognized the importance of teaching apology and error disclosure, substantial variation remains in how these skills are taught, modeled, and internalized by students. Curricular innovations such as the *When Things Go Wrong* curriculum (7), simulation-based modules (19), and patient safety reporting curricula (18) demonstrate that formal, structured interventions can improve learners' confidence, competence, and willingness to engage in these difficult conversations. These programs, particularly those involving interactive and reflective components, contribute to a shift toward a culture of transparency and patient-centered care.

However, this review also underscores the critical role of informal learning through faculty and clinical role modeling. As Fischer and Frankel (11) noted, medical students often rely on observing senior clinicians to learn how to disclose errors and apologize. Yet only a minority of observed apologies include all the

components of a complete apology—acknowledgment, explanation, remorse, and reparation. Anderson et al. (22) reinforce that explicit modeling, rather than implicit observation, is necessary to foster skill development. Without deliberate faculty participation and institutional support, students may adopt incomplete or performative approaches to apology. This finding aligns with previous reviews in the broader communication literature, which emphasize that experiential and observational learning environments must be deliberately structured to promote ethical communication practices (18).

Institutional culture and power dynamics also significantly influence how students engage with apology. Hierarchical structures can silence junior learners, restrict open communication, and inhibit the moral agency necessary for authentic apologies (10,24). The hidden curriculum—unwritten norms conveyed through clinical interactions—can either support or erode the ethical ideals taught in formal curricula (23). Fear of litigation, lack of emotional support, and conflicting messages from faculty remain significant barriers to cultivating a safe and accountable learning environment (1,7). This echoes earlier findings conceptualizing the hidden curriculum's powerful role in shaping learner identity and ethical comportment in medicine (23,26).

Beyond technical training, cultivating the emotional and ethical dimensions of apology is essential. Empathy and compassion are not only communication skills but moral dispositions that must be intentionally fostered (12,25). Several authors emphasized the importance of teaching students to recognize emotional cues, respond to patient distress, and engage meaningfully in conversations about harm (12,25). This aligns with Kaldjian's (5) assertion that error disclosure must encompass both cognitive and emotional preparation. Allan et al. (26) further reminds us that apologies must prioritize the patient's needs, not the provider's discomfort—a distinction that can only be meaningfully taught when curricula address emotional intelligence alongside procedural frameworks. Our findings reinforce these conclusions, particularly the need for integrative approaches that combine communication skills with ethical reflection, as advocated in narrative medicine and humanism-based pedagogies (13,20,24).

Despite these promising developments, gaps remain in the literature. While several studies demonstrate short-term improvements in confidence and communication skills (6,27), few examine long-term outcomes such as behavior change in clinical practice or sustained moral reasoning. Moreover, most programs lack mechanisms for assessing students' apology skills in real-world scenarios. More research is needed to evaluate how training translates into practice and how institutional cultures can be restructured to consistently support disclosure behaviors across all levels of training. This gap is consistent with prior scoping reviews in disclosure education, which similarly call for longitudinal evaluations and attention to systems-level supports.

This scoping review has several limitations. First, only English-language publications were included, which may have excluded relevant perspectives from non-English-speaking contexts. Second, we did not appraise the quality of included studies, consistent with scoping review methodology, though this limits our ability to comment on the strength of the evidence base. Third, the heterogeneity of study designs, outcome measures, and terminology related to apology and disclosure may have constrained our ability to make direct comparisons across studies. Finally, as with all qualitative syntheses, our interpretation was shaped by the reviewers' disciplinary lenses and experiences, which may introduce subjectivity despite efforts to ensure rigour through independent coding and consensus.

CONCLUSION

This review highlights the multifaceted nature of apology training in medical education. While curricular innovations and communication skills training offer essential foundations, they are insufficient without parallel attention to institutional culture, role modeling, and emotional development. Faculty engagement, system-level support, and longitudinal reinforcement are key to ensuring that students can offer sincere, effective, and ethically grounded apologies in clinical practice. To advance the field, medical educators must invest in comprehensive and continuous strategies that integrate structured learning, reflective practice, and faculty development. Addressing the hidden curriculum, dismantling hierarchical barriers, and prioritizing emotional intelligence are essential to fostering a culture of humility, accountability, and patient-centeredness. In doing so, medical education can more fully prepare future physicians to engage in apology not as a performance, but as a compassionate and transformative act of care.

Ethical Considerations

Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors.

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