

Preparing Nurses to Deliver Bad News: A Scoping Review of Simulation-Based Methods

Abstract

Delivering bad news is a critical communication skill for nursing students. It requires sensitivity, empathy, and clarity, yet opportunities to develop this skill in clinical settings may be limited. This review aims to explore how nursing students are trained to deliver bad news through simulation-based education. A scoping review was conducted in December 2024, searching PubMed, CINAHL, Embase, and Google Scholar. The review followed the Arksey and O'Malley framework in accordance with PRISMA-ScR (Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews) guidelines. A thematic analysis was applied to identify key themes in the selected articles. Four major themes were identified across 10 studies: Benefits of Simulation-Based Learning, the Value of Interprofessional Learning, Innovative Technologies, and Emotional Challenges. Simulation methods were found to be effective in enhancing students' preparedness and communication skills, particularly when used in interprofessional settings. Simulation-based education is a valuable tool for training nursing students to deliver bad news. Incorporating interprofessional and technology-enhanced approaches can further enrich learning outcomes and better prepare students for challenging clinical communication scenarios.

Keywords: Breaking bad news, health communication, nursing education, simulation

Anna Christine Steinacker, Marion Diegelmann

Department of Health Sciences, Fulda University of Applied Sciences, Fulda, Germany

Introduction

Delivering bad news, often referred to as "Breaking Bad News" (BBN), is a significant challenge for healthcare professionals. This process goes beyond a simple communicative task; it profoundly impacts patients and their families on physical, mental, social, and spiritual levels. Receiving bad news can be a life-altering and existential experience. It often provokes emotional reactions and influences how individuals cope with the situation. Giving bad news to patients is one of the most difficult tasks that members of the therapeutic team have to perform.

The responsibility for delivering bad news typically falls to medical professionals, though this varies by country. For instance, in Germany, providing any kind of diagnosis is legally and traditionally the role of physicians. A recent study by Mansoursamaei et al. Feported that 95.2% of junior doctors view physicians as the primary professionals responsible for this task. BBN is often a challenging and anxiety-inducing responsibility for medical staff, many of whom feel uncertain about how to navigate the emotional reactions of patients or family members in such situations. However, Vandekift also notes that the act of delivering bad news can have a positive effect on healthcare providers, particularly when their efforts result in a constructive or compassionate outcome for the patient and their family. Nursing staff also play a crucial role in the process, particularly after the initial delivery of the bad news. While physicians often communicate critical information, nurses are the primary caregivers families confide in. They frequently provide follow-up support, which includes offering additional details about the diagnosis, prognosis, and treatment, and helping patients and families process the news. Prognosis are the skills and confidence needed to navigate these interactions effectively.

Several communication strategies and models have been developed to guide healthcare professionals in breaking bad news. Among the most widely recognized is the SPIKES protocol (Setting, Perception, Invitation, Knowledge, Emotions, and Strategy), originally developed for use in oncology by a research team led by Walter Baile and published in 2000. The SPIKES protocol provides a systematic approach for conducting these conversations. The acronym "SPIKES" stands for Setting, Perception, Invitation, Knowledge, Emotions, and Strategy. It guides healthcare professionals through key steps, from gathering information about patients' understanding and preferences to engaging them in the treatment process to ensure effective care and collaboration. The SPIKES protocol is the most commonly used model in training students to deliver bad news.

Despite the recognized importance of communication skills in healthcare, studies suggest that many healthcare providers lack formal training in delivering bad news. For example, Alshami et al. 11 found that only one-third of healthcare professionals had received any form of training in delivering bad news (33.4%; 95% confidence interval [CI]: 32.5–34.3%). 11 Training rates were low across professions, including 37.4% of nurses and only 26.6% of medical students, despite evidence that those with formal training were significantly more likely to deliver bad news themselves. These findings reflect a critical gap in medical education, particularly in the

Cite this article as: Steinacker AC, Diegelmann M. Preparing Nurses to Deliver Bad News: A Scoping Review of Simulation-Based Methods. J Educ Res Nurs. 2025;22[4]:1-6.

Corresponding author: Anna Christine Steinacker E-mail: anna.steinacker@gw.hs-fulda.de

Received: January 13, 2025 Accepted: September 24, 2025 Publication Date: December 01, 2025



Copyright@Author(s) - Available online at www.jer-nursing.org Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

context of patient-centered care, as poor delivery of bad news can have long-lasting consequences for patients and their families.11 Medical education programs are therefore strongly encouraged to address this gap through structured training, including simulation-based approaches.11 For nursing students, learning how to navigate these sensitive conversations is essential to their professional development. Effective communication not only supports the emotional well-being of patients and families but also helps build trust and reduce the risk of miscommunication during difficult times.9 Simulation-based training, in particular, has emerged as an effective method for preparing students to deliver bad news.3 By combining realistic scenarios, standardized patients, and structured feedback, simulation provides a safe environment for skill development and emotional preparation.³ Moreover, prior research emphasizes the need to explore how BBN skills are sustained over time, the optimal timing of such training in curricula, and the comparative effectiveness of different SP models.³ While previous studies have established the value of simulation in developing communication competencies, much of the literature remains fragmented in focus, methods, and evaluation strategies. Existing research often concentrates on specific scenarios or short-term outcomes, offering limited insight into broader patterns or educational best practices. This scoping review explores the use of simulation in preparing nursing students to deliver bad news, combining current evidence to understand training methods, student responses, and strategies for effective implementation. By mapping out the range of simulation approaches and evaluating their reported outcomes, this review seeks to clarify the current state of knowledge, identify best practices and gaps, and provide a foundation for enhancing communication education and ultimately improving patient care.

Study Questions

- What simulation-based methods are used to train nursing students in breaking 1. bad news?
- How do students experience and respond to simulation-based training methods?
- What role do technological innovations play in enhancing this training?

Materials and Methods

This scoping review aimed to explore how nursing students are trained to deliver bad news through simulation, how they respond to such training, and what constitutes effective implementation. Scoping reviews are designed to map the breadth of available evidence, clarify key concepts, and identify gaps in research without necessarily evaluating study quality in depth.12

The review followed the framework proposed by Arksey and O'Malley12 and the PRISMA-ScR checklist (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews).13

Search Strategy

A systematic literature search was conducted in December 2024 across three databases: PubMed, CINAHL, and Embase. An additional exploratory search was performed using Google Scholar to capture gray literature. The search strategy was structured around three main concepts:

- Breaking bad news (e.g., "delivering bad news," "BBN"),
- Nursing students (e.g., "nursing education," "student nurse"),
- Simulation-based learning (e.g., "simulation-based learning," "SBL," "standardized patient").

Search filters included English and German language publications. No restriction was set on publication year to ensure broad coverage. Duplicates were removed using Citavi software.

Eligibility Criteria

Inclusion Criteria

- Studies involving undergraduate or graduate nursing students,
- Simulation-based interventions focused on communication of bad news (including role play, standardized patients, virtual simulations),
- Empirical studies or project reports reporting on student outcomes or learning
- Articles published in English or German.

Exclusion Criteria

- Studies not involving nursing students,
- Training formats that did not include experiential or simulation-based learning (e.g., lectures alone),
- Theoretical papers, editorials, or studies without discussion of educational outcomes.

Study Selection and Data Extraction

All titles and abstracts were screened independently by two reviewers. Full texts of potentially relevant studies were then reviewed for inclusion. A PRISMA flowchart detailing this process is presented in Figure 1.

Data extraction was conducted using a structured table capturing key information: study aim, population, design, intervention type, data collection methods, and main findings. This charting process was carried out independently by two reviewers and then compared for consistency. Disagreements were resolved through discussion.¹⁴

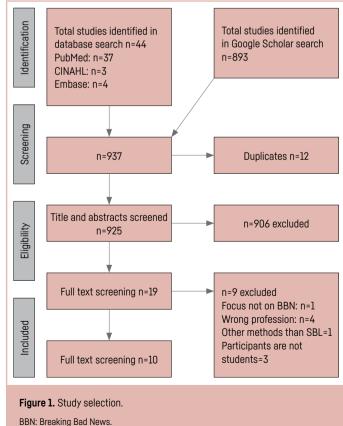
Data Analysis

A thematic analysis, based on the approach by Braun and Clarke, 15 was used to synthesize findings across studies. Both qualitative and quantitative data were considered. Data were coded inductively using MAXQDA software to identify patterns, recurring themes, and gaps in the literature.

While both qualitative and quantitative outcomes were extracted, the synthesis primarily focused on thematic interpretation due to heterogeneity in study designs and outcome measures. Studies were not formally appraised for quality, in line with standard scoping review methodology. Nonetheless, attention was paid to methodological clarity and relevance during the inclusion process.

Additional Considerations

Although the term "simulation" was central to the search strategy, some studies involving role play were included when they aligned with the experiential aims of



simulation-based education. These interventions provided practice opportunities for communication in emotionally charged scenarios and often mirrored simulation outcomes in terms of learning objectives.

Results

Selection of Studies

A total of 10 studies were identified as relevant to this review (Supplementary 1).^{4,16–24} The studies included two quantitative, one qualitative, three mixed-methods designs, and four project reports without formal scientific evaluation. For one of the mixed-methods studies, only the qualitative data was analyzed due to small sample size. Four studies included interprofessional learning, with three involving medical students and one involving social work students. Participant groups primarily included undergraduate nursing students (n=8), with one study focusing on pediatric nurses and one on nurse practitioner students. Three studies integrated innovative technologies: telehealth (two studies) and 360-degree immersive video (one study). The studies were conducted in the USA (3), UK (2), Germany, Belgium, Pakistan, Ireland, and Portugal (one each). Nine studies used the SPIKES protocol as a framework for training or assessing the delivery of bad news. A short overview of the included studies is presented in Supplementary 1.

Themes

Through the process of thematic analysis, four main themes were identified: Benefits of Simulation-Based Learning, the Value of Interprofessional Learning, Innovative Technologies, Emotional Challenges.

Benefits of Simulation-Based Learning

All included studies reported that simulation-based learning and role play were effective methods for training nursing students in BBN.^{4,16-24} These approaches helped students feel more prepared to deliver difficult information and provide support to families.¹⁶ Several studies indicated that simulation and role play enabled students to develop practical strategies for delivering bad news and reinforced previously acquired communication skills.^{18,19}

Pre-briefing and debriefing were frequently described as essential components of the simulation process. Pre-briefing served to clarify objectives and expectations, while debriefing provided space for reflection, feedback, and emotional processing.²⁰ In addition, studies noted improvements in students' communication abilities following structured training, including simulation-based activities.²⁰

Some studies also reported that simulations positively influenced students' confidence, critical thinking, and problem-solving abilities by offering realistic and supportive learning environments. 18,19 Identified limitations included insufficient simulation hours in some curricula16 and a lack of emphasis on psychosocial aspects in certain training formats. 19

The Value of Interprofessional Learning

Nursing students perceived their role in BBN not as the primary deliverers but as an essential source of support for patients and their families. 18,21 Interprofessional learning was described as a core component in preparing students for these situations, with many studies involving joint simulations between nursing and medical students.4 These simulations emphasized the importance of communication between different healthcare professionals when caring for patients with life-threatening conditions.4 In the reviewed studies, students from both professional groups reported that working together improved their ability to communicate effectively and enhanced their understanding of collaborative care.21 Wakefield et al.21 found that shared training helped students recognize the distinctions and overlaps in their roles, which contributed to clearer expectations and improved cooperation. Other studies reported that observing how students from other disciplines approached communication challenges allowed participants to reflect on and adjust their own strategies. 19,21 Across studies, interprofessional simulation was associated with improvements in teamwork, role clarity, and preparedness for collaboration in clinical settings.¹⁹

Innovative Technologies

Most studies reviewed used traditional role play or SPs for simulation training in BBN (n=7). However, three studies explored the use of newer technologies,

including 360° immersive video (360IV) and telesimulation (TS). ^{16,22,23} In one study, Goosse et al. ²² compared 360IV to SP-based simulations. Students used immersive headsets to view scenarios from the patient's perspective. Reported outcomes included improvements in communication skills, with particular emphasis on shared decision-making.

Other studies introduced telesimulation, using remote telecommunication tools to facilitate training. Kurji et al.³³ and Berta et al.¹⁶ implemented TS for BBN training and reported that it was feasible, though some technical issues such as internet connectivity posed challenges.

Emotional Challenges in Breaking Bad News

Several studies reported that delivering bad news evoked strong emotional responses in nursing students. Students described feelings of nervousness, inadequacy, and emotional strain during simulation exercises. ¹⁷²⁴ Common concerns included not knowing how to respond to patients' questions and lacking the confidence to manage emotionally charged conversations, particularly as new graduates. ¹⁷²⁴

Reported emotional reactions included anxiety, sadness, feelings of failure, and compassion. ¹⁶ Some students felt emotionally drained and inadequate after simulations, with several describing residual emotional effects afterward. ¹⁹

Students with personal experiences related to terminal illness also noted heightened emotional difficulty during these scenarios. In some cases, students stepped away from the simulation environment to manage their emotions.²³

Discussion

This scoping review identified four main themes through the process of thematic analysis: benefits of simulation-based learning, the value of interprofessional learning, innovative technologies, and emotional challenges. By synthesizing evidence across these areas, the review highlights current practices, emerging trends, and gaps in nursing education. These findings emphasize the complex nature of communication training and the importance of simulation in preparing nursing students both practically and emotionally.

The majority of studies suggest that simulation-based education using SPs or role play is an effective method for training nursing students in BBN. This aligns with existing literature indicating that simulation-enhanced education is a widely used strategy for developing collaborative communication skills. 3:25.26 Structured communication training through simulation helps bridge theoretical knowledge with practical application. 27 SPs, in particular, offer realistic, emotionally engaging learning experiences that improve student performance in delivering sensitive news.

However, the term "role play" was used inconsistently across studies. In some cases, it was unclear whether these activities met formal definitions of SBL, which usually include structured scenarios, feedback, and standardized environments. Role play often lacks these components, particularly realism and formal assessment. At key strength of role play is the opportunity it gives students to step into the role of the patient or family member. This perspective shift may foster empathy and a deeper understanding of the emotional impact of BBN.

Interprofessional simulation also emerged as a key method. It helps students understand the complementary roles of nurses and physicians in delivering bad news. Nurses often act as emotional supporters, assisting patients and families after the physician delivers the diagnosis. Interprofessional training fosters mutual respect, clarifies role boundaries, and improves collaborative care. 4,20,21 These approaches prepare nursing students to effectively participate in emotionally charged healthcare conversations as part of a team.

The emotional intensity of BBN was evident across multiple studies. Students reported feelings of nervousness, inadequacy, and emotional strain, both during training and clinical practice. ^{17,23} These emotional reactions, including anxiety and sadness, were often long-lasting. Some students felt overwhelmed or emotionally drained after simulations. ¹⁹ Debriefing sessions were identified as essential in helping students process these experiences, build resilience, and reflect on their communication strategies. ¹⁹ This highlights the need for structured emotional support within BBN training programs, including pre-briefing and debriefing, to support student well-being and skill integration.

Emerging innovations such as telesimulation and 360° immersive video offer logistical advantages and novel learning experiences. 16,22,23 For example, immersive video allows students to view scenarios from the patient's perspective, enhancing empathy and engagement. 22 However, most studies suggest these technologies should supplement, not replace, traditional simulations. Both telesimulation and 360IV face technical limitations and may reduce emotional interaction. 16,23 A rapid review of virtual patients supports this. While digital tools are effective compared to no training, they may lack the affective richness and interactive feedback critical for developing empathy and communication skills. 29 Therefore, digital innovations should be seen as valuable adjuncts rather than substitutes for SP-based training.

Future research should explore the sustainability of technological innovations beyond pandemic-driven use. Comparative studies between traditional and technology-based simulations could clarify their unique benefits and limitations. Moreover, expanding research to include midwives and allied health professionals will support the development of interdisciplinary BBN curricula. Finally, deeper investigation into emotional resilience-building strategies, such as pre-briefing and debriefing, will enhance the long-term effectiveness of simulation-based training.

Limitations

This scoping review has several limitations that should be considered when interpreting the findings. First, scoping reviews involve a degree of subjectivity, as they rely on the interpretation and synthesis of the available literature. The thematic analysis, although useful for identifying overarching patterns and themes, may also reflect researcher bias despite efforts to enhance reliability through independent coding and discussion. The included studies showed considerable methodological diversity, including differences in study design, sample size, data collection methods, and outcome measures, which makes it difficult to compare findings directly or draw firm conclusions. In addition, the scientific quality of the included studies was not formally appraised, consistent with scoping review methodology. However, this means that the findings may include evidence of varying quality and validity, which could impact the strength and reliability of the conclusions. Language restrictions also limited inclusion to studies published in English and German. This exclusion may have omitted relevant research published in other languages, potentially biasing the review's scope and generalizability. Finally, the relatively small number of studies focusing specifically on nursing students and BBN simulation training reflects the traditional perception of nurses primarily as supporters rather than primary communicators in BBN. This limited research base constrains the depth of the evidence and its applicability to wider educational contexts.

Conclusion

This review highlights that simulation-based learning is an effective and widely used method for preparing nursing students for breaking bad news. Role play, although less structured, offers value by allowing students to experience different perspectives, such as those of patients or family members. Interprofessional simulation, especially when conducted with medical students, enhances students' understanding of team dynamics, role boundaries, and collaborative communication, all essential in real-world BBN scenarios. Educators should prioritize these integrated approaches in nursing curricula to mirror clinical realities and promote mutual respect across disciplines.

Emerging technologies like telesimulation and 360° immersive video show promise in expanding access to training and fostering empathy through novel formats. However, these tools are best used as adjuncts rather than replacements. Telesimulation, for example, can be effective in remote or resource-limited settings but requires a good technical infrastructure and clear protocols to manage technical issues. 360IV may enhance emotional engagement, particularly for perspective-taking, but lacks the hands-on interactivity needed for full skills development. Therefore, educators should select technologies based on the learning objectives and context, combining digital tools with traditional SP-based scenarios where possible.

Conflict of Interest: The authors have no conflicts of interest to declare.

Funding: This study was conducted without any external funding or financial support.

Author Contributions: Concept – A.C.S.; Design – A.C.S., M.D.; Data collection and/or processing – A.C.S., M.D.; Data analysis and/or interpretation – A.C.S., M.D.; Literature search – A.C.S., M.D.; Writing – A.C.S., M.D.

Peer-review: Externally peer-reviewed.

References

- Paul NW. Überbringen schlechter Nachrichten in der P\u00e4diatrie: Das Gewicht der Worte. Monatsschr Kinderheilkd. 2016;164[7]:583-590. German. [CrossRef]
- Abbaszadeh A, Ehsani SR, Begjani J, et al. Nurses' perspectives on breaking bad news to
 patients and their families: a qualitative content analysis. J Med Ethics Hist Med. 2014;7:18.
- Dale MacLaine T, Lowe N, Dale J. The use of simulation in medical student education on the topic of breaking bad news: A systematic review. Patient Educ Couns. 2021;104(11):2670– 2681. [CrossRef]
- Schildmann J, Härlein J, Burchardi N, Schlögl M, Vollmann J. Breaking bad news: evaluation study on self-perceived competences and views of medical and nursing students taking part in a collaborative workshop. Support Care Cancer. 2006;14(11):1157–1161. [CrossRef]
- Mansoursamaei M, Ghanbari Jolfaei A, Zandi M, Mansoursamaei A, Salehian R. Self-assessment of residents in breaking bad news; skills and barriers. BMC Med Educ. 2023;23(1):740. [CrossRef]
- VandeKieft GK. Breaking bad news. Am Fam Physician. 2001;64(12):1975–1978.
- Warnock C, Tod A, Foster J, Soreny C. Breaking bad news in inpatient clinical settings: role
 of the nurse. J Adv Nurs. 2010;66[7]:1543–1555. [CrossRef]
- Warnock C. Breaking bad news: issues relating to nursing practice. Nurs Stand. 2014;28(45):51–58. [CrossRef]
- Wahyuni S, Gautama MSN, Simamora TY. A Literature Review of Nurses Challenges and Barriers in Assisting Patients and Families Facing Breaking Bad News. Indian J Palliat Care. 2023;29(3):243–249. [CrossRef]
- Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP. SPIKES-A six-step protocol for delivering bad news: application to the patient with cancer. Oncologist. 2000;5(4):302– 311 [CrossRef]
- Alshami A, Douedi S, Avila-Ariyoshi A, et al. Breaking Bad News, a Pertinent Yet Still an Overlooked Skill: An International Survey Study. Healthcare [Basel]. 2020;8[4]:501. [CrossRef]
- Arksey H, O'Malley L. Scoping studies: towards a methodological framework. Int J Soc Res. 2005;8(1):19-32. [CrossRef]
- The Preferred Reporting Items for Systematic Reviews and Meta-Analyses. Accessed September 30, 2025. https://www.prisma-statement.org/
- Lane C, Rollnick S. The use of simulated patients and role-play in communication skills training: a review of the literature to August 2005. Patient Educ Couns. 2007;67(1–2):13– 20. [CrossRef]
- Braun V, Clarke V, Newson L. Thematic Analysis: A Practical Guide. 1st edition. London, UK: SAGE Publications; 2022. [CrossRef]
- Berta M, Burt L, Carlucci M, Corbridge S. Breaking Bad News via Telehealth: Simulation Training for Nurse Practitioner Students. J Nurs Educ. 2022;61(9):528–532. [CrossRef]
- 17. Laranjeira C, Afonso C, Querido Al. Communicating Bad News: Using Role-Play to Teach Nursing Students. SAGE Open Nurs. 2021;7:23779608211044589. [CrossRef]
- 18. Cust F, Rodgers E, Boden R. Using simulation to help paediatric nurses learn to break bad news. Nurs Times. 2022;118(3):1–3.
- Sweeney C, O'Sullivan E, McCarthy M. Keeping it real: Exploring an interdisciplinary breaking bad news role-play as an integrative learning opportunity. JoSoTL. 2015;15[2]14–32. [CrossRef]
- Pastor DK, Cunningham RP, White PH, Kolomer S. We Have to Talk: Results of an Interprofessional Clinical Simulation for Delivering Bad Health News in Palliative Care. Clin Simul Nurs. 2016;12(8):320–327. [CrossRef]
- Wakefield A, Cocksedge S, Boggis C. Breaking bad news: qualitative evaluation of an interprofessional learning opportunity. Med Teach. 2006;28(1):53–58. [CrossRef]
- Goosse M, Bragard I, Peeters L, Willems S. Comparison of Two Simulation Tools to Develop Empathic Communication Skills in Nursing Students Breaking Bad News: A Randomized Controlled Study. Clin Simul Nurs. 2024;87:101493. [CrossRef]
- Kurji Z, Aijaz A, Aijaz A, Jetha Z, Cassum S. Telesimulation Innovation on the Teaching of SPIKES Model on Sharing Bad News. Asia Pac J Oncol Nurs. 2021;8(6):623–627. [CrossRef]
- Wiles LL, Mahoney I, Hutton S. Whose Line Is It Anyway? Undergraduate Nursing Simulation for Breaking Bad News. Nurs Educ Perspect. 2025;46(3):197–199. [CrossRef]
- Lackie K, Miller S, Brown M, et al. Interprofessional collaboration between health professional learners when breaking bad news: a scoping review of teaching approaches. JBI Evid Synth. 2024;22(6):1071–1102. [CrossRef]
- Warrier V, Pradhan A. A Narrative Review of Interventions to Teach Medical Students How to Break Bad News. Med Sci Educ. 2020;30(3):1299–1312. [CrossRef]
- Tien J, Wakefield A. The clinical effectiveness of breaking bad news educational programme for registered nurses: A review of the recommendations. Singapore Nurs J. 2018;45[2]:23–33.
- Watts PI, McDermott DS, Alinier G, et al.; INACSL Standards Committee. Healthcare Simulation Standards of Best PracticeTM Simulation Design. Clin Simul Nurs. 2021;58:14–21. [CrossRef]
- Kang W. The use of virtual patients for breaking bad news: A rapid review. Clin Teach. 2024;21[2]:e13681. [CrossRef]

Suppleme	Supplementary 1. Overview of included studies			
Year	Title & authors		Description of educational intervention	Results
2006	Breaking bad news: Evaluation study on self-perceived competences and views of medical and nursing students taking part in a collaborative workshop by Schildmann et al.4	Participants: 47 students (nursing students n=24, medical students n=23). Quantitative design Data collection: Pre/post-test design questionnaire. Data analysis: Statistical analysis.	This study evaluated seven interprofessional courses on Breaking Bad News (BBN) for medical and nursing students. Courses included discussions with simulated patients, feedback, and conversations about interprofessional care for patients and family members. Participants completed questionnaires at the beginning and end of the course to assess	After completing the course, 39 participants reported receiving valuable suggestions for improving their communication behavior with patients diagnosed with life-threatening illnesses. Additionally, all students emphasized the importance of effective communication between medical and nursing professionals in providing care for these patients.
2009	Breaking bad news: Qualitative evaluation of an interprofes- sional learning opportunity by Wakefield et al. ²¹	Participants: 26 students fnursing students n=22, medical students n=12). Mixed-methods design Data collection: Questionnaires fone with Likert scale, one with open-ended questionnaire was coded (qualitatively), due to small sample size, the other questionnaire was not analyzed.	Students were divided into groups of 4–6, supported by two facilitators, and worked through case-based scenarios using SPIKES (Setting, Perception, Invitation, Knowledge, Emotions, and Strategy). Doctor-nurse pairs practiced delivering distressing news to simulated patients and their families. Following independent review of the scenarios, students engaged in unprompted discussions to plan their approach. Each session concluded with students sharing reflections on the outcomes of their interactions.	The study highlighted that collaboration between nursing and medical educators fosters trust, enabling effective learning even in brief interventions. Participants' comments demonstrated shared learning, emphasizing teamwork, collaboration, and gaining insight into other professionals' roles and philosophies of care, which helped reduce pre-existing prejudices.
2015	Keeping it real: Exploring an interdisciplinary breaking bad news role-play as an integrative learning opportunity by Sweeney et al.19	Participants: 31 students (nursing students n=11, medical students n=20). Qualitative design Data collection: Focus group interviews, observation, student feedback questionnaire. Data analysis: Thematic analysis.	This study explored an interdisciplinary BBN role-play for undergraduate medical and nursing students. Participants alternated roles in four staged scenes of the role-play, reflecting real-world BBN scenarios. Feedback from focus groups, facilitators, and recordings of the role-play was thematically analyzed.	Although students struggled with teamwork, they valued the authentic learning experience provided by this thoughtfully structured interdisciplinary BBN roleplay grounded in real-life. Expanding the availability of such opportunities in undergraduate healthcare education should be considered.
2016	We Have to Talk: Results of an Interprofessional Clinical Simulation for Delivering Bad Health News in Palliative Care by Pastor et al. ²⁰	Participants: 10 students (nurse practitioner students n=5 and master of social work students n=5). Mixed-methods design Data collection: Pre/post-test with the Readiness for Interprofessional Learning Scale and Survey of Students' Perceptions of Their Ability to Deliver Difficult News, videotaped debriefing session. Data analysis: Survey analysis and thematic	This study paired five dyads of graduate family nurse practitioner (FNP) and master of social work (MSW) students in a simulated care setting to break bad news. The students worked together in a simulation learning center to deliver difficult news to a standardized patient (SP), focusing on evidence-based communication strategies.	The study demonstrated the feasibility of pairing graduate nursing and social work students to deliver bad health news in a simulated experience, addressing challenges such as scheduling and resource utilization. Although the pilot involved only ten students, plans to scale the simulation are in place. The measurement tools effectively assessed students' perceived competency in BBN and their readiness for interprofessional collaboration.
2020	Telesimulation Innovation on the Teaching of SPIKES Model on Sharing Bad News by Kurji et al. ²³	synthesis of student's comments. Participants: 141 nursing students. Project report without formal scientific evaluation.	Faculty at Aga Khan University piloted a telesimulation project to teach trainee nurse interns communication skills and breaking bad news using the SPIKES model. Following best practices for simulation-based learning, the intervention was standardized according to the International Nursing Association for Clinical Simulation and Learning guidelines and implemented with 141 students.	Telesimulation (TS) proved to be an effective tool for teaching communication skills in palliative care, as well as in other nursing domains such as adult health and mental health. While TS cannot fully replace onsite clinical experience, it enhances skills such as counseling, decision-making, and conflict resolution, and can complement psychomotor training with manikins. Adhering to best practices ensures high-quality TS activities, boosting students' confidence levels, especially during and after the Coronavirus Disease 2019 (COVID-19) pandemic.

Suppleme	Supplementary 1. Cont.			
Year	Title & authors		Description of educational intervention	Results
2021	Communicating Bad News: Using Role-Play to Teach Nursing Students by Laranjeira et al. ¹⁷	Participants: 30 nursing students Project report without formal scientific evaluation.	This study involved 30 fourth-year students enrolled in a palliative care nursing course. The simulation, conducted during three theoretical-practical classes, aimed to develop key competencies, including effective communication in palliative care, implementation of the SPIKES model, empathetic responses to emotional distress, and collaborative decision-making using course concepts.	In this study, students reported positive experiences, noting that the simulation enhanced their cognitive (theoretical knowledge), interpersonal (therapeutic alliance), and affective (emotional exploration) skills. However, they felt more prepared to address patients' physical needs than their spiritual or psychosocial needs, highlighting the importance of a more integrated approach to care.
2022	Breaking Bad News via Telehealth: Simulation Training for Nurse Practitioner Students by Berta et al.16	Participants: 33 nurse practitioner students. Mixed-methods design Data collection: Pre/post-simulation surveys and written reflections via Qualtrics. Data analysis: Internal consistency, survey analysis, and thematic analysis.	This mixed-methods study examined nurse practitioner students across two universities. The simulation was conducted individually via Zoom, with students grouped by their specialty training track for a pre-briefing led by a faculty member before engaging in the simulation.	Engaging in the BBN simulation significantly increased students' self-reported readiness to deliver bad news via telehealth. Participants strongly agreed that the simulation effectively addressed essential topics, supported the development of necessary skills, and provided valuable resources.
2022	Using simulation to help paediatric nurses learn to break bad news by Cust et al.18	Participants: 20 pediatric nursing students Project report without formal scientific evaluation.	In this study, students created scenarios for clinical simulation laboratories in which they alternated roles as nurse, doctor, patient, or family member. The simulation focused on delivering and receiving bad news, as well as providing comfort. Through this experiential learning, students identified key areas for improving practice.	The simulation session improved students' confidence in working with children and families during difficult conversations. Students highlighted the importance of empathy, compassion, and providing reflective support when delivering distressing news. They valued the simulation as a vital opportunity to build knowledge, skills, and confidence, while recognizing the need for more exposure to consolidate learning for real-world scenarios.
2024	Comparison of Two Simulation Tools to Develop Empathic Communication Skills in Nursing Students Breaking Bad News: A Randomized Controlled Study by Goosse et al. ²²	Participants: 69 nursing students Quantitative design Data collection: Randomized controlled non-inferiority trial; pre/post, and one-month follow-up role-play assessments with patient-actors; questionnaires on empathy, stress, and self-efficacy; actor-rated empathy and confidence. Data analysis: External ratings of communication skills; statistical comparison of group outcomes.	This study evaluated the noninferiority of 360° immersive video [360IV] compared to standardized patients (SP) in simulation-based BBN training. In the 360IV condition, students passively observed prerecorded videos through headsets, adopting the perspective of a patient. In the SP condition, students actively played the role of a nurse delivering difficult news to an SP. Participants were randomly assigned to experimental groups [360IV or SP] or a control group, with assessments conducted at baseline [T0], immediately after training [T1], and one month later [T2].	Empathy perceived by patient-actors improved across all groups, but this improvement was sustained only in the 360lV condition. The SP condition, however, produced superior communication outcomes based on external evaluations. Both 360lV and SP training tools offered complementary benefits for BBN skill development in nursing students, highlighting new opportunities for enhancing BBN education.
2024	Whose Line is It Anyway? Undergraduate Nursing Simulation for Breaking Bad News by Wiles et al. ²⁴	Participants: Nursing students (exact number not reported; only percentages provided in the article). Project report without formal scientific evaluation.	This study employed the SPIKES protocol to teach breaking bad news using standardized patient scenarios that demonstrated effective and ineffective techniques. Students participated in role-play exercises across 10 scenarios spanning the life span, with structured pre-briefing and debriefing sessions, as well as reflective evaluations through polling apps and surveys to reinforce best practices and document learning.	Feedback from students indicated that 37% strongly agreed and 53% agreed that their understanding of the nurse's role in BBN had evolved through the activity. Most students (84%) felt better prepared to support patients and families in receiving bad news, although 16% still did not feel ready for this responsibility. Students reported gaining practical insights into delivering bad news empathetically and building trust with patients, but they found pediatric and obstetric scenarios more challenging than those involving older adults.