A Simulation-Based Curriculum To Address Relational Crises in Medicine

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Abstract

Introduction Preparing health care professionals for challenging communication tasks such as delivering bad news to patients and families is an area where a need for improved teaching has been identified.

Objectives We developed a simulation-based curriculum to enhance the skills of health care professionals, with an emphasis on the communication of difficult or bad news, which we termed relational crises.

Methods Our approach was based on a review of existing simulation-based curricula, with the addition of unique features, including a learner-focused needs assessment to shape curriculum development, use of 360-degree evaluations, and provision of written feedback. Development and implementation of our curriculum occurred in 3 phases. Phase I involved a multidisciplinary needs assessment, creation of a clinical scenario based on needs assessment results, and training of standardized patients. In Phase II we implemented the curriculum with 36 pediatric and internal medicine-pediatrics residents, 20 nurses, and 1 chaplain. Phase III consisted of the provision of written feedback for learners, created from the 360-degree evaluations compiled from participants, observers, faculty, and standardized patients.

Results Participants felt the scenarios were realistic (average rating of 4.7 on a 5-point Likert scale) and improved their practice and preparedness for these situations (average rating, 4.75/5 and 4.18/5, respectively). Our curriculum produced a statistically significant change in participants' pre- and postcurriculum self-reported perceptions of skill (2.42/5 vs. 3.23/5, respectively, $P < .001$) and level of preparedness (2.91/5 vs. 3.72/5, respectively, $P < .001$).

Discussion A simulation-based curriculum using standardized patients, learner-identified needs, 360-degree evaluations, and written feedback demonstrated a statistically significant change in participants' self-perceived skills and preparedness for communicating difficult news in pediatrics.

Editor's note: The online version of this article contains the feedback form used in this study.

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Introduction

Health care professionals need to develop skills and a comfort level with challenging communication tasks. Formal training in the communication skills needed for delivering bad news has received increasing attention in medical education literature, and the need for improvement has been identified. Review of the literature reveals this ubiquitous task is distressing for health care professionals and cites inadequate training, absence of supervisor support, and lack of skill as barriers to effectiveness.[1–4] Poorly communicated bad news can lead to patient and family misunderstanding, adjustment difficulties, negative attitudes toward health care providers, and decreased satisfaction with care.[1,5–7] We sought to address this situation by developing a simulation-based curriculum to enhance the skills of health care professionals in communicating difficult news, hereafter termed relational crises.

The use of standardized patients or actors in simulating difficult conversations has proven both feasible and effective in nursing, dental, and medical education.[7–19] We reviewed existing models and discovered that significant

variability exists among studies in simulated clinical setting, participant makeup, evaluative method, feedback process, and demonstrable long-term benefit.

Our goal was to describe the creation and initial results of a curriculum designed to incorporate the strongest components of existing models while adding the unique features of a design based on learner-identified needs, 360-degree evaluative method, and provision of written feedback for learners.

What was known

Residents, particularly those in critical care settings, need to develop skills and comfort with challenging communication tasks such as delivering bad news to patients.

What is new

Use of a simulation-based curriculum using standardized patients to enhance health professionals' skills in delivering difficult or bad news, with 360-degree evaluation and written feedback.

Limitations

Single institution study may limit generalizability, assessment solely used learners' self-ratings of efficacy, not evaluation based in application of the new skills in real clinical situations.

Bottom line

The simulation-based curriculum resulted in a statistically significant change in participants' self-perceived skills and preparedness for communicating difficult news in pediatrics.

Methods

We developed the simulation curriculum in 3 phases. Phase I involved an interdisciplinary needs assessment, creation of simulated scenarios based on needs-assessment results, and training of standardized patients. Phase II consisted of curriculum implementation for 36 residents, 20 nurses, and 1 chaplain. Phase III involved the provision of written feedback for learners. The program was reviewed and exempted by the Institutional Review Board.

Phase I: Needs Assessment and Curriculum Development

A needs assessment survey was created and distributed to all attending physicians, Intensive Care Unit nurses, Hematology/Oncology nurses, categorical pediatric residents, and combined internal medicine-pediatrics residents. The survey asked participants about their perceptions regarding the formal education of communication skills, with special attention to the task of communicating bad news. Surveys were tailored to each target group (ie, nurses vs. attending physicians vs. residents) in order to gain insight into discipline-specific skills and learning needs and consisted of questions using responses based on 5-point Likert scales, adapted from a study in which medical residents were questioned about their first remembrance of giving bad news.[3] A list of 10 difficult situations was provided, and survey respondents were asked to choose the 3 situations in which they would like to gain more experience. Surveys distributed to attending physicians queried the complement of difficult situations they felt would most benefit trainees.

The 3 most commonly selected difficult situations were incorporated into conversation development. The final product was a 3-part scenario revolving around a fictional child, his family, and the events that unfolded upon his admission to the pediatric intensive care unit. Standardized patients were drawn from the University of Louisville Standardized Patient Program and underwent 8 hours of training by the creators of the simulation curriculum.

Phase II: Curriculum Implementation

We titled our curriculum the Program for the Approach to Complex Encounters (PACE) and based its methodology on the Institute for Professionalism and Ethical Practice Program to Enhance Relational and Communication Skills (PERCS), a day-long workshop using actors to simulate difficult conversations with interdisciplinary participants, followed by videotape review with peer and faculty feedback.[9,14] Grounded in the theory of relational learning, PERCS emphasizes the creation of a safe learning environment, reflection and self-awareness, and diverse perspectives.[9,14] As with PERCS, conversations were kept improvisational (and therefore more authentic) by minimizing scripting. Prestudy and poststudy designs were used to investigate educational impact.[9,14]

Residents on elective rotations were assigned to participate in 1 PACE session per academic year. Nurses attended on a voluntary basis with continuing education credits offered as compensation. Sessions were conducted monthly, each lasting 4.5 hours. Simulated conversations took place in the Family Education Room, location of such real-life conversations, which is equipped with a video camera and microphone. Audiovisual equipment with recording capabilities allowed real-time viewing and video playback for review. Participants completed a presession self-assessment about communicating bad news to gain insight into prior communication skills training. A similarly constructed postsession survey was completed at the end of the day to measure changes in participant perceptions. Sessions began with a brief didactic presentation given by a program facilitator. Physician-nurse pairs participated in one simulated conversation each. Conversations were followed by a feedback and discussion session in which standardized patients were included. This format was repeated for all conversations. To address the issue of sustainable benefit, we distributed a survey to all PACE participants at the end of the 2009–2010 academic year, asking them to rate both the quality and usefulness of the simulated experience.

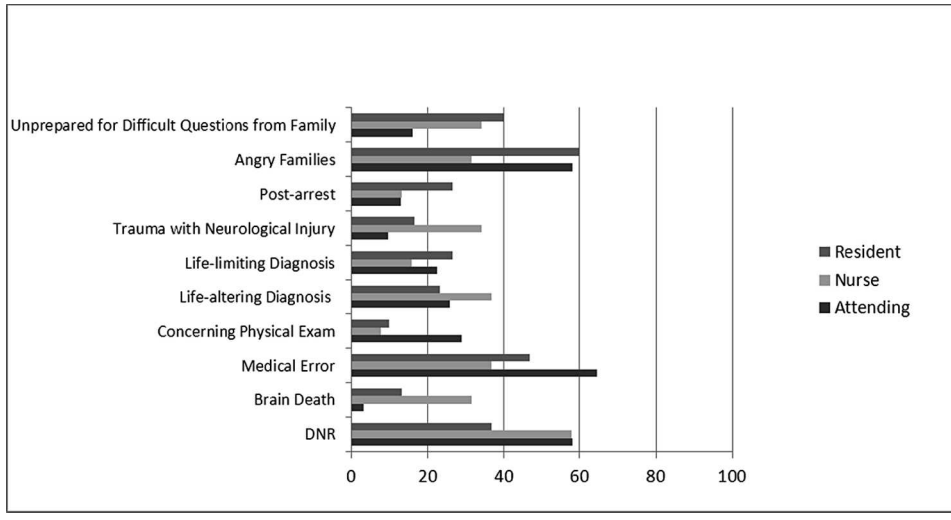

FIGURE **Response to Needs Assessment Survey by Discipline. Results Are Given as Percentages**

Phase III: Provision of Feedback

PACE was designed with the goal of providing feedback for learners based on content-specific curricular goals presented during the initial didactic presentation. Goals were based on the Kalamazoo Consensus Statement Essential Elements Checklist.[20] Following the feedback and discussion session, each simulated conversation was evaluated in a 360-degree manner by participants, peer observers, standardized patients, and facilitators based on an expanded version of the Kalamazoo Consensus Statement Essential Elements Checklist modified for 360-degree use with gap analysis.[17,21–23] Gap analysis is a method that uses differences between faculty and self-evaluation scores to identify falsely perceived strengths or weaknesses, providing valuable insight, and promoting a practice of self-reflection.[20,21] Evaluations were compiled and used to create a written feedback form highlighting gap analysis results.

Statistical Methods

Descriptive statistics were used to summarize survey results. Comparison of pre- and postsession participant questionnaires were conducted using the Wilcoxon signed-rank test. Data were analyzed using IBM SPSS software (Armonk, NY) version 19.

Results

Phase I

Thirty-one attending physicians, 30 residents, and 38 nurses completed the needs assessment survey (n = 99). Respondents reported that it was important for health care professionals to be skillful at communicating bad news, with a mean rating of 4.86 on a 5-point Likert scale (with 1 representing not important and 5 very important). Respondents agreed these skills were teachable (3.97/5) and that formal education in the communication of bad news is important (4.16/5). The 3 most commonly selected scenarios were ''Medical Error,'' ''Angry Families,'' and ''Do not Resuscitate (DNR)'' (FIGURE). These topics were incorporated into a clinical scenario surrounding a fictional 7-year-old boy with recurrent leukemia. The first conversation entailed the disclosure of medical error in which the medical team informs the child's family that he was given an antibiotic to which he is allergic. The second conversation occurs several hours later, when realization of the medical error results in familial anger and mistrust of the medical team. Three days later, the child's clinical condition deteriorates, necessitating invasive mechanical ventilation and inotropic support for septic shock. In the final conversation, his family is approached to discuss limitations of care.

Phase II

Twelve PACE workshops were conducted from July 2009 to June 2010 with 57 participants (36 residents, 20 nurses, and 1 chaplain). Demographic characteristics of participants are displayed in the TABLE. Participants rated the overall experience highly, with a mean score of 4.45 on a 5-point Likert scale (1 = poor to 5 = excellent). Participants found the experience useful in terms of improving daily practice (4.75/5, 1 = not at all to 5 = very useful), felt the simulations were realistic (4.53/5, 1 = not at all to 5 = very realistic), and found the experience improved their sense of

TABLE **Demographic Characteristics and Prior Experiences of Phase II PACE Participants**

	Residents No. (%)	Nurses No. (%)	Other No. (%)	Total
Participant No.	36 (63)	20 (35)	1[a] (2)	57
Years Experience				
PGY-2	7 (19)			
PGY-3	20 (56)			
PGY-4	8 (22)			
PGY-5	1 (3)			
0–5		3 (15)		
5–10		3 (15)		
10–15		4 (20)		
15–20		2 (10)		
>20		8 (40)		
Prior Experiences				
Given bad news personally	30 (83)	15 (75)	1 (100)	46 (80%)
Observed senior person giving bad news	33 (91)	18 (90)	1 (100)	52 (91%)
Received formal lecture	11 (28)	1 (5)	1 (100)	13 (23%)
Been observed by others while giving bad news	13 (36)	7 (35)	1 (100)	21 (37%)
Participated in role play	13 (36)	3 (15)	0	16

[a] One participant was a chaplain.

preparedness to communicate bad news (4.18/5, 1 = improved not at all to 5-improved a great deal). The program produced a statistically significant change in pre- versus postperceptions of skill (2.42/5 vs. 3.23/5, respectively, $P < .001$) and preparedness (2.91/5 vs. 3.72/5, respectively, $P < .001$). Participants viewed direct participation in the simulated conversation as the most beneficial aspect of the session (1.85/5, 1 = the most helpful, 5 = the least), and the didactic component the least beneficial (4.55/5). Fifty-five of 56 participants answered yes when asked if they would recommend the program to others (98.2%; 1 participant did not answer). Year-end survey results (all based on a 5-point Likert scale with 1 = not at all and 5 = a great deal) indicated that participants still felt the experience was useful (4.125/5) and had improved their sense of preparedness (4.06/5), confidence (4.0/5), and skill (4.0/5).

Phase III

Graphical feedback forms were provided for all participants beginning in January 2010. The feedback form is included as an online appendix.

Discussion

Our goal was to create a unique communication skills curriculum incorporating the strongest components of existing models. We began with a needs assessment, an essential first step in creating an educational program.[23] We found only 2 published simulation-based communication curricula in which a needs assessment was initially conducted.[23,24] Neither curriculum, however, posed questions to the learners themselves and instead focused on faculty and nurse perceptions. Our design is unique in that curriculum development relied heavily on the perceived needs of intended learners, a feature suggested by adult learning theorists to promote learner engagement.[23]

In accordance with previous models, we chose to include nurses and physicians, believing that this interdisciplinary component significantly enhanced realism.[9,11,14] We found, in keeping with earlier studies, that difficult conversations occur early in training but that residents experience an ongoing lack of feedback regarding their skills.[3] While 30 of 36 (83%) resident physicians had prior experience with discussing bad news, only 13 of 36 (43%)

had been observed by faculty and only 7 of 36 (23%) had received feedback. Nurses had even less prior experience (TABLE). Our curriculum addresses these gaps in training by giving participants the opportunity to practice in a multidisciplinary, realistic, and safe environment, where the beneficial feedback is provided by peers, facilitators, and standardized patients.

Provision of content-specific feedback was instituted in January 2010, based on a validated communication skills tool.[22] We chose to use a 360-degree evaluation process involving facilitators, standardized patients, observers, and conversation participants. Although previously published evaluation strategies included the use of self-assessment surveys,[9,17] standardized patient-driven evaluation,[10–12,17] and blinded evaluators,[8,16] the use of 360-degree evaluation process incorporating gap analysis was rare.[22] This methodology promotes the practice of self-reflection by highlighting differences between self perception and group perception, encouraging the learner to focus on perceptual lacunae. To our knowledge, this methodology is not a component of existing models of communication skills training.

Overall, our simulation curriculum has been well received by participants, with high ratings for usefulness and realism. PACE has also demonstrated statistically significant changes in participants' feelings of preparedness and skills in approaching difficult conversations. Participants have stated nearly unanimously they would recommend the course to others. Addressing learner-identified needs and providing a multidisciplinary, realistic approach and the opportunity for in-depth discussion and focused feedback have contributed to the success of this curriculum and make PACE a unique model that could be adopted by other institutions.

Limitations of our study include the use of a single-institution convenience sample and a lack of data regarding sustainable or real-life changes in behavior for participants. We chose to use a convenience sample based primarily on resident and nurse availability and recognize that because of this, all conclusions about curricular effect are tentative. While results demonstrated significant changes in self-perceptions of skill and preparedness, these data were obtained through the use of a nonvalidated survey tool. Further prospective research will be needed to determine whether PACE results in sustained improvement in participant communication skills, although year-end survey results are encouraging. Admittedly, immediate postcourse evaluations may not translate in to real-world achievement of competency and may be self-referential, a known criticism of simulation as a teaching methodology.[25,26] Studies exist, however, suggesting that long-term attainment of skills is possible by using this methodology.[2,14] We are currently examining methods to assess residents' communication skills in the clinical setting, pre- and post-PACE.

Conclusions

We found instituting a simulation-based program a feasible method to teach communication skills to health care professionals at our institution. PACE was given an overall high rating for usefulness by learners and produced a statistically significant change in learners' self-perceptions of skill and preparedness.

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