

Original Article

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A standardized low-cost peer role-playing training intervention improves medical student competency in communicating bad news to patients in Botswana

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Abstract

Objective. The purpose of this study was to demonstrate effectiveness of an educational training workshop using role-playing to teach medical students in Botswana to deliver bad news.

Method. A 3-hour small group workshop for University of Botswana medical students rotating at the Princess Marina Hospital in Gaborone was developed. The curriculum included an overview of communication basics and introduction of the validated (SPIKES) protocol for breaking bad news. Education strategies included didactic lecture, handouts, role-playing cases, and open forum discussion. Pre- and posttraining surveys assessed prior exposure and approach to breaking bad news using multiple-choice questions and perception of skill about breaking bad news using a 5-point Likert scale. An objective structured clinical examination (OSCE) with a standardized breaking bad news skills assessment was conducted; scores compared two medical student classes before and after the workshop was implemented.

Result. Forty-two medical students attended the workshop and 83% (35/42) completed the survey. Medical students reported exposure to delivering bad news on average 6.9 ($SD = 13.7$) times monthly, with 71% (25/35) having delivered bad news themselves without supervision. Self-perceived skill and confidence increased from 23% (8/35) to 86% (30/35) of those who reported feeling “good” or “very good” with their ability to break bad news after the workshop. Feedback after the workshop demonstrated that 100% found the SPIKES approach helpful and planned to use it in clinical practice, found role-playing helpful, and requested more sessions. Competency for delivering bad news increased from a mean score of 14/25 (56%, $SD = 3.3$) at baseline to 18/25 (72%, $SD = 3.6$) after the workshop ($p = 0.0002$).

Significance of results. This workshop was effective in increasing medical student skill and confidence in delivering bad news. Standardized role-playing communication workshops integrated into medical school curricula could be a low-cost, effective, and easily implementable strategy to improve communication skills of doctors.

Introduction

Delivering bad news is a task that doctors encounter daily in most medical practices (Alelwani & Ahmed, 2014), and even more frequently in low- and middle-income countries (LMIC) where morbidity and mortality are high. The term “bad news” refers to any information transmitted to patients or their families that directly or indirectly involves a negative change in their lives or view of their future (Alelwani & Ahmed, 2014; Baile et al., 2000). Existing reports show that practicing doctors and residents lack confidence and skill in performing this task, and most have never received any formal training (Alelwani & Ahmed, 2014; Rosenbaum et al., 2004). In the past, practitioners learned to give patients bad news by trial and error and by observing role models, which is often not effective (Rosenbaum et al., 2004). Breaking bad news is a complex task requiring many skills including communication, responding to emotional reactions, and involving the patient and family members (Baile et al., 2000). Discomfort among providers can be attributed to providers feeling responsible for the misfortune, unresolved feelings about death and dying, concerns about their own emotional response, and concerns about the patient's response to the news (Rosenbaum et al., 2004). Many doctors conceal bad news from patients to not emotionally upset them or destroy hope for a cure or miracle (Alelwani & Ahmed, 2014). A qualitative study in Tanzania emphasized that providers are not comfortable or competent in breaking bad news; providers fear if patients have a poor prognosis disclosed then they will abandon treatment and turn to

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traditional healers, which may cause more harm; and if a doctor admits to failure of modern medicine, patients may start to believe the doctor is bewitched (Lewis et al., 2017). The way a serious disease is communicated can have a significant effect on patients' perceptions about their disease, their health outcome, long-term relationship with their doctor, and both patient and provider satisfaction (Alelwani & Ahmed, 2014; Luttenberger et al., 2014; Rosenbaum et al., 2004). Physicians who are comfortable breaking bad news may be subjected to less stress and lower rates of burn-out (Baile et al., 2000; Luttenberger et al., 2014).

The task of breaking bad news can be improved by understanding the process involved and approaching it as a step-wise procedure, applying well-established principles of communication and counselling (Baile et al., 2000). The SPIKES six-step protocol for delivering bad news is commonly followed (Baile et al., 2000) and comprises (step one, "S"), "*setting up the interview*" including mental rehearsal, arranging for privacy, involving significant others, sitting down, making connection with the patient, and managing time constraints and interruptions; (step two, "P") "*assessing the patient's perception*", in which open-ended questions are used to understand what the patient currently understands about the medical situation; (step three, "I") "*obtaining the patient's invitation*" to determine how much information he or she would like to know; (step four, "K") "*giving knowledge and information to the patient*" where the patient is first warned and then given bad news in small pieces of information, giving the patient time to process; (step five, "E") "*addressing the emotions of the patient with empathetic responses*" by first pausing and observing the emotion and then identifying, validating, and offering empathetic responses; and (step six, "S") "*strategy and summary*" in which the patient is given a clear plan for the future (Baile et al., 2000). The SPIKES protocol is used in many medical schools (Rosenbaum et al., 2004).

Many educational models for teaching doctors how to effectively deliver bad news have been studied, including didactic lectures, speaker panels, small-group discussions, teaching moments in clinical care, peer role-playing cases, computerized cases, small group or one-to-one standardized patient role playing (Alelwani & Ahmed, 2014; Rosenbaum et al., 2004), role playing with cancer survivor volunteers (Baer et al., 2008), and use of interactive theater (Skye et al., 2014). These approaches vary in the amount of time required for faculty and students, monetary resources, amount and type of feedback for the student, and how closely the approaches resemble reality (Rosenbaum et al., 2004). Teaching methods that offer students an experience in which they receive feedback have greater benefits than pure lectures (Luttenberger et al., 2014). Role playing is believed to be helpful so the learner can improve not only verbal but also nonverbal communication, recognize emotions and learn to respond compassionately, and enhance professionalism by allowing him or her to become more self-aware (Baile & Blatner, 2014). Peer role playing has been shown to be as effective as the use of standardized patients (Luttenberger et al., 2014). Peer role playing also seems to create an appreciation of empathy in future doctors because they are given the opportunity to stand in the shoes of their future patients (Luttenberger et al., 2014). Furthermore, the use of peer role playing is less time consuming and less expensive than the use of hired standardized actors (Luttenberger et al., 2014).

The majority of breaking bad news training programs assess the effect on immediate learner satisfaction and confidence rather than the change in the actual behavior of the learner in clinical

practice, because this is difficult to evaluate (Alelwani & Ahmed, 2014; Rosenbaum et al., 2004). Studies have recently implemented objective structured clinical examination (OSCE) examinations that use standardized patients to simulate an actual clinical experience, in this case breaking bad news, to test learner competence through observation by an evaluator (Lamba et al., 2016). Most studies to date have been performed in high-income countries (Alelwani & Ahmed, 2014; Rosenbaum et al., 2004); however, delivering bad news is a task that doctors in LMIC face more frequently because morbidity and mortality are higher. In Botswana from 2011 to 2013 on the pediatric ward at Princess Marina Hospital (PMH), the mortality rate in the neonatal unit was high at 20% (259/1275) and in the pediatric medical ward, the mortality rate was 6% (250/2183) (Patlakwe, 2013), yet medical staff and students at the University of Botswana have not received formal training in communicating bad news and there is only one adult-focused palliative care-trained physician for the entire hospital. A study in Nigeria showed that doctors were unconsciously incompetent in breaking bad news because of a low level of training and little to no knowledge of recommended communication strategies (Adebayo et al., 2013). There is an urgent unmet need for medical students, especially in LMIC, to learn how to deliver bad news and communicate effectively with patients and families.

The objective of this project was to demonstrate effectiveness of an educational workshop using peer role-playing to teach medical students in Botswana to deliver bad news and communicate more effectively with patients and their families.

Methods

Setting

The University of Botswana School of Medicine opened in 2009 and is a 5-year program. PMH is a 525-bed tertiary referral center located in Gaborone, Botswana, and is the main academic teaching hospital in Botswana. Medical students rotate at PMH for clinical clerkships during their third, fourth, and fifth years of medical school. There are 30–45 medical students per class. Structured breaking bad news training was not part of the medical school curriculum before this project.

Timeline of interventions

Figure 1 outlines the timeline of the training intervention. This study involved all fifth-year medical students completing their pediatric clinical rotation at the University of Botswana and graduating in 2015. Students completed an OSCE breaking bad news testing scenario using a standardized patient actress as part of their final medical school examination. Students from the 2014 graduating class performed very poorly on their OSCE breaking bad news skills station and did not have a standardized approach to breaking bad news to families. As a result of this OSCE, a 3-hour educational workshop was developed for the incoming fifth-year medical students to teach them how to communicate more effectively when breaking bad news to patients and families. This workshop was given to all fifth-year University of Botswana medical students graduating in 2015 during their pediatric clinical rotation. The graduating class from 2015, which had participated in this workshop over the previous academic year, completed an OSCE examination as part of their final examination including a standardized breaking bad news scenario. The OSCE results from

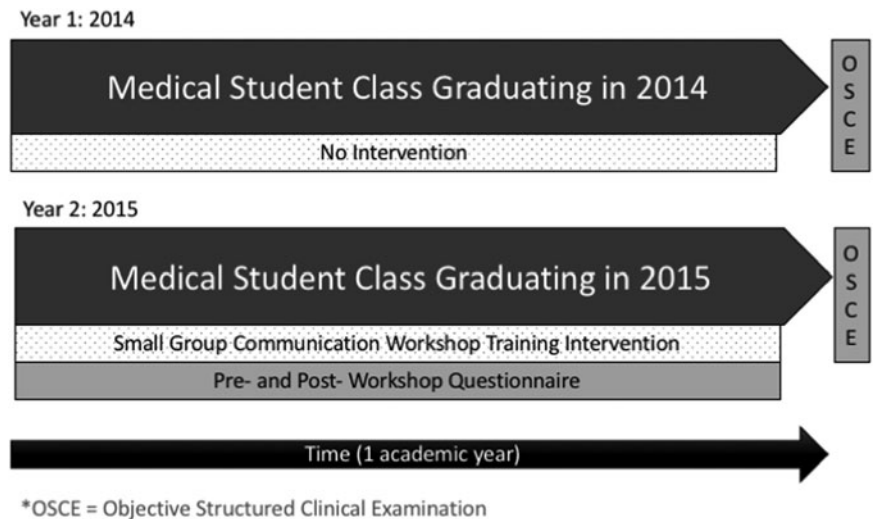


Fig. 1. Timeline of communication workshop training intervention and evaluation assessment points for University of Botswana medical students.

the students completing the communication workshop intervention in 2015 were compared with the 2014 graduates who did not have the intervention.

Workshop design

The workshop was 3 hours in duration and conducted in groups of 6–10 medical students. The workshop was led by Dr. Kate Westmoreland, a general pediatrician with an interest in palliative care, and Rev. Erik Isaksson, a volunteer hospital chaplain with extensive hospice experience. The workshop was conducted in the English language because this is a national language of Botswana; all medical school classes, lectures, and clinical hospital teaching rounds are held in English. Role playing was practiced in either English or Setswana, based on student preference.

The curriculum covered in this workshop included the following.

1. A didactic lecture covering an overview of communication basics with pediatric patients and families, child understanding of death throughout their development, overview of communication and caring for patients at the end of life, introduction of the validated SPIKES protocol for delivering bad news, HIV disclosure, and caring for yourself as the provider.
2. A laminated pocket card outlining the SPIKES protocol was given to each student to serve as a clinical reference.
3. One supervised role-playing case in front of the class was conducted, which was interrupted with real-time guided instructor feedback.
4. Role-playing case practice sessions in groups of two students using clinical cases (Figure 2). One student played the role of the doctor and the other played the role of the patient. Each pair practiced two cases so that each student had the chance to play each role. Instructors provided immediate feedback.
5. An open forum discussion was then held to discuss the role-playing cases. A specific emphasis on cultural beliefs surrounding breaking bad news in the Botswana setting and challenges of explaining medical diagnoses in Setswana were discussed. Discussion of real clinical case experiences of breaking bad news from the ward rotations was strongly encouraged.

Data collection

Pre- and postworkshop questionnaire

Perception of the workshop, skills, and confidence were evaluated using a pre- and postworkshop questionnaire adapted from published work related to teaching the SPIKES protocol to providers in a breaking bad news symposium (Baile et al., 2000). The preworkshop questionnaire assessed the medical student's previous experience and approach to breaking bad news using multiple-choice questions and his or her perceived ability to break bad news using a 5-point Likert scale. The postworkshop questionnaire used a 5-point Likert scale to determine the medical student's perceived skill and confidence to deliver bad news and perceived overall workshop effectiveness. A free-text open-ended question at the end of the survey was used to obtain comments and feedback about the workshop.

OSCE examination

The breaking bad news station of the medical student OSCE examination consisted of a 10-minute standardized scenario in which the medical student had to inform a standardized actress who was acting as a mother that her child had died. The student was directly observed by a faculty evaluator and given a score of 0–5 on five different components of the scenario: introduction, establishing mother's knowledge base, breaking the bad news, comforting the mother's emotions and providing support, and general overall performance. The total maximum score a student could receive was 25. The 2014 and 2015 graduating classes completed similar OSCE clinical cases for breaking bad news with the same faculty evaluator and the same standardized patient. The evaluator was a part-time faculty member of the University of Botswana and therefore was aware that a training workshop was implemented in 2015.

Analysis

Pre- and postworkshop questionnaire

Medical students' baseline exposure to breaking bad news, education or training they had received previously in medical school, and perceived ability and approach to breaking bad news were

CASE ONE:

Doctor: You are on call working in the Newborn Neonatal Unit (NNU). It is 10pm and you are caring for Lebo, who is a 4 day old male who has been diagnosed with prematurity born at 27 weeks and is now having very severe respiratory distress (CO₂ very high on blood gas) and also a new fever. Antibiotics have been started, oxygen given, but given the birth weight of 800 grams, we are unfortunately not able to intubate this premature baby. It seems as if the baby only has a few hours to live. You have never met this mother/father before because you are on call, and they are not on your team. Please counsel her/him on the baby's condition.

Parent: You are aware that your baby is very premature, has under-developed lungs, and might not make it, but you are hopeful because Lebo has been doing well so far.

CASE TWO:

Doctor: Mpho is a 12 year old patient who presented to pediatric medical ward 3 days ago after having pain in his leg for 4 weeks and unable to walk for 1 week. He has a large mass (size of grapefruit) on his left leg. A biopsy was done, and he has osteosarcoma. He is scheduled for surgery tomorrow where we will do a below the knee amputation. After recovery from surgery, he will then start chemotherapy, which he will get twice per month for 8 cycles total where he will spend 3 days in the hospital each time. He has a less than 50% chance of surviving. You have already told his parents, but they have asked you to help them tell Mpho.

Patient: You know that you are sick because you are in the hospital, but no one is telling you anything. You see the large mass on your leg but do not know what is causing it. The doctors talked to your mother this morning, and she seemed upset so you are worried this could be something bad. You have heard the word cancer but do not know what cancer is or what it means.

Fig. 2. Example of role-playing cases used in the training workshop teaching medical students how to break bad news and communicate more effectively.

descriptively reported using percentage, mean (M), and standard deviation (SD)

OSCE examination

The M and SD of the raw OSCE scores for the breaking bad news station were described. Skills acquisition from the workshop was measured by comparing OSCE examination scores between the 32 students of the 2014 graduating class (baseline, no formal breaking bad news training) to the 42 students of the 2015 graduating class (completed breaking bad news workshop during the previous year) of medical students to evaluate if there was an improvement in breaking bad news competency. An unpaired *t* test was used to determine statistical significance. A sample size of 42 medical students in the 2015 class provided us 80% power to detect a difference of ± 2.2 in mean OSCE examination scores between the 2014 and 2015 graduating classes, assuming an SD of 3.3 and alpha level of 0.05.

Institutional review board review

The protocol was reviewed by the institutional review boards of the University of Botswana, Botswana Ministry of Health, and the University of Pennsylvania and was given exempt status by all boards because the research was for educational purposes conducted in an educational setting. Participation in completing the pre- and post-workshop questionnaires was voluntary and deidentified.

Results

Forty-two medical students were in the 2015 graduating class; 83% (35/42) attended the workshop and completed the pre- and post-training survey. The seven students who did not complete the questionnaire were either late to attending the workshop because of clinical duties and therefore were not there when the preworkshop questionnaire was administered or they voluntarily chose not to participate in the questionnaire portion of the workshop.

Preworkshop baseline questionnaire

Medical students reported exposure to delivering bad news on average 6.9 (*SD* = 13.7) times monthly per student, and 71% (25/35) had delivered bad news themselves to a family without supervision. The medical students reported having one communication lecture during their second year of medical school, but otherwise they learned by observation during their clinical rotations. In the preworkshop questionnaire, 34% (12/35) of medical students reported using a specific strategy to deliver bad news, 43% (15/35) were using several techniques or tactics but without an overall plan, and 23% (8/35) stated that they had no method at all to deliver bad news to patients. The baseline self-perceived skill and confidence preworkshop revealed that 23% (8/35) of medical students reported that they felt "good" or "very good" with regard to their ability to break bad news to patients and families (Figure 3).

Postworkshop questionnaire

The medical students' self-perceived skill and confidence increased after the workshop, with 86% (30/35) reporting that they felt "good" or "very good" with regard to their ability to break bad news to patients and families (Figure 3). Feedback after the workshop demonstrated that 100% of participants found the SPIKES approach "helpful" or "very helpful" and planned to use it in clinical practice. In addition, 100% of participants found role-playing "helpful" or "very helpful." The sessions overall were received enthusiastically and 100% of attendees requested more sessions like this to improve their communication skills. A common suggestion in the free-text comments was to incorporate a video to demonstrate both a good example and a bad example of a doctor delivering bad news to a patient.

Small group open forum discussion

The open forum discussion at the end of the workshop often led to emotional discussions about challenging and distressing cases that the medical students had encountered during their clinical

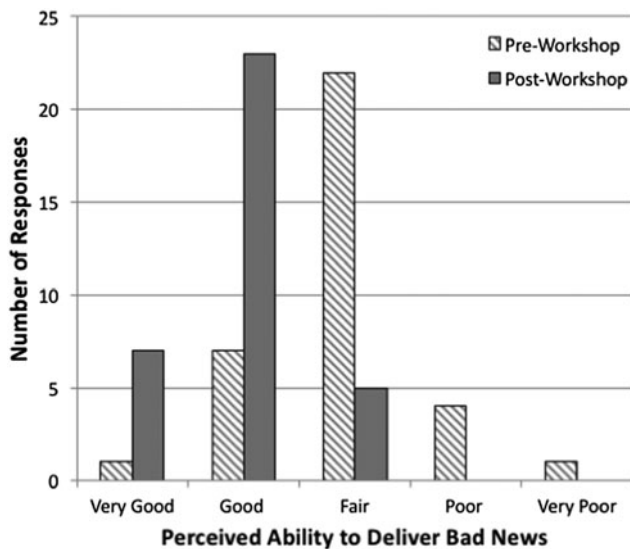


Fig. 3. Medical students' perceived ability to deliver bad news to patients immediately before and after a communication workshop with peer role playing.

experiences. These experiences ranged from distressing observations of poor communication with patients and families, emotional and spiritual difficulties in coping with the death of patients, and personal experiences and difficulties faced when having difficult discussions with families. Additionally, Botswana-specific cultural norms surrounding breaking bad news and beliefs around death and dying were discussed. The students felt that the SPIKES protocol was culturally acceptable and planned to use it in clinical practice. Students also brainstormed about the challenges and solutions of translating medical discussions into their local Setswana language, which often does not have words for many common medical terms.

OSCE examination

Figure 4 shows the competency of the final examination scores for delivering bad news increased from a mean score of 14/25 (56%, $SD = 3.3$) baseline in 2014 before the workshop was implemented to a mean score of 18/25 (72%, $SD = 3.6$) in 2015 after the workshop was implemented. The difference in scores was statistically significant ($p = 0.0002$).

Discussion

To our knowledge, this is the first published report describing a peer role-playing workshop for teaching communication skills to medical students in sub-Saharan Africa for delivering bad news to patients and their families. The workshop was effective in increasing medical student skill and confidence in delivering bad news and had an immediate effect in improving the medical students' self-perceived preparedness and skill for delivering bad news. Competency in breaking bad news was also improved in the cohort of students that had completed the communication training compared with an earlier cohort of students that did not have the training, as shown by the end-of-the-year OSCE examination results. The workshop was well received with enthusiastic participation, and all of the students requested more workshops such as this to be integrated into the curriculum to facilitate continued development of their communication skills.

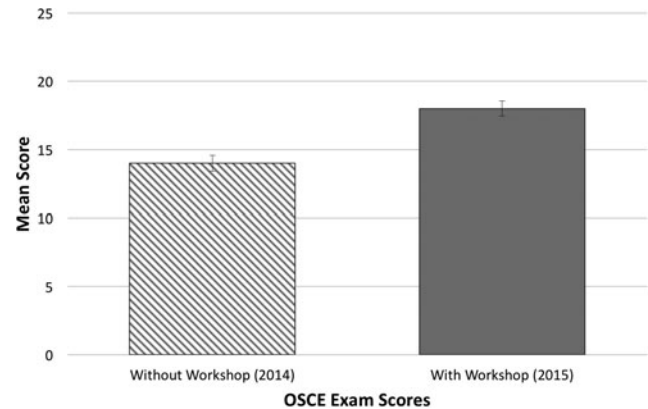


Fig. 4. OSCE examination score evaluating medical students' ability to deliver bad news before and after implementing a communication workshop at the University of Botswana. OSCE, objective structured clinical examination.

Our results were similar to what has been reported in other studies. We showed that 23% of the University of Botswana medical students had no standardized method to deliver bad news before the workshop, and other studies found similar rates at 23%–52% (Baile et al., 2000; Pereira et al., 2017). The University of Botswana medical students all reported attending a communication lecture during their second year of training, which was higher than other studies that showed only 44%–62% having received prior training on breaking bad news (Baile et al., 2000; Jameel et al., 2012; Pereira et al., 2017). The medical students had low levels of perceived competence in their ability to break bad news before the workshop, with only 23% of those participating rating their skills “good” or “very good,” which was similar to other studies that report 15%–53% (Baile et al., 2000; Jameel et al., 2012; Pereira et al., 2017). The University of Botswana students perceived competence in their ability to break bad news increased from 23% to 85% after the workshop, which was similar to that in a Pakistan study that showed an increase from 15% to 64% (Jameel et al., 2012). One hundred percent of the University of Botswana students reported that they plan to incorporate the SPIKES protocol into their clinical practice, which was similar to other studies that reported 95% to 97% (Baile et al., 2000; Jameel et al., 2012; Pereira et al., 2017).

The open forum discussion at the end of the workshop often led to a very emotional discussion about challenging and distressing cases that the medical students have encountered during their clinical experience. This highlights that there is a great unmet need to provide medical students with a safe and protected space with a skilled facilitator, such as a support group, when undergoing the rigorous training of becoming a doctor in an LMIC. Additionally, medical students training in LMIC often have more clinical pressures given the lack of resources. This was exemplified by our data showing that, shockingly, 71% of the University of Botswana medical students had delivered bad news themselves to a family without supervision. Other research has found that breaking bad news elicits a complex emotional response in medical students; therefore, the authors encourage educators to actively discuss emotions and teach their students to accept their emotional experience and find coping strategies so doctors can remain empathetic and emotionally available to their patients (Toivonen et al., 2017).

The majority of sub-Saharan Africa has a critical shortage of healthcare providers despite its high burden of disease. As a

response, sub-Saharan African governments with the assistance of the Medical Education Partnership Initiative have opened new medical schools throughout the region. The University of Botswana opened the first medical school in Botswana in 2009 and graduated the first class of doctors in 2014. As new medical schools open across Africa, it is essential that we train doctors to communicate effectively, including the difficult task of delivering bad news to their patients and families. This will not only improve the patient experience, but also improve doctor job satisfaction and prevent burnout (Ishak et al., 2009; Shanafelt et al., 2002), which will ultimately improve the retention of junior doctors in their home country to practice medicine.

This study has the following limitations. It was conducted in a single center with a single medical school class of a relatively small sample size of 42 medical students. We did not collect baseline breaking bad news preparedness and competency perceptions of the 2014 medical school class so that it could be compared with the 2015 class. Likewise, we do not have a baseline preintervention OSCE examination score for the 2015 graduating class; therefore, there could have been a difference in prior teaching or previous exposure to breaking bad news encounters. This was a nonblinded, noncontrolled study where the OSCE evaluator could have been subject to reporting bias; however, the demonstration of both immediate effectiveness of the workshop by increasing perceived preparation and competence in the postworkshop questionnaire and the longer term competence for breaking bad news as demonstrated by improved OSCE final examination scores complement each other. Most published literature on teaching medical providers how to deliver bad news effectively evaluates immediate posttest effectiveness of the education method, but few have attempted to demonstrate long-term effectiveness of their training intervention such as we have attempted to do here with the OSCE (Alelwani & Ahmed, 2014; Rosenbaum et al., 2004). This workshop was limited to a single 3-hour intervention, but we hope in the future to expand this workshop by offering it multiple times throughout the medical school curriculum. Furthermore, the SPIKES protocol was not qualitatively assessed and validated to ensure it fits within the cultural norms and beliefs of Botswana before this workshop, but throughout the discussion a strong emphasis was placed on cultural norms and challenges of medical communication in Setswana. Future directions include qualitative validation of the SPIKES protocol within the cultural context of sub-Saharan Africa, including the patient perspective. We are also working to incorporate video examples of both effective and ineffective communication scenarios with patients, including both English- and Setswana-language examples.

We were able to set up this workshop without any cost because the pediatrician and hospital chaplain who led the workshop volunteered their time, and we used a free lecture hall on the hospital campus. A similar setup would be replicable anywhere. This workshop proved to be sustainable because the leaders have now trained other colleagues to lead the workshop in their absence. Standardized role-playing communication workshops integrated into medical school curricula could be a low-cost, effective, and easily implementable strategy to improve communication skills of doctors in LMICs.

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