

# Merging Drama with Medical Education: Simulation in Learning Breaking Bad News Pre- and Post-Study

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## Abstract

**Objective:** Using simulation in medical education was introduced in the 17<sup>th</sup> century, applying different techniques. The introduction of using simulated patients (SP) was also of great importance in both learning and evaluation processes. **Aims:** This current study aims at assessing medical students' perception about the use of well-trained drama students from the school of Arts in simulated session of breaking bad news encounter. **Study Design:** This is a pre- and post-test study. **Methods:** 112 students were asked to fill a pre-validated questionnaire, who trained from January 2017 till the end of July 2017 pre- and post-exposure to simulated clinical encounter, where one well trained senior drama student played the role of patient, one student played the doctor who would break the bad news (BBN), debriefing before the encounter, and discussion after took place. Another validated questionnaire was distributed after the encounter, to assess the students' experience. Statistical analysis was done using SPSS version 20. **Results:** Scores of all questions showed statistically significant improvement after the simulation session (p-value < 0.05). Also, students rated themselves to be more confident to break bad news after the session; they felt that the debriefing and discussions were of great value and agreed that they needed more simulation sessions in their clinical training. 95% of the students found the debriefing constructive and reflective on their learning experience, 84% found it helpful in applying the knowledge they received, and in development of their decision-making ability. **Conclusion:** Simulation encounter, using drama students who are well-trained in

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human grief reaction, making BBN learning more positive and effective, merging two faculties improved the learning experience of both medical and Drama students.

### **Keywords**

Simulation, Drama Students, Breaking Bad News, Medical Education

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## **1. Introduction**

The educational legacy of simulation-based medical education (SBME) originated in antiquity, where models of human patients were made from clay and stone, and used to demonstrate clinical features of diseases [1]. In the 17th century in France, Gregoire father and son, developed birthing manikin made of human pelvis and a dead baby; the manikin was named “The Phantom” [2]. The use of The Phantom to teach delivery resulted in a reduction of maternal and infant mortality rates [3]. Since 1960, simulators are increasingly used for the training of doctors, nurses and laymen in resuscitation techniques [4]. Simulation is a technique, which replaces and amplifies real experiences. It can evoke and replicate substantial aspects of the real world in a fully interactive manner [5]. The integration of SBME with traditional medical education can be a valuable tool for better clinical practice. It provides a safe, controlled environment in which problem-based learning is developed and competencies are practiced in high-standards [3].

SBME is supported by cognitive psychology research, which emphasizes that the recall of information and its application are best when it is taught and rehearsed in environments similar to one’s workplace [4]. In fact, SBME range from high fidelity simulators, such as advanced cardiac life support simulators, passing through video-laparoscopic and endoscopic simulator, low fidelity trauma simulators, software for problem-based simulation, screen-based computer simulation software for physiology learning, to low technology simulation such as simple surgical techniques, and much more. All those simulation-based experiences might need some manikins or equipment. However, modern simulation is not only based on lifelike mannequins. The use of actors to portray patient encounters was first reported by Howard Barrows in 1964 [6]. The use of simulated patients (SP) became a well-known part of the standardization of the objective structured clinical examination (OSCE) [7], and also an important part of everyday student training especially in the pre-clinical years.

The use of SP is considered as a valid and reliable method to teach sophisticated topics to a variety of learners [8]; several studies have demonstrated improved scores in interpersonal skills and knowledge when compared with traditional teaching strategies using didactic methods [9] [10]. Indeed, the use of SP and role play has proved to be effective in communication skills training [11]. One of the most difficult tasks, which need very good communication skills

training, is breaking bad news. It is often a difficult and unpleasant experience for both the doctor and recipients [12]. Bad news is defined as, any information, which produces a negative alteration in a person's expectations about their present and future [1]; thus, it is not uncommon for practicing doctors in different specialties to break bad news to patients or families.

During the family medicine training of our students, in the school of medicine, the University of Jordan; we do focus on students' learning of proper consultation and communication skills, for them to understand the dynamics of the consultation, and how to approach different and difficult patients. One of the important tasks, which we started to prepare our students for, is how to break bad news properly; so in our current study we aimed at exploring the effect of using qualified drama students, with good training on human grief reaction as SP, on students' performance and confidence about breaking bad news in their future careers.

## 2. Methodology

This is a pre- and post-test study conducted at the School of Medicine, University of Jordan, Amman, Jordan during the family medicine rotation. The School of Medicine at the University of Jordan is the oldest medical school in the Hashemite Kingdom of Jordan. Students in their 5<sup>th</sup> year rotation spend 2 weeks at the family medicine department and clinics; each group comprises 12 to 14 students. During these two weeks, interactive seminars about different topics such as consultation, consultation skills, communication skills, diagnostic process, difficult patients, management plane and breaking bad news (BBN) take place.

In January 2017, we started this new project in collaboration with the School of Arts at the University of Jordan, where drama students were picked up by their instructors, and trained in human grief reaction. Medical students learned the theoretical part of BBN at the end of the first week of the rotation; the SP role play with one of the trained drama students took place early in the next week.

Before each session a debriefing about the case took place. One student at a time was given the chance to play the doctor who had to break the bad news to the simulator; all other students would watch and take notes. After each encounter, all the students, including the one who did the simulation session were asked to give their feedback, starting with things done properly, and reaching the discussion of how we could improve such consultation. The consultation was repeated twice; the second time the drama student was asked to change the reaction he or she gave the first time, to another human grief reaction.

We developed a questionnaire consisting of two parts; the first one had six questions, it was administered to students before and after the simulation session. This part aimed to find out the difference in levels of confidence about skills and knowledge of breaking bad news, before and after the SP encounter. The second part of the questionnaire was administered after the whole training session was completed, and it asked about 21 items regarding the whole learn-

ing experience. Each question was scored using likert scale—a 5 degree scale ranging from strongly disagrees to strongly agree. The questionnaire was developed after thorough literature review; a pilot study for reliability was done on 10 students, who were not included in the analysis, (a Cronbach alpha was 0.67). The questionnaire was also reviewed by three full professors in addition to the researchers before starting the study. Data was collected from all students who did their family medicine training from January 2017 till the end of July 2017. Total 112 students were enrolled in the study; verbal consent was obtained from them before filling up the pre- and post-tests. Ethical approval was obtained from the ethical committee at the University of Jordan, School of Medicine.

All data was entered and analyzed using SPSS version 20 (SPSS, Inc., USA). Categorical variables were expressed as frequencies and percentages, and continuous variables were presented as mean and standard deviation (SD). Checking for normality was carried out using Kolmogorov-Smirnov test, histograms and Q-Q plots. The Wilcoxon signed-rank test was used to ascertain whether the simulation technique was effective in improving students' scores. For all statistical analysis, a p-value of less than 0.05 was considered statistically significant. All tests were two-tailed.

### 3. Results

As shown in **Table 1**, all calculated p-values were statistically significant; students felt more confident about doing consultation with patients after the session and also reported improvement in their communication skills after the encounter. The mean score for the basic knowledge about breaking bad news rose from 2.63 to 3.2 out of 4; also the confidence level score rose dramatically from 1.90 to 2.65 out of 4. The students' mean score for being familiar with the concept of simulation-based learning also rose from 2.27 to 3.33 out of 4.

When students were asked to rank their experience after the session between strongly disagree to strongly agree on 21 questions, their responses were as shown in **Table 2**. More than 92% agreed that the facilitator provided constructive criticism during the debriefing session; also more than 95% said that the facilitator summarized the important issues. 95% said they had the opportunity to reflect

**Table 1.** The mean score for each item in the pre and posttest, with the calculated p-value.

Item number	Question asked to student (response's from strongly disagree = 0, disagree = 1, neutral = 2, agree = 3, and strongly agree = 4)	Pretest mean score (out of 4)	Posttest mean score (out of 4)	p-value
1	I Feel confident enough doing consultations with patients independently	2.59	2.90	$p \leq 0.001$
2	I feel my communication skills with patients are optimal for my level	2.71	2.91	$p = 0.02$
3	I feel happy with my overall performance in doing consultations	2.46	2.77	$p \leq 0.001$
4	I know the basic skills to break bad news	2.63	3.20	$p \leq 0.001$
5	I feel confident to break bad news	1.90	2.65	$p \leq 0.001$
6	I am familiar with the concept of simulation based learning	2.27	3.33	$p \leq 0.001$

**Table 2.** Students' overall responses after the end of the session.

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
1—The facilitator provided constructive criticism during the debriefing			8 (7.4%)	46 (42.6%)	54 (50%)	108
2—The facilitator summarized important issues during the debriefing			6 (5.5%)	39 (35.8%)	64 (58.7%)	109
3—I had the opportunity to reflect on and discuss the performance during the debriefing	1 (0.9%)		4 (3.7%)	43 (39.4%)	61 (56%)	109
4—The debriefing provided an opportunity to ask questions	1 (0.9%)	1 (0.9%)	8 (7.3%)	40 (36.7%)	59 (54.2%)	109
5—The facilitator provided feedback that helped me to develop my clinical reasoning skills	1 (0.9%)		6 (5.5%)	44 (40.4%)	58 (53.2%)	109
6—Reflecting on and discussing the simulation enhanced my learning			5 (4.7%)	42 (39.3%)	60 (56%)	107
7—The facilitator's questions helped me to learn		3 (2.8%)	11 (10.1%)	48 (44%)	47 (43.1%)	109
8—I received feedback during the debriefing that helped me to learn		2 (1.9%)	11 (10.2%)	44 (40.7%)	51 (47.2%)	108
9—The facilitator made me feel comfortable and at ease during the debriefing		1 (0.9%)	15 (13.8%)	51 (46.8%)	42 (38.5%)	109
10—The simulation developed my clinical reasoning skills		2 (1.8%)	15 (13.9%)	58 (53.7%)	33 (30.6%)	108
11—The simulation developed my clinical decision making ability		6 (5.6%)	24 (22.2%)	53 (49.1%)	25 (23.1%)	108
12—The simulation enabled me to demonstrate my clinical reasoning skills		5 (4.6%)	32 (29.6%)	50 (46.3%)	21 (19.5%)	108
13—This was a valuable learning experience			5 (4.6%)	33 (30.3%)	71 (65.1%)	109
14—The simulation tested my clinical ability	1 (0.9%)	8 (7.4%)	30 (27.8%)	35 (32.4%)	34 (31.5%)	108
15—The simulation helped me to apply what I learned from my theory knowledge			17 (15.9%)	53 (49.5%)	37 (34.6%)	107
16—Patient simulators are a useful addition to learning with real patients			7 (6.4%)	36 (33.0%)	66 (60.6%)	109
17—I would like more training with simulators			7 (6.4%)	28 (25.7%)	74 (67.9%)	109
18—I am familiar with the concept of simulation based learning		1 (0.9%)	9 (8.3%)	61 (56.5%)	37 (34.3%)	108
19—Simulation based learning made the subject more interesting			5 (4.6%)	37 (33.9%)	67 (61.5%)	109
20—Simulation based learning provided a semi-realistic experience	2 (1.8%)		9 (8.3%)	52 (47.7%)	46 (42.2%)	109
21—I found it difficult to treat the simulator as a real patient	4 (3.7%)	28 (25.6%)	32 (29.4%)	38 (34.9%)	7 (6.4%)	109

and discuss the performance during the debriefing; also more than 90% felt that the facilitator's feedback was helpful in developing clinical reasoning skills, and that discussions on simulation session enhanced their learning.

Another 84% of the students found the simulation session helpful in the development of their decision-making ability, and clinical reasoning skills. More than 95% agreed that the simulation was a valuable learning experience. On the other hand, more than one-third of the students were either neutral or disagreed

that the simulation tested their clinical ability.

84% students agreed that the simulation session helped them to apply what they learned in the theoretical session; another 93.6% agreed it was a useful addition to learning with real patients. Another 93.6% stated they would like to have more simulation-based training. More than 90% considered themselves as familiar with the concept of SBME. 95% students also agreed that simulation made the subject more interesting. Another 90% found the simulation experience semi-realistic; while 41% found it difficult to treat the simulator as a real patient.

#### 4. Discussion

Our current study examined the effect of one-to-one simulated case of breaking bad news—where patients were well-trained drama students—on medical students' learning experience (including applying basic knowledge and skills, being an enjoyable experience and semi-realistic), their confidence, and clinical skills (including developing and demonstrating: reasoning, decision-making, and communication skills). Overall the simulation experience was rated positively in almost all studied items. All of this was achieved with very limited resources. In fact, a quick view on literature will reveal that health care has lagged behind in simulation applications for a number of reasons, including cost, lack of rigorous proof of effect, and resistance to change [12]. Our current study proved that cost and limited resources should not be a limiting step in taking learning experience to better levels, including the critical part of communication skills learning.

Poor communication compromises a physician's ability to assess and manage pain and other physical symptoms, as well as psychological issues including anxiety, depression and adjustment to illness. The quality of communication also influences patient satisfaction, compliance with medications, and clinical outcome [13]. SBME represents very good learning experience, which enhances and amplifies the importance of good communication between doctor and patient; in fact, experiential learning activities can increase students' interest and involvement, helping them connect abstract ideas with concrete knowledge [14]. Additionally, reflecting on one's own clinical or professional practice is a crucial step in the experiential learning process [15]. It helps learners develop and integrate insights from direct experience into later action [16].

Some of the important goals and processes of debriefing or after-action review are to help participants understand, analyze, and synthesize what they thought, felt, and did during the simulation to improve future performance in similar situations [16].

In the historical review, feedback is the most important and frequently cited variable about the use of SBME to promote effective learning [17]. In our study we used formative rather than summative feedback, which is considered to be better in terms of improving trainee clinical performance rather than presenting summative judgments (e.g. pass, fail) [18]. Students' responses towered that the

debriefing and feedback session was extremely positive; they enjoyed the learning experience and the thought that it added much to their knowledge and skills. In fact, SBME with potent feedback has a clear impact on trainee clinical behavior and achievement was proved by many researchers to dramatically improve with the use of potent feedback; as one study, which was conducted by an Australian research group that conducted a randomized trial where medical students and nursing staff received cricoid pressure simulator training with or without force feedback, research outcomes showed that students' performance was better in those who received feedback [19].

Use of standardized patients was investigated in many previous researches [20] [21] [22], and proved to be an effective way in enhancing learning experience of medical students and residents as well as fellows [5] [13] [23]. On the other hand, the use of professional actors during the role play exercises enhanced the realism and pushed the students out of their own "comfort zones" in ways, which may more closely approximate real-life clinical situations. Skye *et al.* stated that interactive theater can be a potentially powerful tool to teach breaking bad news during medical school [24]. Using drama students as SP was a real add-on step to the use of drama and interactive theater experiment conducted by Skey *et al.*, where workshops included dramatized scenarios of critical incidents demonstrating different peoples' experiences concerning the death of actual patient in hospital, live performances were presented to large groups of students followed by small group discussions [6]. We believe that the use of interactive theater greatly adds to students' learning experience about real-life emotions and doctor-patient interaction; however, the use of well-trained drama students and putting medical students under stress concerning breaking bad news, expanded the horizon of the learning activity. Participation in drama can foster empathy by putting students in touch with their feelings, and can provide opportunities for students to develop higher level thinking abilities [7] [25] [26]. In fact for more than 88% students, the SBME provided a semi-realistic experience, which is close to what was found by other researchers [8].

## 5. Conclusion

In conclusion, the use of drama students, or professional actors, with good training in human grief reaction instead of regular standardized patient can amplify and simplify the learning process of communication skills, especially in difficult clinical encounters like breaking bad news, at very low cost. We believe that the integration of the work of the School of Art and the School of Medicine will take the learning experience, of both drama and medical students, to another level. More integration of drama courses with medical courses will have great impact on both medical and drama programs.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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