

Learning Skills Using Simulated Teaching Materials by Students and Interns: Teachers', Students' and Interns' Views

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Abstract

This is a cross sectional study was conducted to find out views of teachers, students and interns on learning some common skills using simulated teaching materials by students and interns at undergraduate education in Bangladesh. The study was conducted from 1st January 2021 to 31st December 2021. One self-administered structured questionnaire was used to collect data from conveniently selected 100 medical teachers, 150 undergraduate students and 150 intern doctors by online Google format or in some cases face to face. It was found that out of five point Likert scales (ranging 1 to 5) the mean scores of the views of the respondents were more than 3.5 regarding the different common skills that should be learned by the students and interns using simulated materials before performing on real patient. It was also found that the teachers, students and interns statistically differ highly in their opinions regarding most of the issues. It can be concluded that some important skills can be learn by students and interns at the undergraduate medical course using simulated teaching materials before performing on real patient.

Key words: *Simulation-based medical education, Undergraduate education, Medical education, Clinical training*

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Introduction

Referencing Datta R et al simulation was defined as the artificial representation of a complex real-world process with sufficient fidelity to achieve a particular goal, such as in training or performance testing. The aim is to facilitate learning through immersed

into the clinical scenario, reflection, feedback, and practice minus the risks inherent in a similar real-life experience.¹

Beal et al. suggested that simulation-based medical education is more effective for teaching critical care medicine to students than other teaching methods and they found no evidence that simulation was more

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effective than other teaching modalities in preparing for knowledge-based assessments. They also mentioned that simulation-based teaching is a resource- and faculty-intensive education technique, which has significant cost implications².

Salam et al suggested that simulation is an important instructional technique that allows trainees to practice skills in a secure learning environment without exposing patients to avoidable damage, hence improving patient safety and lowering the incidence of adverse events. There they tried to make understand- there will be no real thing, everything will be practiced or used as to practice different medical tasks or skills to get the mastery level or increase their competency in that special task or field³.

Azzam et al. mentioned that in last fifteen years, simulation-based medical education (SBME) has grown more common in undergraduate medical education. The necessity for updated medical training models, instruction utilizing standardized clinical scenarios, patient safety considerations, and studies supporting the educational benefits of simulation have all contributed to this rise⁴.

SBME has not yet been established in Bangladesh, but with advancement of medical education, raising demand for competencies of medical doctors, unavailability of some patients and patient safety issues the training of medical students and interns on some common skills using simulated teaching materials by at undergraduate level in Bangladesh.

Methods and Materials

The study was conducted for one year within January 2021 to December 2021. One anonymous self-administered upon structured questionnaire was administered upon 100 teachers, 150 undergraduate students and 150 intern doctors. All the respondents were selected conveniently, most of them participated by online Google format and few participated face to face and participant selected without considering religion. Govt. & non Govt. selected anonymously and all teachers, students of all phases selected on their permission. The data were computed, processed and analyzed using SPSS software program version 19.

Result

Table 1: Distribution of the respondents by their agreements regarding the common skills that should be learned using some simulated materials by the trainees during their studentship and internship periods before performing on real patients (n=400)

Common skills	Frequency (%) of level of agreement with corresponding score					Mean(\pm SD)
	SDA = 1	DA = 2	NANDA = 3	A = 4	SA = 5	
Performing CPR on dolls or manikins	-	7(1.8)	12(3)	131(32.8)	250(62.5)	4.56(0.642)
Performing minor surgical procedures like abscess draining on artificial tissue	-	23(5.8)	19(4.8)	129(32.7)	224(56.7)	4.40(0.829)
Performing P/R examination on dolls or manikins	-	8(2)	30(7.5)	169(42.3)	193(48.3)	4.37(0.710)
Performing surgical toileting on dolls or manikin	-	22(5.5)	33(8.3)	151(37.8)	194(48.5)	4.29(0.839)
Performing stomach wash on dolls or manikins	-	7(1.8)	17(4.3)	246(62.6)	123(31.3)	4.23(0.611)
Performing P/V examination on dolls or manikins	-	4(1.0)	39(9.8)	241(60.3)	116(29)	4.17(0.631)
Use of 'umbo bag' & 'mouth gag' on dolls or manikins	-	9(2.3)	48(12)	227(56.8)	116(29)	4.12(0.697)
Performing dressing on dolls or manikins	-	9(2.3)	48(12)	264(66)	79(19.8)	4.03(0.638)
Introduction of N/G tube on dolls or manikins	-	11(2.8)	115(28.8)	158(39.5)	116(29)	3.95(0.829)
Performing I V cannula on tube like materials	-	30(7.5)	111(27.8)	141(35.3)	118(29.5)	3.87(0.926)
Performing stuttering on sponge like materials	3(0.8)	26(6.5)	169(42.3)	95(23.8)	107(26.8)	3.69(0.962)

Table 1 shows that out of 5 point Likert scales the mean scores of the respondents' agreements regarding the common skills that should be learned using some simulated materials by the trainees during

their studentship and internship periods before performing on real patients were more than 4 point in most of the cases and none was below 3.5 point.

Table 2: Comparing the means of the opinions of teachers, students and interns by their agreements regarding the common skills that should be learned using some simulated materials by the trainees during their studentship and internship periods before performing on real patients

Common skills	Mean(\pm SD) of level of agreement			P values
	Teachers (n=100)	Students (n=150)	Interns (n=150)	
Performing CPR on dolls or manikins	4.59(0.494)	4.37(0.806)	4.73(0.473)	0.000**
Performing minor surgical procedures like abscess draining on artificial tissue	3.98(1.110)	4.32(0.716)	4.76(0.501)	0.000**
Performing P/R examination on dolls or manikins	4.29(0.604)	4.21(0.797)	4.58(0.605)	0.000*
Performing catheterization on dolls or manikins	4.48(0.502)	4.23(0.908)	4.25(0.491)	0.000**
Performing surgical toileting on dolls or manikins	4.03(1.058)	4.03(0.759)	4.73(0.501)	0.000**
Performing normal delivery on dolls or manikins	4.6 (0.488)	4.01(0.851)	4.22(0.416)	0.000**
Performing stomach wash on dolls or manikins	4.45(0.50)	4.24(0.757)	4.09(0.454)	0.000**
Performing P/V examination on dolls or manikins	4.29(0.640)	4.33(0.662)	3.93(0.487)	0.000**
Use of ‘umbo bag’ & ‘mouth gag’ on dolls or manikins	4.37(0.661)	3.99(0.827)	4.10(0.697)	0.000**
Performing first aid on dolls or manikins	4.34(0.728)	4.11(1.031)	3.93(0.403)	0.000**
Performing dressing on dolls or manikins	4.16(0.775)	4.00(0.811)	3.98(0.140)	0.073**
Introduction of N/G tube on dolls or manikins	4.25(0.435)	4.05(0.877)	3.65(0.883)	0.000**
Performing I V cannula on tube like materials	3.95(1.095)	4.14(0.852)	3.54(0.765)	0.000**
Performing splinting on dolls or manikins	4.47(0.502)	3.77(0.845)	3.44(0.773)	0.000**
Performing suturing on sponge like materials	3.89(1.081)	4.11(1.037)	3.15(0.355)	0.000**

*Regular ANOVA were done

**Welch ANOVA were done

Table 2 shows that out of 5 point Likert scales the mean scores of the respondents’ agreements regarding comparing the means of the opinions of teachers, students and interns regarding the common skills that should be learned using

some simulated materials by the trainees during their studentship and internship periods before performing on real patients found statistically highly significant differences in all cases except

one (Performing dressing on dolls or manikins) which P value is 0.073 which is significant.

Discussion

It was found that out of 5 point Likert scales the mean scores of the respondents' agreement regarding the common skills that should be learned using some simulated materials by the trainees during their studentship and internship periods before performing on real patients were more than 4 point in majority of the cases and none was below 3.5 point (Table 1). This findings indicates that the respondents were highly in favor of the listed training using simulated materials.

Okuda et al. discovered that the study's participants believed they were not receiving adequate instruction in patient intake, physical examination, diagnosis, and management. Patients' concerns about students and residents practicing on them led to a shift in clinical training away from bedside teaching of medical students toward patient safety and high-quality medical treatment. In the end, this study suggested employing simulation to address administrative issues and reduce learning gaps.⁵

According to Pai the simulation-based education (SBE) is now widely used to promote the growth of healthcare

professionals in various regions of the world. The value of simulation is that it allows for skill practice and teamwork without endangering patients⁶.

It was also found that the teachers, students and intern doctors statistically highly differ in their agreement regarding the common skills that should be learned using some simulated materials by the trainees during their studentship and internship periods before performing on real patients (Table 2).

Recommendation:

It was found that the medical teachers, undergraduate medical students and interns interested for training the medical students and interns using simulators at undergraduate level before perming on real patients. Hence we should take necessary steps to train our medical students and interns using simulators at undergraduate level before perming on real patients.

Conclusions

It was found that participants are highly motivated for learning common skills by students and intern doctors using simulators. They are highly motivated for using some common simulation materials for learning medical skills. They are highly

agreed with the benefits of using this materials for learning. They are highly motivated for using the materials for simulation in all academic phase of the MBBS course and internship. They are highly motivated for using the materials in all subjects of the MBBS course. They are highly agreed with the problems that may arise during implementing materials & they are highly agreed with the suggestions for overcoming the problems.

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