STUDENTS' SATISFACTION REGARDING SIMULATION AT MEDICAL COLLEGE, TAIF UNIVERSITY, SAUDI ARABIA

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ABSTRACT

Purpose: For new and emerging medical schools, using standardize patientas a method of instruction and assessment can be a challenge. This study evaluatessatisfaction of medical students regarding using standardize patient as a method of instruction at Family Medicine Module.

Methods: This study useda cross-sectional design, to study the satisfaction of medical students regarding using standardize patient in 2016.The study population and sampling are all 6th year medical students attended family medicine module at Taif University during the academic year 2015-2016. A self-administered Satisfaction with Simulation Experience Scale (SSES) was utilized for data collection.Data compilation and analyses were conducted using Stata 14. Mean and Stander deviation were used; p-value of less than .05 was used to determine significance.

Results: Results showed that Simulation Experience Scale (SSES) has high internal-consistency Reliability, the overall internal-consistency reliability is .95.Moreover, it showed that above average overall mean score for Clinical Reasoning, Clinical Learning, Debrief and Reflection.There is no significant correlation between scores, student Gender and student age.

Conclusion: This paper has demonstrated that using simulation and standardized patient in instruction at Taif medical college is essential for improving student satisfaction. Moreover, it should integrated in to curriculum of all clinical departments.

Keywords: *Standardize Patient, Simulation, Students' Satisfaction.*

Introduction

Methods of teaching and assessment for learning outcomes are the backbone for growing and developing of emerging medical schools. Therefore using simulation and standardize patient (SP) for instruction and assessment at these schools is an important method to teach and evaluate the intended outcomes.

Simulation is a strong instrument for systematic training and giving feedback within controlled and safe environment. (1) Its defined as "an educational technique in which elements of the real world are appropriately integrated to achieve specific goals related to learning or evaluation; simulation is an educational strategy, not a technology". (2)

There are four main types of simulation based medical education; Task Training Simulation, Manikin-based Simulation, Standardized Patient (SP) Simulation, Virtual Reality Simulation. (3)

SP is a valid and reliable method which has been used for more than 4 decade. It is used for evaluate proficiency and competency of both, physicians and medical students. Moreover, it is a potent and best instrument for assessing clinical practice and patient care. (4)

Identifying medical students'satisfaction regarding using SP and its impact for enchasing them for learning and gaining essential knowledge and skills, comparing to traditional ways of teaching and assessment are important.

Studies in the literature have supported that simulation was improved student satisfaction, and they include evidence showing this effect. A prior study conducted at University of

Newcastle in Australia showed thathigh mean satisfaction score for 344 nursing students and simulation sessions was highly appreciated by students. (2)Another study conducted in paramedic students at an Australian universityshowed thathigh mean score for all students and Satisfaction with Simulation Experience Scale (SSES) is valid and reliable instrument. (5)In addition, studies conducted in medical students at the University of Medicine and Pharmacy of TîrguMureşin Romaniahave also shown that simulation training sessions was highlyvalued by students and more than 90 % of them believe that it improve their career development. (6)

Many studies have supported that improve students satisfaction will improve the outcomes. A prior study conducted at University ofBritish Columbiain Canada showed thatimproved students satisfaction supported them to accomplish their objectives, helped them infurther education and future career. (7)Another study conducted atuniversity in the southeastern United Statesshowed thatstudents' satisfactionrelated to risestudent perceived learningand high predictions for academic achievement.(8)

In overall, generalizing simulation training to the Taif medical school and to the other emerging medical schools is essential and vital.

This study evaluates satisfaction of medical students regarding using standardize patient as a method of instruction at Family Medicine Module.

Methods

Organizational Context of Medical School at Taif University. In Saudi Arabia, the graduated high school

students admit in to medical schools after passing the preparatory year (Phase 1) with high scores. Medical collage at Taif University established recently in 2005. It consists of two and half year preclinical (Phase 2) and two and half year clinical (Phase3) with integrated curriculum. Family medicine module is one of phase three subjects with period of 5 weeks for teaching and assessment of basic and important topics of family medicine discipline.

Simulation at Taif Medical School. Using simulation for instruction at Taif Medical school is a new concept. Fortunately, Family and Community Medicine department is the first department who introducedthis concept for instruction at Taif Medical School.Becausethe short period of this module, we have divided the students into four groups (two groups ofmale students and two groups of female students). Each group has eight hours of training about simulation throughout the course. Training includes the basic concept of simulation and Standardized Patients for conductingappropriate clinical encounter.The Contract was signed bythe medical intern and administrative employee at Taif University to be Standardized Patients.Family Medicine staff trained Standardized Patients on different clinical scenarios before commencing the course. Thus, Introducingsimulation for family medicine module at Taif Medical Schoolas a first time is a valuable experience need to evaluate carefully.

Data

Study design. This study used a cross-sectional design, to study the satisfaction of medical students regarding using standardize patient in 2016.

Data collection. It was conducting at medical college, Taif University at Taif city. Taif city is located in Makkah Province at western part of Saudi Arabia at 1700 meter above the see level.

The study population and sampling are all 6th year medical students attended family medicine moduleat Taif University during the academic year 2015-2016.The estimated number of eligible medical students is 72 females and 127 male students.

A self-administeredSatisfaction with Simulation Experience Scale (SSES) was utilized for data collection. Its 18 items scale used for assessing students' satisfaction with simulation. Its assesse 3 different areas; Clinical reasoning (5 items), Clinical learning (4 items), Debrief and reflection (9 items). It is a valid and reliable scale. Overall reliability is 0.776, which, Clinical reasoning, Clinical learning, Debrief and reflection is 0.935, 0.855, and 0.850 respectively. (2) (5)

Analysis. Data compilation and analyses were conducted using Stata 14 (StataCorp, College Station, Texas). Mean and Stander deviation were used; p-value of less than .05 was used to determine significance. Institutional Review Board (IRB) at Taif University approved this study.

Results

Descriptive Statistics

A total of number of 121 of sixth year medical students participated in this study. 86 (71%) of participants was male students while 35 (29%) was female students. This represents a response rate of 61%. Age of participants was range from 22-27 year old.

Item analysis and internal-consistency Reliability

Table 1 shows the Item analysis and internal-consistency Reliability for SSES. The mean of Item scores for Clinical Reasoning (1-5) is range from 3.45 to 3.81 with high Item Discrimination (.68-.80) and reliability (.89).

The mean of Item scores for Clinical Learning (6-9) is ranged from 3.68 to 3.98 with high Item Discrimination (.61 -.69) and reliability (.83).

The mean of Item scores for Debrief and Reflection (10-18) is ranged from 3.40 to 3.89 with highly Item Discrimination (.68 -.78) and reliability (.93).

The overall mean and stander deviation (Table 2) for Clinical Reasoning, Clinical Learning, Debrief and Reflection are (3.60, .90), (3.79, .81) and (3.67, .85) respectively.

Scale sub scores and overall score by Gender are shown in Table 2. To found if any statistical differences were between male and female students.The overall mean and stander deviation for male,for Clinical Reasoning, Clinical Learning, Debrief and Reflection are3.70, .87. Moreover, the overall mean and stander deviation for female, for Clinical Reasoning, Clinical Learning, Debrief and Reflection are 3.62, .45.

There is no significant correlation between scores and student Genderp-value is .603. Moreover, there is no significant correlation between scores and student age.

Satisfaction with Simulation Experience Scale Subscores: Mean ± 95% Confidence Intervals are shown in Figure 1.

Discussion

This study presents empirical evidence that SSES has high internal-consistency Reliability for Clinical Reasoning, Clinical Learning, Debrief and Reflection. The overall internal-consistency reliability is .95.

Results from this study is higher than prior studies conducted at the School of nurse, University of Newcastle in Australia, to measure psychometric testing of the SSES in the second and third year. The researchers found that, Reliability for Clinical Reasoning (.855), Clinical Learning (.850), Debrief and Reflection (.935). The overall internal-consistency reliability is0.776. (2)Another study conductedin paramedic students at an Australian universityconcluded that the overall internal-consistency reliabilityof the SSES is 0.88. (5)

This study has shown that above average overall mean score for Clinical Reasoning, Clinical Learning, Debrief and Reflection.

Results from other studies have shown that, the overall mean scores for Clinical Reasoning, Clinical Learning, Debrief and Reflection are (4.36), (4.54) and (4.47) respectively.(2) Another study shown that the overall mean for Clinical Reasoning, Clinical Learning, Debrief and Reflection are (4.23), (4.42) and (4.25) respectively. (5)

The findings in this current study showed low mean scores compared to the other studies, whichcan explained by several reasons. The most important reason isthat this is first experience for medical students to participate in simulation with low level of experience. Thus, it is important to follow

their level of satisfaction and mean scoresin the next years were they would havemore practice and experience. Moreover, short period for this course along with inadequate training time for medical students play an important role. Furthermore, the low number of participant in this study, only sixth year medical students play arole.

Lak significant correlation between mean scores, student Gender and student age because they have the same medical background; same simulation experience and the age of the students are close to each other.

However, using simulation and standardized patient is costly and need contribution of many expert staff and facilitators for conducting simulation. Moreover, its need time and administrative supportfor assuring continuity and development of such program.

This study and previous studies provide strong recommendation to medical schools in general and young medical schools in particular, to integrate simulation to their curriculum, for improving the student satisfaction.

Limitations

Results from this study are built on data from a single module and institution with limited sample size. Moreover, the response rate is low especially for females because data collection was at the end of the year at time of exams and females are reluctant to participate in this study.Future studies may use data from different modules with larger sample size to have more generalizable conclusions about students' satisfaction.

Conclusion

This paper has demonstrated that using simulation and standardized patient in instruction at Taif medical college is essential for improvingstudent satisfaction. Moreover, it should integrated in to curriculum of all clinical departments. Furthermore,the SSE Scale is reliable instrument, which supported the previous studies.

PRACTICE POINTS

1. Extrapolated simulation experience and practice to the other medical department at Taif medical college and emerging medical collages In Saudi Arabia.

2. Medical education department is responsible for set an action plan for integration   simulation program in to emerging medical school curriculum.

3. Medical education department is responsible for training all staff about ideal use of simulation and standardized patient in clinical training.

4. Provide enough time for training of medical students about simulation and encouragethem to practice on differenttype of simulation.

Ethical Approval: This institutional review board approved this study.

Declaration of Interest: No declarations of interest

Table 1. Psychometric Analysis: Item Analysis and Internal-Consistency Reliability

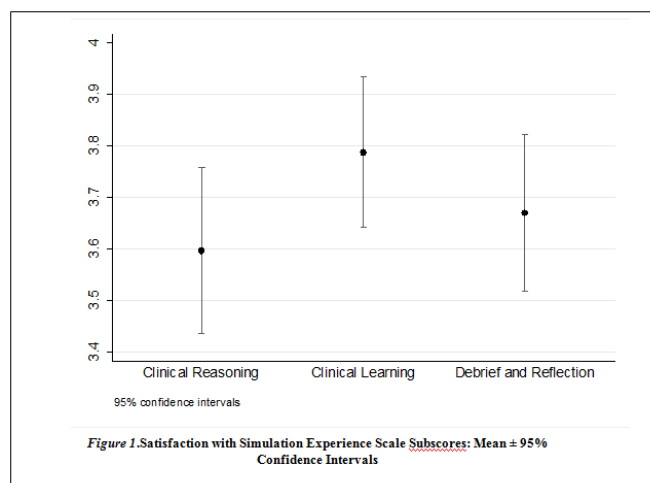| #	Item	Mean	SD	Item Discrimination	Reliability
1	The simulation developed my clinical reasoning skills	3.63	1.13	.72	.89
2	The simulation developed my clinical decision making ability	3.60	1.07	.80	
3	The simulation enabled me to demonstrate my clinical reasoning skills	3.45	1.13	.71	
4	The simulation helped me to recognize patient deterioration early	3.50	1.06	.74	
5	This was a valuable learning experience	3.81	.99	.68	.83
6	The simulation caused me to reflect on my clinical ability	3.68	1.02	.65	
7	The simulation tested my clinical ability	3.80	1.03	.69	
8	The simulation helped me to apply what I learned from the case study	3.98	.97	.68	
9	The simulation helped me to recognize my clinical strengths and weaknesses	3.70	.96	.61	

10	The facilitator provided constructive criticism during the debriefing	3.40	1.08	.71
11	The facilitator summarized the important issues during the debriefing	3.55	1.06	.78
12	I had the opportunity to reflect on and discuss my performance during the debriefing	3.58	1.11	.76
13	The debriefing provided an opportunity to ask questions	3.63	1.08	.74
14	The facilitator provided feedback that helped me to develop my clinical reasoning skills	3.68	1.06	.78
15	Reflecting on and discussing the simulation enhanced my learning	3.79	.94	.69
16	The facilitator's questions helped me to learn	3.78	1.01	.70
17	I received feedback during the debriefing that helped me to learn	3.71	1.20	.77
18	The facilitator made me feel comfortable and at ease during the debriefing	3.89	1.05	.68

(Items 10–12 share a combined value of .93.)

Note: The overall internal-consistency reliability is .95.

Table 2. Scale Subscores and Overall Score by Gender: Descriptive Statistics

Score	Male (n = 86)		Female (n = 35)		Total (n = 121)		p-value
	Mean	SD	Mean	SD	Mean	SD	
Clinical Reasoning	3.65	1.01	3.47	.54	3.60	.90	.340
Clinical Learning	3.81	.91	3.73	.48	3.79	.81	.614
Debrief and Reflection	3.68	.94	3.65	.58	3.67	.85	.875
Total	3.70	.87	3.62	.45	3.68	.77	.603

Note: There is no significant correlation between scores and student age.

Figure 1. Satisfaction with Simulation Experience Scale Subscores: Mean ± 95% Confidence Intervals

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