ORIGINAL ARTICLE

Learning in Clinical Skill Lab: The Users' Perspective

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ABSTRACT

Objective: To explore the factors that enhance and hamper learning of medical nursing students using clinical skill lab.

Study Design: Basic qualitative study.

Place and Duration of Study: This study was carried out from 03 April to 29 September 2017, in Clinical skill lab of Fazaia Medical College, Islamabad affiliated hospital.

Materials and Methods: One to one semi structured interviews was conducted and qualitative data was collected. Literature search was done extensively before formulating the interview questionnaire. This was followed by expert validation. Audio recording was done of all the interviews, the same were transcribed, coded and analyzed both manually and by importing it into Pro 11 version of NVivo; this was followed by thematic analysis.

Results: Twenty participants, 6 males and 14 females participated in the study, with minimum of 6 to 9 months training in CSL. All the participants confirmed that the training in the CSL increased their motivation and confidence, a large majority agreed that their teachers/facilitators demonstrated the skills in a professional manner, the facilitators were vigilant during the teaching sessions and observed the trainees while they practiced, most of the trainees acknowledged that they had completed their training utilizing all the equipment. The participants appreciated the learning in CSL, the knowledge, skills, experiences and confidence, they acquired. However they mentioned the shortage of space, time given and equipment provided for their training.

Conclusion: All the CSL trainees strongly endorsed this method of hands on training, they narrated that inspirations, motivation, training and guidance provided by the instructors enhanced their learning in CSL, while shortage of time for practice, space in CSL and manikins hampered their learning.

Key Words: *Clinical Skill Lab, Confidence, Manikins, Motivation.*

Introduction

In Health sciences didactic teaching and training had been traditional. This is intended to acquire as much knowledge as possible. Many medical institutes in South Asia are still following the traditional teaching. Regional medical institutions commonly adopt demonstrations, various types of lecture presentations to help the health care students to learn and understand ranging domains of knowledge, skills and attitudes.[1,2]

However various medical careers are adopting new teaching and learning methodologies, These new teaching modalities have also been adopted and the change has been initiated for better learning and contributing towards patient care.[3] The health care policy makers have overwhelmingly advocated the incorporation of quality initiatives in learning and teaching that would ensure all aspects of patient safety.[4]

They stress the need to acquire adequate level of skill expertise and understanding of its application before trainees manage the real patients. The policy managers have also emphasized and promoted the use of simulation based training to address the issues of patient safety.[5] The students of this era are trained from their school days using innovative teaching methodologies and technologies.

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Funding Source: NIL; Conflict of Interest: NIL
Received: November 07, 2018; Revised: November 22, 2018
Accepted: November 24, 2018

Therefore, once they enter the health care careers here too adoption of upgraded teaching methodologies and utilization of latest technologies is the way forward to bridge the gap of learning the new procedures and complex skills that need to be learnt by the health care providers for better patient outcome.[6] The development of CSL is one of the many initiatives that have been taken by the health care trainers to address the issues on innovative technologies for learning and patient safety.[7,8]

The development of CSL is one of the many initiatives that have been taken by the trainers. Hence, to address the patient concerns, effective methodologies for teaching that provide appropriate equipment and environment for learning are genuine and compelling reasons for the training institutes to establish Clinical Skill labs (CSL). However, despite provision of some CSL, there is dearth of literature in the local context that had explored the factors that hamper or enhance the learning of students using CSL.[9]

Materials and Methods

This basic qualitative study was conducted in a CSL of hospital affiliated with Fazaia Medical College, Islamabad from 03 April to 29 September, 2017. This center provides the training to nursing (male and female) students. The nursing course total duration is 4 years. The nursing students were trained for 6 to 9 months in CSL. They learn various techniques and procedures during their training in CSL. At the end of the course the trainees are evaluated before they are allowed to transfer their skills to real patients.

Twenty medical nursing students; 6 male and 14 female, consented to participate in the study. The CSL trainees were informed regarding their voluntary participation. All trainees gave their informed written consent, the undertaking and assurance was given to participants regarding securities of information, anonymity and confidentiality. The trainees were also informed that there will be no reward or payment given to them for their participation. The permission from Institutional Review Board (IRB) of Fazaia Medical College was taken. Only those nursing students were included in the study who completed minimum of 6 months training in the CSL.

All participants of the study had one to one semi structured interview with the researcher. Extensive literature search was done before formulating the questionnaire, the main areas of interest that were pertinent to this research were identified and the questions were framed accordingly. The areas were explored in further details to find the answer to the study research question. To enhance the research quality and give sequence to the questions, before the real interviews were carried out, the validation of questionnaire was done, using the questions that had to be used. Pilot interviews were conducted with 3 nursing students. The research question and the tools were aligned, followed by deductive coding and thematic analysis. Triangulation was done by taking field notes, member checking and interviewee comparisons. The analysis of qualitative data was done by using Nvivo Pro 11 software.

Results

The total number of participants who volunteered for the study was 20, (6 males and 14 females). All the participants had undergone a training of minimum 6 to 9 months in the CSL. The training comprised of using plastic models, low and high fidelity equipment/manikins/devices. Along their training in CSL, the participants also worked in the wards as per schedule of their duties. All the participants confirmed that the training in the CSL increased their motivation for learning clinical subjects and procedures, *P4:* "Each individual performs on manikins and our interest increases". "We get the inspiration from our instructor." P5: "This experience motivated me in doing my work in a better way," they also expressed that this training also improved their confidence, P2: "I gained confidence to perform my skills ....." P3: "I felt confident while attending the patients." P4: "CSL builds confidence in us." They commonly reflected positively regarding the experience and expertise they gained through the training in the CSL. They also indicated that CSL training was important to them, when they performed various clinical skills on real patients in the wards or the outpatient department. *P6:* "CSL training is much important to treat patients." P14: "We are taught many clinical skills in CSL." P16: "CSL provided a great opportunity to learn many skills and procedures."

The bulk of the participants approved that their teachers/facilitators demonstrated the skills during their teaching sessions and that the trainees

developed the desired level of expertise. *P3:* "Our instructor took keen interest to make us learn." P5: "We practiced on manikins many times." Popularly the opinions of the nursing student matched that the facilitators were vigilant during their teaching sessions, they observed the trainees while they practiced. *P3:* "The instructor asked us to conduct presentation and practice on manikins." P6: "My instructor in CSL taught me the basics of nursing and helped us to work and practice on manikins…" P9: "I practically performed many procedures in the CSL." Masses of the trainees indicated that they had completed the training utilizing all the equipment

Table I: The Responses to the Open Ended Question Codes, Sub Themes, and Themes of Text Analysis by Nvivo Pro 11

S. No	Theme	Subtheme	Codes	Representative quote (P = Participant no.)
Feelings of the participants				
1	Good Experience & high Motivation	Experience	The experience was good and I felt happy and excited	"My experience using Clinical skill lab was that I was so excited"(P1); "My experience was good while learning in Clinical skill lab"(P2); "In using Clinical skill lab my experience was very good"(P4);
		Motivation	Intrinsic interest to work, interest to work in CSL	The clinical skill lab increased my motivation"(P2); "I get motivation from the Clinical skill lab"(P7);
Factors affecting their learning: Hampering and enhancing their learning				
2	Scarcity of infrastructure, equipment, quality of training and trainers	Infrastructure and equipment issues	Shortage of: time, manikins, space, and trained staff	Manikins are less in quantity "(P1); "there is shortage of manikins "(P2); "Manikins present in our skill lab are not sufficient for the practice --"(P5); "there are less dummies to practice--"(P6); "there should be more manikins"(P5); "there should be more space for learning and teaching"(P6); learning stations should be increased-(P9);
		Administrative issues	The proper time management required along with more duration to work and more space	there should be time management for practice for each trainee"(P5); "specialized lectures should be arranged"(P6); "practice time should be increased for the trainees"(P9); "there were also space problems using clinical skill lab"(P12); "the duration of our training is most important problem"(P13); "there is no proper time management for clinical skill lab training"(P15); "provide us more space"(P12); "give us one place and proper duration--"(P14); "we need to spend more time in clinical skill lab and in practice"(P20);
		Issues of trainers	Dedicated and Qualified trainers required	"in clinical skill lab there should be specific teachers"(P1); the instructors should be available to teach accordingly to the strength of trainees"(P4); "without a trainer our teacher it is not possible to have any skill"(P16); "shortage of teacher"(P17);
		Practical procedures	Passing of I/V cannula, endotracheal, nasogastric, learning CPR	"I have learnt how to put an intravenous cannula "(P12); "I have learnt many procedure like passing naso-gastric tube"(P13); "We are taught stitching, intramuscular injections, passing catheter"(P14); "I have learnt cardio pulmonary resuscitation , doing ECG, passing naso-gastric tube"(P17);

that was arranged for their learning. *P13:* "I learnt many procedures that were necessary for a medical nursing student." P14: "Our teacher taught us many clinical skills on manikins." A few of them acknowledged that they were fearful that something might go wrong in the CSL that could damage the equipment. Predominantly the trainees replied that they were not fearful and were convinced that they were working in an environment where no harm would occur to any person or equipment while they gained the required experience and practice. *P6:* "The training helped to work and practice with manikins without hesitation," It was commonly expressed by the trainees that they feared they could have hurt the real patients had they not learnt and practiced the procedures in the CSL. Moreover, many of the students expressed their confidence that they could transfer the skills to the real patients that they had learnt in the CSL, P12*:* "It is impossible to do efficient work in wards without CSL training,"

Mostly, the trainees appreciated the training for various procedures like cardiopulmonary resuscitation, how to administer various treatments, manage patients, the basic nursing skills, passing of cannula in the vein, passing catheter in urethra, passing the nasogastric tube, endotracheal tube, to take blood pressure and temperature. *P6:*"We learnt many procedures like passing of NG tube, CPR….," P12: "I learned passing of endotracheal tube and how to give enema," P16: "CSL provided great opportunities to learn skills and procedures,"

All the trainees also expressed their feelings of gaining confidence with the training of CSL and that their work in the wards became more efficient. They felt motivated and excited while getting the training courses and practicing procedures in clinical skill lab. However, majority also expressed their concern regarding the shortage of: space and time for training and the numbers of manikins. *P18* "We could not practice on manikins due to shortage of time," P19 "….. There was shortage of time, less space and less manikins. The summary of codes, sub themes and themes of text analysis are presented in Table I.

Discussion

Until recently, clinical skills were taught using real patients. Due to many concerns like trainees and patients safety, distress to the patients where real patients were used to practice various skill and procedures, concept of developing core competencies during training of health care professionals, technology enabled teaching devices and manikins, increasing number of students being inducted in each session, now the health professional training institution are gradually moving towards adding the Clinical Skill Lab on their premises. However medical literature is deficient in documenting the factors that enhance or hamper the learning of students using CSL. This study explores these factors.

Due to ever changing demands of society and deeper understanding of various disease mechanisms, educators have been encountering many educational challenges and are involved in the dynamic process to reform the curriculum and teaching methodologies.[10]

Nevertheless the efforts are underway, even in developing countries to bridge the gaps in teaching and learning by providing opportunities for training and practice in safe environment.[11] This is to keep both trainees and the patients away from harm[12], this is where CSL setup provides the concepts of safe environment for practice and learning.

This study reflects the responses of those who use the CSL for their training. The responses received from the participants in this study revealed that they were happy and excited to attend the sessions of the clinical skill lab. They learnt many procedures like suturing and resuscitation. This was achieved, as a wide range of manikins and equipment were available. The same observations were noted in a study where clinical skill labs provided learning opportunities with provision of various equipment that ranged from low to high fidelity.[13,14]

The nursing students also expressed their feelings that they practiced in a safe environment in the CSL and they understood that their practice will not harm anyone and it's safe to make mistakes. The same is also reported in literature that CSL are venues where training practice of skills and its applications are carried out in environment that is safe.[11]

The CSL are established to ensure that students are provided with the required and adequate exposure to the clinical cases in a standardized manner.[15]

All the participants in this study confirmed that their training in the clinical skill lab enhanced their

motivation for learning the procedures, similar findings were supported by other local studies where clinical skill lab was used for integrating basic sciences subjects and the participants felt motivated using CSL.[15] The students using the CSL in this study also expressed that they felt more confident by using the CSL equipment ,the literature has quoted similar benefits of CSL where students using CSL gained confidence while using simulation.[16]

Most of the students expressed their confidence that they shall be able to transfer their learnt skills to real patients. This is an important attribute of learning in CSL. Various students have reported similar findings where simulation training helped in transferring of skills for clinical application.[17] This study noted that the training in the CSL was important to the students as they understood that they would perform the same procedure on real patients, other studies also narrated that simulated settings were more effective for training and long term preservation of the skills.[13,18]

The majority of participants in this study agreed that their facilitators demonstrated the skills during their teaching session; this was aimed to make them understand the various steps that were required to carry out different procedures. It was also observed by the participants that the trainers/facilitators were vigilant during their teaching sessions, they observed the training and that the trainees learnt in an organized manner. The literature has also identified similar findings that skills are strengthened through time and consolidated through demonstration of skills.[19]

The students also shared their views that in CSL the facilitators demonstrated them various procedure and skills. The trainers supervised and observed the trainees while they practiced. Similar finding have been reported in studies in Malaysia where supervisors reflected regarding the trainees development of various competencies during their supervisory sessions.[2,15]

Majority of the students expressed their confidence that they could transfer the learnt skills to the real patients. Research supports this claim of the students that use of simulators was received optimistically both by the educators and students, as it enhanced the transferability of the skills.[20]

It is well understood that there will be no replacement for physician and teachers in medical education but technological advancements will provide the facilitators many platforms for designing more creative and interesting training sessions that have better learning outcomes and also improve quality care for patients.[21]

Educational technologies are taking hold and can provide the experiences never imagined before.[22] As medical educators, we need to encourage our students to practice and enhance their level of expertise in skills in venues that are both safe for students and patient.

The study also emphasized that most nursing students perceived that they needed institutional support for CSL equipment maintenance and enhancement both in numbers and fidelity, they required dedicated staff for teaching, demonstrations and managing the CSL facilities. They also expressed that the duration of sessions needed to be enhanced to provide more opportunities for practice and learning. Our findings are in contrast with literature in a study carried out in Saudi Arabia where most students had the opinion that adequate staff, institutional support and learning sessions of desired durations were provided.[23,24] Overall the trainees expressed their feeling of satisfaction, excitement and happiness regarding their training in CSL.

Conclusion

All the trainees in the CSL strongly endorsed this method of hands on training. The trainees identified the factors that enhanced their learning, these were: training, guidance, inspiration and motivation for learning provided by the trainers, the variety of manikins models and equipment provided for learning, the personal and equipment safety and safe environment arranged for practice. The factors that hampered their learning were: shortage of space in CSL, the allocated time for training and the relatively less number of manikins available for practice.

Recommendations from the study

It is suggested that while designing the course content for training in CSL for nursing students their representatives need to be involved to augment the factors that enhance their learning and eradicate the factors that hamper their learning.

Future Study

For determining the core factors that enhance or hamper the learning of the nursing students using CSL, future studies can be designed to capture the perspective of the users to take preventive and corrective actions for optimizing the learning of CSL users.

Limitation

Future studies require the increase in sample size of the participants who receive their training in CSL and belong to various institutes.

Conflict of Interest

No funding was received from anywhere for this project. There is no conflict of interest of any author.

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