EXPECTATIONS AND PERCEPTIONS OF UNDERGRADUATE MEDICAL STUDENTS IN OPERATION THEATRE: HOW CAN WE IMPROVE THIS LEARNING EXPERIENCE?

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ABSTRACT

Objective: Most of the experience of students in theatre depends upon the interaction between student and surgeon, also as a result of the opportunity in taking part in the procedures. Theatre-based learning has little inherent benefit otherwise. We wished to identify other factors happening in the operation theatre, contributing to this opportunity.

Design: This was a cross-sectional study. A questionnaire was designed, which included forced-choice and open questions. This was given to the undergraduate students of 4th and 5th year MBBS of Saidu Medical College, Swat, who had just finished their surgical attachment.

Analysis: Responses from the closed questions were presented as percentages and those from open questions were identified as themes and the relationship among these further explored.

Results: A total of 96 students returned the completed questionnaire. Overall rating was given by 98%, out of which, 39% very good, 7% excellent, 30% good and 22% poor. Thirty five percent felt welcomed in operation theatre, and 45% students received instructions beforehand. Only 52% students knew beforehand, what operation they are going to see that day. Operation theatre etiquettes were taught to 38% and 40% of students were unclear about the learning objective of attending operation theatre. Unfriendliness of theatre staff was reported by 48%. 31% stated that they should improve their communication skills and another 44% said that they should learn, how to explain things to undergraduate medical students. The experience was stressful for 12% and another 39% experienced poor visibility. Student's expectations of learning were mainly focused on acquiring knowledge. Their learning experience varied widely. Students did not feel adequately prepared for getting the most out of this learning opportunity

Conclusion: The student experience may be distorted by unrealistic expectations of theatre-based learning. Clear and realistic learning objectives, familiarizing the students with the environment, explaining staff roles, involving students in patient's care pathway, faculty expectations being clearly communicated to the clinical teaching staff and most important, the approachability and welcoming behavior of the operation theatre staff are likely to improve this learning experience.

Keywords: Operation theatre, Undergraduate, Teaching and Learning.

INTRODUCTION

Lifelong learning is a concept taken up by governments and educational institutions worldwide to acknowledge the need for continuous learning, irrespective of the profession[1]. Consideration should be given to the feedback received and follow-up studies should be carried out so that appropriate changes in the curriculum could be induced[2]. Although core lectures should continue side by side but practical training is equally important in undergraduate medical education[3]. The reported studies in medical education, throw very little light on teaching in operating theatre. Published studies focused on identifying content and effective behavior for teaching and ways to measure the frequency of these behaviors[4-6].

More recent articles have discussed that how

medical students learn and are taught in operating theatre using descriptive and qualitative methods. Lyon examined the dynamics of teaching and learning in the operation theatre from the perspective of process that develop in the workplace environment[7]. Stark also reported on student's experience of learning in the operation theatre. It identified that students say, their most valuable learning experience occur, when they engage in the practice of surgery but that they appreciate the 'cultural experience" of theatre-based teaching[8]. Most of the student experience in theatre depends on the interaction between student and surgeon, which may be dependent on individual, personal characteristics, such as student confidence in promoting themselves to the surgeon as someone who is interested and motivated[7].

The Stark's study revealed the feeling that teaching in theatre was only of slight benefit or no benefit at all. The experience of theatre was considered valuable as this could influence future career choice[8]. The latter is important as with the introduction of modernizing medical careers, where students are required to make their choice at an early stage, most likely on the basis of their undergraduate experience only. Undergraduate experience does appear to be core to career choice; Goldacre et all state 44.9% of respondents considering 'experience of chosen subject as a medical student influenced their career choice a great deal[9].' Thus optimizing the experience of theatre-based learning is critical for educational purposes as well as ensuring recruitment into surgical specialties.

We wished to identify non-social factors that may have contributed to the experience of theatre-based teaching, which may be open to change at a faculty level. Thus the aims of this study were to describe what non-social factors students perceive as contributing to good theatre-based teaching on a fully-integrated medical degree programme and to assess what learning expectations students see as important to this learning opportunity. Also to identify those factors, which could be implemented at a faculty level for quality controlling the experience of theatre-based teaching.

MATERIALS AND METHODS

This was a cross-sectional study, for which we designed a short questionnaire for 4th and 5th (final) year undergraduate medical students of Saidu Medical College, Swat. This questionnaire of closed questions combined with a number of open questions, to explore the view of 4th and final year medical students was to identify that how theatre-based teaching could be modified. The open questions were designed to be neutral and to invite free text responses. This questionnaire was distributed in 2011. Involvement in the study was entirely voluntary and it was made clear to students that non-participation or participation with negative views would have no impact on their training or assessment. The questionnaire used was anonymous and was distributed to 100 medical students, 50 each from 4th and final year undergraduate medical students, at a time when they had just completed their surgical attachment in 2011. A student nurse did the distribution and then collection of the questionnaire, rather than a teacher. This study did not require permission from the ethical committee, as this was an audit of teaching practice not involving patients.

Closed Ended Questions

Closed ended questions asked were like, was theatre attendance necessary for undergraduate medical students, did they attend theatre outside their allocated slots in order to increase their learning opportunities, whether they were welcomed in theatre, how will they grade their experience in operation theatre like excellent, very good, good or poor, was this experience dependant on particular team, did they receive any instructions before attending theatre, did they receive quality advice and specific details on how they should prepare for theatre, were they introduced to theatre staff, did they receive information on staff roles and interactions and by whom, were they told how to use theatre suite,

were they told what to touch and what not to, did they know beforehand what operation they are going to see that day.

Open Ended Questions: The open ended questions asked were like, did they know why they were attending theatre, was simple fact acquisition important rather than looking at staff interactions or processes of operative care, did they consider basic medical sciences like Anatomy, Physiology and Pathology important learning objectives of attending theatre or learning specific details about a certain surgical condition and its management. Questions were asked about over ambitious attitude of students like, learning skills, techniques and surgical or anesthetic procedures. Questions were designed about knowing how important staff roles were, interactions, theatre etiquettes, familiarity with theatre layout and environment, patient pathway, anesthetic considerations, fitness for surgery and principles of sterilization and asepsis. Also questions about the friendliness and approachability of theatre staff as well as the communication skills and enthusiasm of the surgical staff were asked. They were asked whether time spent in operation theatre was interesting or stressful. Questions about the importance of case-based discussions or reflective discussions were asked and whether they were actively involved in operation in the form of assistance and the visibility of the operative procedure. Finally they were asked to state difficulties they faced in operation theatre.

RESULTS

Out of the 100 questionnaires, only 96 fully completed forms returned. They were analyzed. The replies of closed questions were presented as percentages and the themes of the open questions were identified and relationship among these themes explored.

Responses to closed ended questions: Majority of the clinical students (75%) felt that attendance of theatre is a necessary part of undergraduate curriculum. 55% of the students attended theatre outside the allocated time. 35% of the students felt welcomed in operation theatre all of the time and 78% of the students felt welcomed at least once. 39% of the medical students considered the overall learning experience as very good with a further 7% considering it excellent. 30% and 22% marked it as good and poor respectively. However the students commented that their experience in operation theatre was very much dependent on the team and unit and consequently, the learning experience varied greatly. Only 45% of the students had received any instructions before attending theatre, Students commented that the quality of advice and specific details of how they should prepare for theatre was not standardized; instead this was dependent on the ward or team.

Not all medical students were able to attend specialty-based preparatory sessions for theatre-based teaching, due to timetable differences. Staff roles and interactions were explained to only 37% of the medical students. Nursing staff, anesthetists or other theatre staff but not the surgical team, usually provided this information. 52% of the students knew beforehand what operation they are going to see that day. 38% of the students were taught some of the theatre etiquettes, like how to use theatre suite, when to and when not to enter certain doors, where to stand and lastly what to and what not to touch (Table: 1).

Table 1: Responses to closed ended questions

S.No	Question asked (Closed)	Response 4th yr	Response 5th yr	Overall Response
1	Attendance in Operation Theatre is necessary	70%	80%	75%
2	Attended Operation Theatre outside allocated time.	61%	49%	55%
3	Generally felt welcomed	29%	41%	35%
4	At least once welcomed	67%	89%	78%
5	Overall grading			
	Excellent	9%	5%	7%
	Very good	30%	48%	39%
	Good	27%	33%	30%
	Poor	11%	33%	22%
6	Received instructions beforehand	31%	59%	45%(Not standardized)
7	Staff Roles and interactions explained to:	32%	42%	37%(Not standardized)
	Nursing staff	18%	12%	15%
	Anesthesia staff	7%	17%	12%
	Theatre staff	4%	6%	10%
	Surgical staff	Nil	Nil	Nil
8	Knowledge about the operation beforehand	39%	65%	52%
9	Theatre etiquettes taught	28%	48%	38%

Responses to open ended questions: 40% of the students were unclear about the learning objectives of attending theatre. 88% of the students focused on simple fact acquisition rather than looking at staff interactions or process of operative care. 35%of the students considered revision and learning of basic sciences, such as Anatomy, Physiology and Pathology to be the most important learning objective of attending theatre, and 58% considered that learning specific details about certain surgical conditions and their management are the most important learning objectives.

34% of students were in favor of learning and memorizing specific skills, techniques and surgical or anesthetic procedures, which are postgraduate level knowledge as by the faculty while only 13% of the respondents considered staff roles and interactions, familiarity with theatre layout and environment, theatre etiquettes, principles of patient management, patient pathway, anesthetic considerations, fitness for surgery and principles of sterilization and asepsis to be important for learning in operation theatre.

78% of students reported that friendliness and approachability of theatre staff is the single most important factor in theatre learning. 48% students responded , that theatre staff was unfriendly and unapproachable. 31% stated that they should improve their communication skills and 44% said, that they should learn how to explain things to medical students.

Response to questions about the time spent in operation theatre were mixed, 12% thought it was stressful while 30% found it good as it helped them focus on important objectives of that operation.

32% of students considered preparatory case-based discussions, useful learning exercises. 48% students said in the replies that active involvement in the procedure like asked to assist or perform simple procedures helped them a lot.

39% of students mentioned that due to poor visibility in operation theatre, they could not see the procedure and hence learnt nothing in operation theatre. 40% had good chance of seeing actual procedure and out of them 39% found that this way they learnt (Table 2).

Other difficulties reported by the medical students in response to open questions were access to operation theatre, finding suitable scrubs and clogs, unawareness of operation theatre etiquettes like whom to introduce to, when to and when not to enter through certain doors, where to stand and what to and what not to touch.

Table 2 Response to Open Ended Questions

S.No	Question asked (Open)	Response 4th yr	Response 5th yr	Overall Response (Average)
1	Clear about the learning objective of attending Operation Theatre	38%	42%	40%
2	Interested in fact acquisition rather than staff interactions and process of operative care.	90%	86%	88%
3	Basic sciences, Anatomy, Physiology and Pathology were considered important for Operation Theatre.	28%	42%	35%
4	Students who gave importance to learning specific details about certain surgical conditions.	66%	50%	58%
5	In favor of memorizing and learning specific skills of post graduate level.	20%	48%	34%
6	Students giving importance to staff roles, interactions, theatre layout and environment, theatre etiquettes, principles of patient management etc.	10%	16%	13%
7	Single most important factor in theatre learning is friendliness and approachability of staff	81%	75%	78%
8	Unfriendliness and un-approachability of theatre staff noticed.	54%	42%	48%
9	Operation Theatre staff should improve their communication skills	28%	34%	31%
10	Operation theatre staff should learn how to explain things to undergraduate medical students	31%	57%	44%
11	Time spent in Operation Theatre	Good 27% Stressful 10%	Good 33% Stressful 14%	Good 30% Stressful 12%
12	Preparatory case-based discussions useful	23%	41%	32%
13	Active participation in operative procedure is important.	31%	65%	48%
14	Visibility in Operation Theatre	Good Chance 36% Poor Visibility 44%	Good Chance 44% Poor Visibility 34%	Good Chance 40% Poor Visibility 39%

DISCUSSION

This study had a number of strengths; like student had a full opportunity to provide free text responses to a number of open questions and that the questionnaire was distributed and then collected by a student nurse, who had little knowledge of medical students, thus reducing the risk of relationships influencing responses or

analysis[10]. Possible weaknesses of this study were, questionnaire survey could not explore responses to open questions, a better way would have been individual interviews and that 4th year students had experience of theatre attachment once as compared to final year who had this experience twice.

Our aims were to identify factors that may be open to change, to improve the learning experience in theatre. Our data identified several themes, like students had unrealistic expectations of theatre-based learning. The participants overwhelmingly focused on acquisition of knowledge as the objective of teaching rather than gaining insight into the process of operative care. The rating was poor by the students due this understanding. Comparable results were noted by, N. Fernando et all in their similar study in undergraduate Medical Students of university of Aberdeen Uk[11].

Our study data suggests that theatre-based learning would be improved with the provision of well-timetabled, pre-teaching preparatory sessions in preparation for theatre, such as theatre tour, introduction to staff and their duties, sterilization and asepsis, information on theatre etiquettes. Adequate provision of theatre scrubs and clogs for students and more widespread use of video display units and cameras[8].

The students should be involved in the patient journey, from decision-making, clerking in, preoperative investigations and anesthetic assessment. This will ensure that they are aware of the relevance of theatre session within the organizational and care pathways[12]. Other authors have also identified, that learning experience in theatre can be dependent on individual members of staff and individual teams,[7,8] making clear that the clinical staff know the objectives and expectations of teaching. Appropriately supporting this, will encourage standardization of the student learning experience.

Similar study by Debra Nestel and Jane Kidd[13], proves that key skills deemed essential, include listening, courteous behavior, acknowledging requests and clear accurate speech. Communication in the Operating Theatre is compromised in relation to the absence of basic interpersonal skills and appreciation and respect for different professional roles.

A similar questionnaire survey by Samuel Cl Leong et al[14] showed comparable results as ours, where 10% trainees did not receive teaching when performing their first incision and drainage and over 50% did not receive any feedback from their trainer

On the other hand an active Training the Trainer programme should be adopted, this will not only leads to a higher quality of education and training, but also a greater confidence on the part of the trainer to be able to deliver what is a highly demanding agenda[15].

Finally our study indicates that being friendly, approachable and welcoming students into the operation theatre, is likely to encourage more students to consider surgical specialty as a career.

CONCLUSION

This study adds that:

- Students don't feel properly prepared for attending theatre.
- How welcome students feel in theatre, influences their perception of experience.
- Student's expectations of learning focus predominantly on knowledge acquisition rather than patient care pathway.

The way forward:

- The aims and learning objectives of theatre-based teaching should be explicitly communicated to clinical teaching staff and students.
- Pre-teaching preparatory sessions for theatre are important and will improve the student learning experience.
- Approachability and friendliness of theatre staff is a must.
- Visibility of the operative procedure needs to improve further.

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