Original Article

An Optimal Learning Strategy in Accordance with the Undergraduate Students of Gynae and Obstetrics, Ophthalmology and ENT

Case Base Learning in Medical Students

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ABSTRACT

Objective: To evaluate the perception of the students about CBL in clinical subjects.
Study Design: Cross Sectional study.
Place and Duration of Study: This study was conducted at the Al-Tibri Medical College and Hospital, between January 2019 and October 2019.
Materials and Methods: A total of 150 numbers of students, 50 from different disciplines like Gynae & Obstetrics, Ophthalmology, and ENT, were included on the bases of convenient sampling. After taking ethical approval, the data was collected through a well-designed questionnaire with the students' verbal consent. At the end of the clinical posting, the questionnaire was filled, and data was presented in the form of frequency and percentage, Chi-square test was applied to evaluate the qualitative data through SPSS. The level of significance was taken P=<0.05.
Results: Both genders participated. The study results showed no significant difference among the students of Gynae & Obstetrics. Ophthalmology and ENT about the acceptance of CBL is an optimal learning strategy and a well-adopted component of self-directed Learning, particularly in clinical reasoning and case solving.
Conclusion: CBL (Case-Based Learning) is a widely accepted learning strategy and helps develop essential skills required to be an excellent clinician in the future. It is considered the gold standard for Learning and implementing in clinical sciences in the field of medicine early on in students' medical careers. The educationist should incorporate the CBL in their medical sciences curriculum for the development of clinical reasoning and problem-solving skills.
Key Words: CBL, Self-directed Learning, Ophthalmology, ENT, Gynae & Obstetric.

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INTRODUCTION

Undergraduate medical Learning is often difficult and requires teachers to be innovative in teaching methods to deliver medical education to the students effectively. Only through active Learning will students be able to assess different medical situations and will be able to apply their learning in their professional careers. Educators have come to realize that there needs to be a relevance to the learners so that they may be actively engaged in the topic they are studying[1].

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These medical schools have now started to understand the importance of early clinical work being implemented early on in the students' medical education and have opted to mix basic and clinical sciences as vertical integration[2]. This has led to an adaption of a more active based learning in medical colleges. One of these methods is called Case-Based Learning (CBL). In CBL, a written case history is given to undergraduate medical students who study and then discuss the case between their peers in a small group[3,4]. Case-Based Learning was first introduced in the University of Edinburgh by their pathology professor, James Lorrain Smith, initially calling it a case method of teaching pathology[5]. This method aimed to develop a level of thinking in students that will help them link science with clinical practice, by seeing the history of the patient, including symptoms and signs, and other findings at post mortem. CBL is sometimes often compared to another clinical integration method referred to as Problem Based Learning (PBL); however, it is still distinct. CBL and PBL were analyzed, and it was noted that in PBL, students lacked preparation and had minimal guidance when it came to case discussion[6]. However, when it came to CBL, both the students and faculty had the opportunity to prepare in advance along

with additional guidance throughout the discussion allowing imported points to be learned during the session. It is important to assess that all types of clinical rotations equally benefit from CBL or not. Therefore, a study was conducted to evaluate the effectiveness of CBL in students of Ophthalmology, ENT, and Gynecology.

MATERIALS AND METHODS

The cross-sectional study was designed at Al-Tibri Medical College and Hospital after taken approval from the ethical committee. The data was collected between the duration of January 2019 to October 2019. The students of the 4th year of MBBS were included based on convenient sampling after taking verbal consent from the students. A total of hundred students were involved in the study; in clinical posting, 25 numbers of students were rotated in different departments for a particular duration, and each of the students should cover all the discipline accordingly. According to the curriculum, students have to cover the clinical course of ENT, Ophthalmology, Gynae & Obs, and pediatrics. The students from surgery and allied sciences were included in the study. Total 50 numbers of the participants those were completed their course work and clinical posting in ENT, Ophthalmology, and Gynae and obstetrics included in the study while the students from other disciplines were excluded. The participants filled Self-designed questionnaires; those were attended the CBL session during their clinical rotation. Data was presented in the form of frequency and percentage, and the Chi-square test was applied to analyze the qualitative data through SPSS. The level of significance was considered P=<0.05.

RESULTS

Figure 1: Shows the frequency and percentage of Male and Female Students that filled the questionnaire.

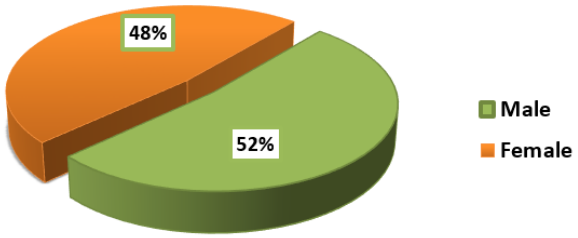

Figure No.1: Percentage of participants according to Gender distribution

Table 1: Shows the frequency and percentage of responses (Agree, Neutral, Disagree) that the students of Gynae & Obstetrics, Ophthalmology, and ENT
There was no significant difference (P > 0.05, Chi-Square Test) between Gynae & Obstetrics, Ophthalmology, and ENT when it came to the importance and effectiveness of Case-Based Learning during their medical education**.**

Table No.1: Frequency and percentage of participants' response regarding effectiveness of Case-Based learning in different disciplines of Clinical Sciences

	Questionnaire	Ophthalmology			ENT			Gynae and obstetrics			P-value
	Effectiveness of CBL in clinical sciences	Agree	Neutral	Disagree	Agree	Neutral	Disagree	Agree	Neutral	Disagree	
1	CBL is an effective learning strategy	48(96%)	2(4%)	0(0%)	47(94%)	3(6%)	0(0%)	47(94%)	3(6%)	0(0%)	0.876
2	CBL helps to develop the learning abilities	48(96%)	2(4%)	0(0%)	46(92%)	3(6%)	1(2%)	46(92%)	2(4%)	2(4%)	0.673
3	It can mark as a best method of self-directed learning	44(88%)	4(8%)	2(4%)	45(90%)	4(8%)	1(2%)	45(90%)	3(6%)	2(4%)	0.963
4	CBL makes learner an autonomous	45(90%)	5(10%)	0(0%)	47(94%)	3(6%)	0(0%)	43(86%)	6(12%)	1(2%)	0.529
5	CBL is an optimal method, that improve the learning skills	50(100%)	0(0%)	0(0%)	50(100%)	0(0%)	0(0%)	50(100%)	0(0%)	0(0%)	------
6	Cases that were incorporated for the session, they were up to the mark	41(82%)	5(10%)	4(8%)	40(80%)	4(8%)	6(12%)	40(80%)	6(12%)	4(8%)	0.955

7	CBL specifically helps to build the skill of critical thinker	41(82%)	8(16%)	1(2%)	41(82%)	7(14%)	2(4%)	44(88%)	4(8%)	2(4%)	0.752
8	CBL is an appropriate method for learning clinical relevant courses	50(100%)	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)	50(100%)	0(0%)	0(0%)	------
9	CBL is an effective learning approach among others	41(82%)	5(10%)	4(8%)	42(84%)	5(10%)	3(6%)	41(82%)	6(12%)	3(6%)	0.987
10	It helps in retaining of relevant facts and clinical information	50(100%)	0(0%)	0(0%)	50(100%)	0(0%)	0(0%)	50(100%)	0(0%)	0(0%)	------
11	A best way to organize the study habits	45(90%)	5(10%)	0(0%)	44(88%)	6(12%)	0(0%)	45(90%)	5(10%)	0(0%)	0.932
12	CBL boost up the communication skills	43(86%)	6(12%)	1(2%)	46(92%)	4(8%)	0(0%)	45(90%)	4(8%)	1(2%)	0.795
13	CBL helps to learn that how to use the different resources to solve the cases	44(88%)	6(12%)	0(0%)	44(88%)	6(12%)	0(0%)	45(90%)	5(10%)	0(0%)	0.936
14	CBL makes more comfortable to understand the difficult elements	47(94%)	3(6%)	0(0%)	47(94%)	3(6%)	0(0%)	48(96%)	2(4%)	0(0%)	0.876
15	It helps to understand the context through discussion with classmates	50(100%)	0(0%)	0(0%)	50(100%)	0(0%)	0(0%)	50(100%)	0(0%)	0(0%)	------
16	CBL helps to generate the questions and directed towards the analysis of the given problem	45(19%)	4(8%)	1(2%)	44(88%)	4(8%)	2(4%)	46(92%)	3(6%)	1(2%)	0.998
17	CBL produces strong collaborators	45(90%)	5(10%)	0(0%)	47(94%)	3(6%)	0(0%)	45(90%)	5(10%)	0(0%)	0.714
18	CBL makes stress-free preparation of examination	47(94%)	3(6%)	0(0%)	45(90%)	5(10%)	0(0%)	46(92%)	4(8%)	0(0%)	0.762
19	It makes easier to solve particularly one best question	46(92%)	4(8%)	0(0%)	47(94%)	3(6%)	0(0%)	47(94%)	3(6%)	0(0%)	0.898
20	Facilitator having significant role in the session	50(100%)	0(0%)	0(0%)	50(100%)	0(0%)	0(0%)	50(100%)	0(0%)	0(0%)	------

Chi-square test applied P=<0.05 level of significance

DISCUSSION

CBL is being used worldwide in medical schools to develop students' clinical skills and implement both the learning of basic and clinical sciences early on in their medical education. Active and engaging learning is crucial for students. A study on first-year MBBS student in the University of the West Indies, Cave Hill, Barbados highlighted that active and engaging Learning could be used as an effective tool for students.[7] The students of respective surgical department mostly agreed that CBL is an effective learning strategy with

48 (96%) Ophthalmology students, 47 (94%) ENT, and 47 (94%) Gynecology students responding with agreed on their respective questionnaire. That can demonstrate how CBL is an effective way of learning among the students, helping them develop an active and engaging learning strategy. The students also agreed that CBL helps in solving questions, particularly one best question with 46 (92%) Ophthalmology, 47 (94%) ENT, and 47 (94%) Gynecology students were agreed in their response. Another study conducted on 190 newly graduated nurses in Korea showed a statistically significant difference in those in CBL groups than those in a lecture-based group when it came to problem-solving ability[8]. This study, along with our findings shows that CBL is relevant when it comes to developing clinical problem-solving ability. Learning through CBL also boosted communication skills among medical students. 44 (88%) Ophthalmology, 44 (88%) ENT, 45 (90%) Gynecology students responded with agreeing on the questionnaire when it came to the point that did CBL boost up their communication skills or not. These communication skills are essential for physicians and surgeons to deliver clear and accurate information to their patients and attendees and their other colleagues and staff members to deliver the best total care. A study carried out on 150 MBBS students in NKP Salva Institute of Medical Sciences and Research Center (Nagpur, India) also showed that 79.2% of the students were in view that, small group discussion in CBL helped them in improving their communication skills (soft skills)[9]. It can be demonstrated that CBL can help develop communication skills among students that most of them might be lacking and that improvement in these skills will help them to become better clinicians. Students also responded confidently when asked if CBL helped in developing their learning abilities with 48 (96%) Ophthalmology, 46 (92%) ENT, and 46 (92%) Gynecology students were agreed. Furthermore, students were also in agreement when asked if the method is best for self-directed Learning, with 44 (88%) Ophthalmology, 45 (90%) ENT, and 45 (90%) gynecology students responding with agree. Similarly, another study carried out on 166 the second-year medical students showed that 125 (75.30%) students were in the opinion that CBL helped in improving their learning skills, and 135 (81.9%) students also agreed that it helped in promoting independent learning traits[10]. This shows us that CBL helps in developing not just learning abilities, but also promotes self-directed Learning. Self-directed Learning was found to be significantly different in another study that showed a difference in self-directed learning ability (F=4.75, P=0.32) between two groups of nurses, one who attended normal lessons along with CBL program (intervention group), and the other group that only continued normal lessons (Control group)[11]. Another study on sports science undergraduate students also saw that the CBL learning model improved the analytical thinking skills of sports sciences[12]. These traits are necessary during the rigorous course of MBBS as without these qualities, and students will find it hard to learn old and new things in the already long and exhausting medical curriculum. CBL helps to enhance these traits among students providing them with invaluable qualities required to succeed in medical school. CBL also proved to be an effective learning approach among other forms of Learning, with 41 (82%) Ophthalmology, 42 (84%) ENT, and 44 (88%) Gynecology students were showed major response towards agrees. A study was done in the department of biochemistry, Maulana Azad Medical College, New Delhi, India, in which 126 first-year students were divided into two groups. One group attended a class of PBL (group 1), whereas the other attended the class of CBL. An evaluation test showed that the marks obtained between the CBL and PBL groups were significantly different from those attending the CBL class and obtained a higher percentage of marks[13]. Some studies have shown that a combination of PBL and CBL learning is effective[14]. However, CBL is the more preferred choice of learning for students and is more preferred over other forms such as Lecture-based, PBL, and Task-Based Learning (TBL). One of the studies was conducted among resident of Ophthalmology at Shanghai Jiao Tong University Affiliated Sixth People's hospital, showed a statistical difference between lecture-based learned (LBL) and Case-Based Learning (CBL) method and students being more satisfied with the teaching combination along with paper review teaching method[15]. This result is very much in line with the results obtained in our study.

CONCLUSION

Case-Based Learning is a widely accepted form of learning in medical schools for students. It has helped develop critical thinking, self-directed learning, problem-solving skills, communication skills, and much more among students of medicine, which has allowed them to become much more comfortable with their field. That will help medical students become better clinicians in the future. Students prefer this method more than other forms of teaching, meaning that other institutes should solely focus more on CBL as it is the gold standard for students allowing the implementation of both basic and clinical sciences early on in their careers. Improvements can still be made in CBL to enhance students' learning ability, making it a much more powerful tool for students.

Author's Contribution:

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