https://doi.org/10.29309/TPMJ/2024.31.06.8023

The Professional Medical Journal
www.theprofesional.com
2024, Volume, 31 Issue, 06

ORIGINAL ARTICLE

Student perception of the effectiveness of online comprehensive patient care teaching (ComPaCT) tool.

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Article Citation: Zafar A, Danish KF, Malik S, Hameed F. Student perception of the effectiveness of online comprehensive patient care teaching (ComPaCT) tool. Professional Med J 2024; 31(06):999-1003. https://doi.org/10.29309/TPMJ/2024.31.06.8023

ABSTRACT… Objective: To identify students' perception of the effectiveness of the ComPaCT tool when delivered online. **Study Design:** Survey Questionnaire. **Setting:** Department of Surgery, Islamic International Medical College. **Period:** June 2020. **Methods:** A survey questionnaire was designed and distributed amongst final year students who had experienced ComPaCT both in a clinical setting and online. Likert scale responses were collected based on components of the ComPaCT tool with two open-ended questions on the strengths and weaknesses of the use of the tool online. **Results:** 89.7% of students agreed that they covered all aspects of patient care during the sessions. 74.4% thought that they could achieve adequate clinical skills based on these sessions. Although more than 80% of students rated the interaction with the tutor and the feedback as very useful only 64% felt confident that they could provide care to a patient after going through the online sessions. The main strength of the model was considered to be the use of teachers as simulated patients and the main weakness was the lack of actual patient-student interaction. **Conclusion:** The students perceived ComPaCT as an effective tool to learn holistic patient care online however it lacks authenticity of a real patient encounter.

Key words: ComPaCT Tool, COVID-19, Distance Learning, Education, Medical, Undergraduate.

INTRODUCTION

Comprehensive patient care teaching (ComPaCT) is a tool designed to develop clinical competencies in final year MBBS students for providing comprehensive care to a patient in a sequential manner. The tool is designed for both learning and assessment purposes and ensures that students practice the clinical skills needed to diagnose and manage patients in a systematic way. The model consists of 5 components. These are taking and narrating patient history, demonstrating examination and reasoning skills, discussion, patient and peer communication, and documentation. This tool is employed in clinical settings with actual patients, which provides a rich authentic context for all the components. However, during the COVID-19 period, clinical teaching was suspended onsite in our institution as well as in the rest of the world.[1] Like other teaching methodologies which were shifted online during the pandemic, this tool was also used to foster clinical skills online in a slightly modified form. The teacher acted as a simulated patient and gave history to the students. Instead of examination students were shown examination steps or findings in the form of pictures or videos, which they interpreted and articulated during the session. The rest of the components were executed creating an artificial clinical environment where the teacher continued to provide clues and students discussed the cases and made decisions.

Because of the limitations imposed by the absence of an authentic clinical environment and the inability to exercise certain components of the tool like performing a physical examination, it is not known how successful it was perceived by the students as a tool to foster clinical skills. The use and success of online teaching during COVID has given medical fraternity a very valuable experience which is likely to remain in use as an

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Article received on: 04/12/2023
Accepted for publication: 15/02/2024

adjunct to the traditional teaching for the times to come. Gauging student perception would help us identify which components of the tool can function as desired on the online platform and which require further modification to help improve teaching clinical skills online.

Therefore, we designed this study to identify final-year MBBS students' perception of the effectiveness of the ComPaCT tool when delivered online.

METHODS

The study was conducted in the department of surgery, Islamic International Medical College in August 2022 after approval from ethical committee (Riphah/IRC/22/2070/23.8.22). A survey questionnaire was designed based on the attributes of the ComPaCT tool already being used for clinical teaching in the department. The questionnaire gauged the perception of the students on a five-point Likert scale about the ability of the ComPaCT tool to foster learning holistic patient care, interprofessional learning, clinical and communication skills, and the ability of the tutor to interact and provide feedback, role model the process of patient care and promoting collaborative and peer assisted learning. Two open-ended questions on the main strengths and weaknesses of the tool were also asked to identify areas which were perceived by students as suitable or not suitable for online teaching or which required reinforcement in the clinical settings.

The questionnaire was distributed to all those students who had experienced ComPaCT during their surgery clerkship rotations online during COVID lockdown last year. The responses were collected and analyzed using google forms.

Percentages were calculated for Likert scale responses while thematic analysis was performed for the qualitative feedback provided by the students. An inductive approach was used to construct themes from the qualitative data supplied by the student comments.

RESULTS

A total of 50 final year students had an experience of online Compact sessions. Thirty nine students responded. 89.7% of students agreed that they covered all aspects of patient care during the sessions. 74.4% thought that they could achieve adequate clinical skills based on these sessions. Although more than 80% of students rated the interaction with the tutor and the feedback as very useful only 64% felt confident that they could provide care to a patient after going through the sessions (Table-I).

Covers all aspects of patient care	89.7%
I feel I can provide complete care	64.1%
Rich interaction with the clinical tutor	82.1%
Useful feedback was given by the tutor	82%
Clinical skill learning	74.4%
Can use the format for independent learning	69.2%
Engagement with multiple healthcare providers	66.6%
Role of teacher as a role model for communication with the patient	74.4%
Learning of Bedside ethics	69.2%
Can help fellow students to learn	61.5%
Engagement with tutor and patient	76.9%
Better prepared as a doctor	79.5%

Table-I. Student perception of the effectiveness of online ComPaCT

On analyzing the written responses on the strengths and weaknesses of ComPaCT following themes emerged from the data (Table-II).

DISCUSSION

The undergraduate medical students are to be prepared to fulfill their future responsibilities as family physicians or interns.[2] The professional activity of undergraduate medical students consists of an assemblage of patient-centered activities. Its essential elements are communication skills, physical examination skills, and medical documentation. The traditional long case during clinical years has been used to teach and reinforce these skills in students since a long time in medical education and still plays an important part in learning holistic patient care.[3] Although many other models on the lines of a long case already exist[4,5,6],

Theme	Sub-theme	Verbatim
Lack of authentic clinical environment	Inability to interact with/ examine actual patients	"Only weakness that it's online, still can't replace the *clinical* aspect the actual clinical work" "Examination portion lacks. (due to obvious limitations)" "Limited visual input during physical examination."
	Use of media for depicting clinical findings	"Online compact is difficult because we cannot see the original patients and it is difficult to interpret by just seeing the images"
Time intensive		"…its completely beneficial but demands more time like almost 2hrs per case only then it can be effective." "Sessions are too long and we lose focus"
Complete coverage of a topic/case	Completeness of the process	"We get to know how to proceed a specific scenario..." "Complete walkthrough, helpful"
	Thorough understanding	"Full case is discussed.. even follow through and the drugs currently used.. the patients usual presentation. Things not written in books are discussed" "It teaches how to approach our patient, increases patient interaction….. and get better understanding of our knowledge."
Student/ Teacher interaction	Engagement	"Teacher acting as a patient improves history taking"
	Feedback	"Good feedback from instructor"

Table-II. Thematic analysis of student perceptions on ComPaCT conducted online

The ComPaCT model was designed to incorporate all of these professional activities of future practitioners, as a learning tool that can be easily adapted for assessment purposes as well. It is different from the traditional long case and other forms of clinical skills learning in the sense that it follows concepts of holistic patient care by integrating patient assessment and management, including communication, procedural and documentation skills. All students participate throughout while being observed and are given feedback simultaneously.

The basic framework of the ComPaCT has been derived from the entrustable professional activities (EPAs) which were initially developed for postgraduate trainees[7,8] but later found wider application in health professionals' education.[9,10] However the ComPaCT model identifies the professional activities in the form of performance of the students or the material output in the form of written documents. The performance is observed in the form of communication skills, clinical examination skills, and procedural skills as related to the clinical case under discussion. Direct observation by the teacher and instant feedback validates the learning of students. The documents created by the students act as descriptors of the patterns of their future clinical practice. It is noteworthy that many of these skills can be performed and given a feedback upon in a simulated environment therefore most of the model is transferable to an online simulated environment which, although cannot replace an authentic clinical setting, but can replicate most of its components in constrained situations.

Plenty of data is available on online/ web based skills learning in health professions education and there is ample evidence that learning individual skills is not only possible but also augmented by using such an approach.[3,11,12] However, our study is unique in the sense that no previous study has published student feedback data on teaching holistic patient care activities after integrating all the secondary skills in a single case on an online platform. Another study similar to ours has published data after online implementation of a similar case based approach but the management

component of patient care was not included in the reported exercise and although it has reported high student satisfaction with this approach any more insight into strengths or weaknesses of the approach were not included.[11]

Constraints imposed by the COVID lockdown provided the world with an opportunity to test and compare the student perception about their learning in a simulated remote environment and several experiences were published which spanned from simple knowledge acquisition to complex skill acquisitions.[11,13] However, none of the studies gauged how well holistic patient care can be taught online. We attempted to gauge the effectiveness of an online platform in delivering the holistic patient care especially as perceived by the students.

Multiple studies have shown high satisfaction of students in understanding a given topic with a blended approach.[11,12,13,14] Our study confirms these findings and similarly projects that use of web-based medium can augment student understanding of the process of clinical care of a patient. Part of it is also due to the direct student teacher interaction that happens while using these platforms or media and the feedback provided to them during or after the performance. Feedback provided by the instructor has already shown to improve skills acquisition in the literature.[15]

Traditionally long case has been conducted to teach and assess holistic patient care to medical students in clinical environment and authenticity has been reported to be it's main advantage.[3] In our study too, lack of authenticity has been perceived by the students as the major disadvantage of online conduct of the model. Since most of the other studies have been about teaching isolated skills in a simulated environment, they have not looked into this aspect of skills learning. However, all of them do report high student satisfaction rate as regards knowledge acquisition after the exercise.[11,12,13,14] In our study also the model was well accepted by the students and was found suitable for online teaching with a few reservations on the ability to learn and confidence to perform the skills on real patients.

Despite this high satisfaction an issue highlighted in our study which relates to the issue of authenticity is that pictures or videos are not as good as real patients to pick up physical findings. This issue has not been highlighted in any of the other studies mainly because none of the studies has analyzed student perspective on online skill acquisition. Although several studies have analyzed skill performance by the students after the sessions and found it as good as after face to face sessions.[11,14] None of them relate to how good students pick up physical findings on a patient. This factor needs to be analyzed in further detail in future studies because it isn't clear if accurate performance of a skill translates into accurate identification of a physical sign on a patient which is directly linked to an accurate diagnosis and management.

The time length needed to perform a long case makes it an intensive exercise. On a web based medium it becomes even lengthier because all the prompts have to be provided by the facilitator. This is another drawback of the exercise since it means students losing focus during the sessions. The clinical case therefore needs to be divided into multiple sessions making it even more time consuming on a web based medium.

CONCLUSION

The students perceived ComPaCT as an effective tool to learn holistic patient care online however it lacks authenticity of a real patient encounter.

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2	Khalid Farooq Danish	Material and methods.	
3	Sara Malik	Assisted in data collection.	
4	Fahad Hameed	Data collection and proof reading.