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ORIGINAL ARTICLE

Student-Doctor Method for Clinical Training Among Phase III Part II MBBS Students

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Abstract

Introduction: The Student–Doctor method, recommended by the National Medical Commission (NMC) under the Competency-Based Medical Education (CBME) curriculum, aims to bridge the gap between theoretical learning and practical clinical exposure. It provides medical students with longitudinal patient care experiences and fosters active participation in diagnosis, treatment, and patient communication. This study evaluated the feasibility and effectiveness of implementing the Student–Doctor method among Phase III Part II MBBS students in the Department of General Medicine at a medical college in Coimbatore. **Materials and Methods:** A mixed-methods study was conducted among 60 final-year MBBS students posted in General Medicine. Students were divided equally into five units and underwent a pre-test consisting of 25 multiple-choice questions (MCQs) via Google Forms. Cases were allotted for longitudinal follow-up under faculty supervision, following the Student–Doctor model. After a one-week clerkship experience, students presented their cases, and a post-test along with structured feedback questionnaires was administered. Quantitative data were analyzed using SPSS version 27, employing paired t-tests for pre- and post-test comparisons, while qualitative feedback was subjected to thematic content analysis. **Results:** The results demonstrated a statistically significant improvement in clinical knowledge. The mean pre-test score in the May batch increased from 16.3 to 20.26, and in the June batch from 17.13 to 21.26, with p-values <0.001 in both groups. Student feedback was highly positive, with the majority rating the teaching quality, faculty support, communication opportunities, and patient engagement as excellent or very good. **Conclusion:** The Student–Doctor method proved to be an effective and feasible model for clinical training, significantly enhancing clinical competencies and receiving favorable acceptance from students. This approach aligns with CBME goals and strengthens the development of patient-centered, competent future physicians.

Keywords: Student–Doctor method, clinical clerkship, competency-based medical education, longitudinal learning, medical education

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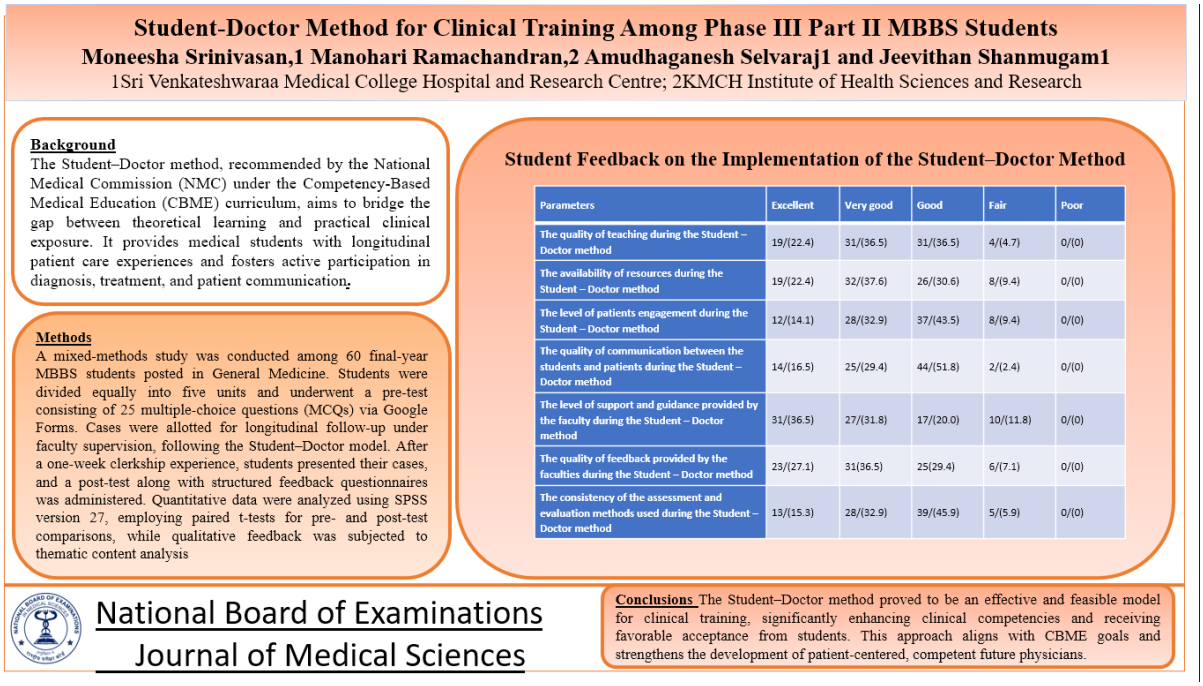
Graphical Abstract



Introduction

Clinical postings are a critical phase of medical education, bridging the gap between theoretical knowledge and real-world patient care. However, current clinical postings face several challenges that hinder optimal learning. A major issue is the lack of continuity in patient care: students often encounter patients briefly without following them through the full course of illness and recovery. Overcrowded teaching hospitals, time constraints, and fragmented teaching methods further limit meaningful patient interactions, preventing students from effectively integrating clinical skills with theoretical knowledge [1,2].

To address these limitations, the National Medical Commission (NMC) introduced the *Student-Doctor Method as part of the Competency-Based Medical Education* (CBME) curriculum reforms in India [1,2]. This method promotes active, longitudinal participation of students in patient care. In the Student-Doctor model, students are assigned to patients for extended periods, allowing them to witness the course of illness, management, and recovery. They work as part of the healthcare team under the supervision of faculty members, enhancing their hands-on clinical skills, communication abilities, decision-making, and professionalism [3–5]. Exposure to direct patient care and team-based learning is vital in preparing students for the dynamic, patient-centered demands of the 21st-century healthcare system [5].

Previous research supports the effectiveness of longitudinal clinical experiences. Cleland et al. emphasized that continuous patient engagement during clinical postings is highly valued by undergraduate students and improves their workplace learning experiences [3]. Teo, in a systematic review of medical education practices in Japan, observed that clerkships that promote active student participation strengthen clinical reasoning and professional development [4]. Gonzalo et

al. highlighted that integrating basic, clinical, and systems sciences in real clinical settings fosters interdependent learning and better prepares students for modern healthcare challenges [5]. Furthermore, Passi et al. stressed the importance of role modeling in clinical settings, showing that students benefit from close mentorship and observing professional behavior firsthand [6]. Dornan et al. described Experience-Based Learning (ExBL) during clerkships as crucial for the development of clinical competence and identity formation in medical students [7].

Despite the recognized benefits, limited research has specifically evaluated the *implementation challenges, student perceptions, and measurable outcomes* of the Student-Doctor Method in the Indian context, especially from both student and faculty perspectives. Understanding these aspects is essential to ensure effective execution and maximize the educational benefit of this approach.

Hence This study was planned to evaluate the efficacy of the Student-Doctor Method among Phase III Part II MBBS students posted in enhancement of clinical competencies at a tertiary care medical college in Western Tamilnadu.

Materials and Methods

The study was conducted in the Department of General Medicine at a Tertiary care Medical College in Western Tamil Nadu, India. A mixed-methods approach combining both quantitative and qualitative methodology was adopted. Phase III Part II MBBS students who were posted in the General Medicine department during the study period were recruited for the study. A total of 60 students were enrolled. Two batch of clinical batch students were included in the study. Institutional Ethics Committee approval was obtained before the commencement of the study, and written informed consent was obtained after explaining the need for the study, ethics involved and the rights of the participant from all participants before the start of the study.

As a routing, students were randomly divided into five groups corresponding to the five clinical units within the department. On Day 1, a pre-test consisting of 25 multiple-choice questions (MCQs) was conducted using Google Forms to assess their baseline clinical knowledge. Following the pre-test, students were assigned specific cases by the Assistant Professors and Senior Residents in their respective units for their evening clerkship apart from the routine sessions. The Student-Doctor method of learning was implemented and the students were asked to follow assigned patients longitudinally from admission to discharge. Case follow-up was performed during post-class hours in the evenings, and daily discussions with the supervising faculty which ensured ongoing guidance. Students were requested to maintain logbooks and document the patient progress and enter the clinical observations and experiences and faculty reviewed the same regularly.

After a week of longitudinal case follow-up, each Monday during the initial hour of clinical posting, students presented their cases before all faculty members. These case discussions aimed to consolidate theoretical knowledge with practical clinical experiences. Care was taken to ensure that all students were allotted cases of similar patterns and complexity to maintain uniformity across groups. On the last day of the posting, a

structured post-test was conducted using Google Forms, along with a structured feedback. A questionnaire was designed to capture students' perceptions on the Student-Doctor method of teaching. Feedback from the faculty regarding the feasibility and challenges of implementing this method was also obtained.

The data collected were coded into Microsoft Excel and analysed using SPSS version 27. Quantitative variables such as pre-test and post-test scores were summarized using mean and standard deviation (SD). The paired t-test was used to compare the pre-test and post-test scores, and a p-value of less than 0.05 was considered statistically significant. Qualitative data obtained from student and faculty feedback were analyzed using thematic content analysis to identify key themes and perceptions related to the Student-Doctor learning experience.

Results:

The feedback from students regarding the implementation of the Student–Doctor method was predominantly positive across all assessed parameters. In terms of the quality of teaching, a majority of students rated it as either excellent (22.4%) or very good (36.5%), with only 4% marking it as fair and none rating it poorly, indicating a high level of satisfaction with faculty teaching during the clerkship. The availability of resources was similarly well-rated, with 22.4% rating it excellent and 37.6% rating it very good, although 9.4% of students felt it was only fair, suggesting that resource allocation could be further optimized. Patient engagement during the Student–Doctor method was considered good by 43.5% of the students and very good by 32.9%, but a small proportion (9.4%) rated it as fair, highlighting a minor area for improvement in fostering active patient involvement.

Communication between students and patients received particularly strong feedback, with over half the students (51.8%) rating it as good and an additional 29.4% as very good, reflecting effective development of communication skills through this method. The support and guidance provided by the faculty were perceived very positively, with 36.5% rating it excellent and 31.8% as very good, although 11.8% rated it fair, indicating that consistency in faculty mentoring could be further strengthened. The quality of feedback provided by faculty was also rated favorably, with 27.1% of students rating it excellent and 36.5% very good, while only 7.1% rated it fair. The consistency of assessment and evaluation methods was well appreciated, with nearly half the students (45.9%) rating it as good, 32.9% as very good, and only 5.9% feeling it was fair. Importantly, no parameter received any poor ratings across the board. Overall, the findings suggest that the Student–Doctor method was effectively implemented, with high levels of student satisfaction in teaching quality, patient engagement, faculty support, and feedback processes, while also identifying minor areas where further enhancements could be made (Table 1).

Table 1. Student Feedback on the Implementation of the Student–Doctor Method Across Key Educational Parameters

Parameters	**Excellent**	**Very good**	**Good**	**Fair**	**Poor**
The quality of teaching during the Student – Doctor method	19/(22.4)	31/(36.5)	31/(36.5)	4/(4.7)	0/(0)
The availability of resources during the Student – Doctor method	19/(22.4)	32/(37.6)	26/(30.6)	8/(9.4)	0/(0)
The level of patients engagement during the Student – Doctor method	12/(14.1)	28/(32.9)	37/(43.5)	8/(9.4)	0/(0)
The quality of communication between the students and patients during the Student – Doctor method	14/(16.5)	25/(29.4)	44/(51.8)	2/(2.4)	0/(0)
The level of support and guidance provided by the faculty during the Student – Doctor method	31/(36.5)	27/(31.8)	17/(20.0)	10/(11.8)	0/(0)
The quality of feedback provided by the faculties during the Student – Doctor method	23/(27.1)	31(36.5)	25(29.4)	6/(7.1)	0/(0)
The consistency of the assessment and evaluation methods used during the Student – Doctor method	13/(15.3)	28/(32.9)	39/(45.9)	5/(5.9)	0/(0)

The comparison of pre-test and post-test scores among students who underwent the Student–Doctor method revealed a statistically significant improvement in clinical knowledge. In the May batch, the mean pre-test score observed was 16.3 (SD=1.24), which improved to a mean post-test score of 20.26 (SD=1.18). The mean difference was 3.96, with a t-value of -12.671 and a p-value of <0.001, indicating a highly significant improvement. Similarly, in the June batch, the mean pre-test score was 17.13 (SD=1.84), which rose to 21.26 (SD=0.98) in the post-test, with a mean difference of 4.13, a t-value of -10.851, and a p-value of <0.001 (Table 2).

Table 2: Comparison of Pre-Test and Post-Test Scores Among Students Undergoing the Student–Doctor Method

PARAMETERS	PRE TEST		POST TEST		MD	t Value	P Value
	M	SD	M	SD			
MAY	16.3	1.24	20.26	1.18	3.96	-12.671	<0.001
JUNE	17.13	1.84	21.26	0.98	4.13	-10.851	<0.001

Discussion

In terms of academic performance and student satisfaction, the findings demonstrated significant improvements in clinical knowledge. There was a notable increase in post-test scores compared to pre-test scores. The scored indicated the effectiveness of longitudinal patient engagement in enhancing clinical competencies.

Feedback analysis revealed that the quality of teaching, availability of resources, and faculty support were highly rated by the students. This aligns with previous literature emphasizing the role of structured clinical learning environments in promoting competency-based education [1,2]. The high ratings for patient engagement and communication skills reflect the success of the Student–Doctor method in fostering active student participation, improving clinical reasoning, and enhancing patient-centered communication skills, as highlighted by Dornan et al. in their experience-based learning model [7].

The students' perception of the consistency of assessment methods and feedback mechanisms was largely positive. Effective feedback is a cornerstone of clinical education, helping students refine their skills and professional behavior, a finding consistent with prior research by Passi et al., who emphasized the value of timely and structured feedback in medical training [6]. The role of faculty as role models and mentors was evident in this study, where supportive and continuous guidance significantly contributed to students' positive experiences, as previously noted by Gonzalo et al. in the context of interdependent learning frameworks in clinical education [5].

Despite the overall positive outcomes, some students rated the availability of resources and patient engagement as fair, highlighting a need for further efforts to ensure optimal resource allocation and enhanced patient participation. Similar results were identified by Cleland et al., who noted that inconsistencies in the clinical exposure and patient load impacted student experiences during their clerkships [3]. Furthermore, a structured weekly presentations and regular logbook maintenance promoted accountability and reflective learning among the students, for its role in reinforcing clinical reasoning through active participation [5].

Globally, the paradigm shift toward longitudinal clinical clerkships is supported by evidences from Japan and other countries, where the integration of community-based and hospital-based learning has shown a positive impact on clinical competencies and professional development [4]. Our study findings also resonate with the observations made by Teo et al., who reported that a structured clerkship experience improves clinical confidence and practical skills among undergraduate medical graduates [4].

This significant improvement observed between pre-test and post-test scores highlights the importance of the structured Student–Doctor method in enhancing clinical knowledge and skills among medical students. Overall the post-test scores was significantly higher than the pre-test scores. These findings were consistent with the goals of the Competency-Based Medical Education (CBME), as directed by the National Medical Commission which emphasizes active, longitudinal learning experiences that integrates clinical reasoning and patient-centered care [1,2]. Similar improvements in clinical competency following structured clerkship program has been reported in earlier studies also where in students exposed to longitudinal patient care demonstrated better clinical understanding and diagnostic abilities [4,7]. Greater patient engagement, faculty mentorship, and continuity of care play crucial roles in promoting deeper clinical learning and knowledge retention [3,5].

The Student–Doctor method of teaching provided students with a more holistic, continuous, and patient-centered learning experience compared to traditional fragmented postings [1,2].

Conclusions

The implementation of the Student-Doctor learning method among Phase III part II MBBS students has proved to be highly effective in enhancing their clinical skills and overall learning experience. The hands-on clinical training, continuous patient care exposure, and enhanced communication skills developed through regular patient follow-up in the Student–Doctor learning method significantly contribute in shaping students into competent, skilled, and compassionate healthcare professionals.

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Statements and Declarations

Conflicts of interest

The authors declare that they do not have conflict of interest.

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