



Implementation of One-Minute Preceptor for Clinical Teaching in Obstetrics and Gynaecology

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Abstract

Background In absence of a dedicated teaching curriculum for non-PG residents in Obstetrics and Gynecology department, a concise teaching learning method, One-Minute Preceptor (OMP) with feedback being its core component may be introduced to translate their theoretical knowledge into clinical practice.

Methods This descriptive cross-sectional study included four faculty members and 20 residents. Each resident was exposed to three OMP sessions pertaining to common gynecological case scenarios with a gap of at least two days in between the sessions with faculties acting as preceptor and as observer. After three OMP sessions, feedback from residents and faculty regarding their teaching and learning experience after implementing this tool was obtained through separate pre-validated questionnaires graded on Likert's scale.

Results The satisfaction index of the residents and faculties for OMP was found to be 96.3% and 95%, respectively. All residents and faculty members had consensus that OMP addressed the learning gaps (mean score 4.45 ± 0.51 and mean score 4.5 ± 0.57 , respectively) and expressed being highly satisfied with OMP in busy clinical settings as compared to traditional method of teaching with mean score of 4.9 ± 0.30 and 4.75 ± 0.5 , respectively. The faculties had consensus that OMP can assess all domains of learning (mean score 4.75 ± 0.5). All residents and faculties opined that the time allotted to address all micro-skills was less and 60% residents advocated allotting at least 5 min time to the teaching encounter.

Conclusion Our study indicates the beneficial role of OMP in time-constraint clinical environment and warrants further research to review the time frame keeping in view the learners' needs and the discipline.

Keywords OMP · One-minute preceptor · Non-PG residents · Obstetrics and Gynaecology · Teaching-learning method

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Introduction

Competency-based medical education (CBME) coming into effect from 2019 is a welcome long-awaited landmark in undergraduate (UG) medical education in India. This program aims to create an 'Indian Medical Graduate' (IMG) possessing the requisite KSAC domains i.e., Knowledge, Skill, Attitude and Communication, so that the outcome is the physician of first contact [1]. Similarly Postgraduate curricula have also been revised. These new competency-based curricula, advocating utilizing different active teaching learning methods (TLM) to achieve the above-mentioned skills are likely to benefit henceforth undergraduate and postgraduate (PG) medical students. However, lack of time and traditional teaching methods may not have encouraged inculcation of these essential qualities among the non-PG residents who are struggling to translate theoretical

knowledge into clinical skills. Also, exclusive teaching programs for them are limited.

The traditional clinical teaching encounter takes on an average 5–8 min including case presentation by learner (half of time), questioning by the preceptor (one-fourth) and discussion (rest of time) i.e., three-fourth of the interaction time is dedicated to patient care issues rather than learner issues with practically no time being left for invoking thought process in the learner and giving feedback, thereby questioning to its relevance as a teaching tool especially in busy clinical branches (Fig. 1) [2].

Emergency departments like Obstetrics and Gynecology struggle to allocate sufficient time for implementing innovative clinical teaching methodologies. To address this need, learner centered educational tool- Five Step Micro Skill Model also known as one-minute preceptor (OMP) was introduced in 1992 [3]. This tool focuses to make most of the time spent in actual discussion to optimize the teaching. Being time-sensitive tool, it soon became popular with many busy subjects. OMP originally included five micro-skills with addition of sixth micro skill later on; the first two deal with cognitive domain while next three deal with feedback and last deals with self-directed learning (SDL) (Fig. 1) [4, 5]. Its efficacy has been evaluated with varied results [6–8].

In absence of dedicated teaching programs for non-PG residents, we proposed to use OMP to evaluate its role in enhancing their skills. This project was also planned in view of the fact that most of the studies on OMP have been done in the West and there is a scarcity of evidence on its use in non-PG resident teaching in the Indian context.

This educational research project was designed with the aim to evaluate the effectiveness of OMP as a teaching method for non-PG residents and to implement it in routine clinical teaching in busy clinical branches like Obstetrics and Gynecology, if found effective.

Objectives were to introduce OMP as teaching tool in Obstetrics and Gynecology department and to analyze the perception of faculty and residents about the OMP as an effective TLM.

Materials and Methods

Study Design

This descriptive cross-sectional study was conducted in the department of Obstetrics and Gynecology after obtaining ethical clearance (GIMS/IEC/HR/2021/08).

Study Participants

Twenty non-PG residents posted in the department of Obstetrics and Gynecology on rotational basis with no previous OMP exposure were included in the study via convenient non-probability sampling technique after their consent. Four faculty members who consented and were available for the study were included.

Faculty and non-PG residents were sensitized to OMP via interactive session using power point presentation and video presentation. Then the module was prepared with selection

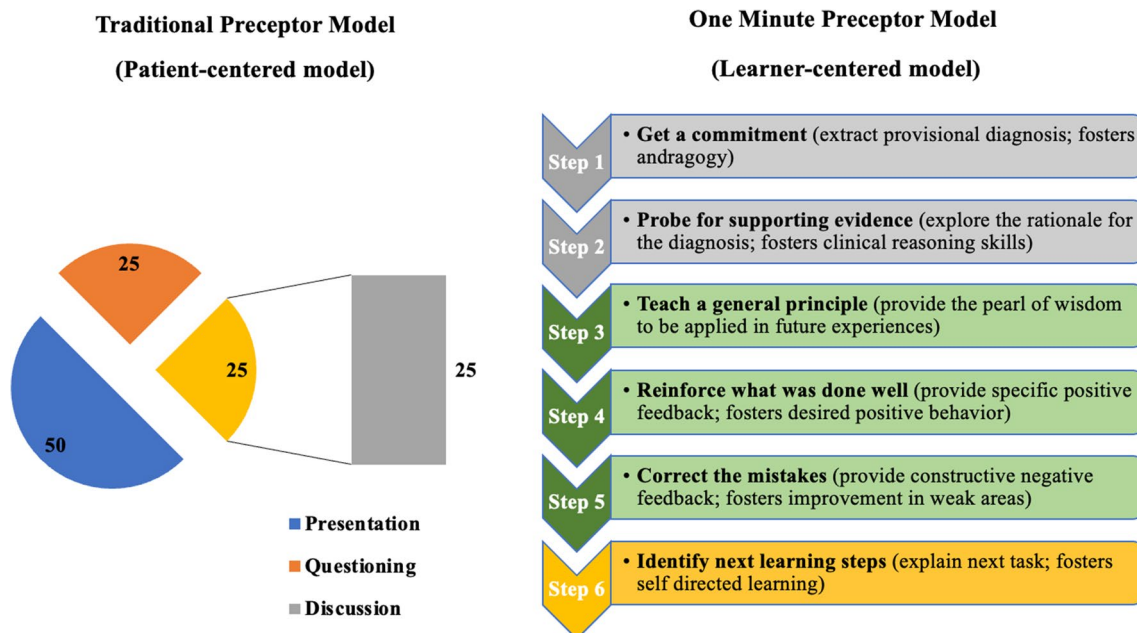


Fig. 1 Traditional preceptor model and One-minute preceptor model

of common Gynecology cases e.g., Abnormal Uterine Bleeding (AUB), vaginal discharge and uterovaginal prolapse. This was followed by charting out a schedule for OMP sessions and allotting the role of preceptor and observer to the faculty. Each non-PG resident was exposed to three OMP sessions with a gap of at least two days in between the sessions. In each session, residents were instructed to obtain relevant history and perform pertinent examination quickly reaching the logical provisional diagnosis by effective reasoning. For students these competencies have been placed under core competencies with domain addressed being “Knowledge and Skill” and level required being “Show how”. But for non-PG residents, expected to be competent IMG, we addressed all domains i.e., “Knowledge, Skill, Attitude and Communication” and level addressed was “Does/Perform” in accordance with Dreyfus model of skill acquisition. In each session one of the faculties was preceptor and one was observer. After three OMP sessions, feedback from non-PG residents and faculty regarding their teaching and learning experience after implementing this tool was obtained through pre-validated 13-item questionnaire and 11-item questionnaire, respectively. The feedback questionnaire for faculty and residents contained all closed-ended questions graded on Likert’s scale (1-Strongly disagree, 2- disagree, 3-not sure, 4- agree, 5- strongly agree) except one open-ended question in each. The open-ended question pertained to the suggested time frame for OMP. The questionnaire for residents and faculty contained questions on three themes: perception on teaching efficacy of OMP (8 and 6 questions, respectively); perception on feedback provided (3 and 2 questions, respectively); and perception on the time frame (2 and 3 questions, respectively). The validation of questionnaire was done by experts.

The categorical variables were summarized using percentages and frequencies and continuous data were analyzed using mean (standard deviation) and median (range). Data were analyzed by using SPSS version 21(Fig. 2).

Results

Among 20 non-PG residents, 18 were females, and 2 were males. All faculty members were females.

Perception of Non-PG Residents for One-Minute Preceptor

The satisfaction index of the non-PG residents for OMP was found to be 96.3%. While majority (80%) of the residents felt that OMP improved their interaction with the teachers, 20% were not sure of the same. All residents perceived that OMP has improved their clinical reasoning and analytical skills; and inculcated the habit to reach the

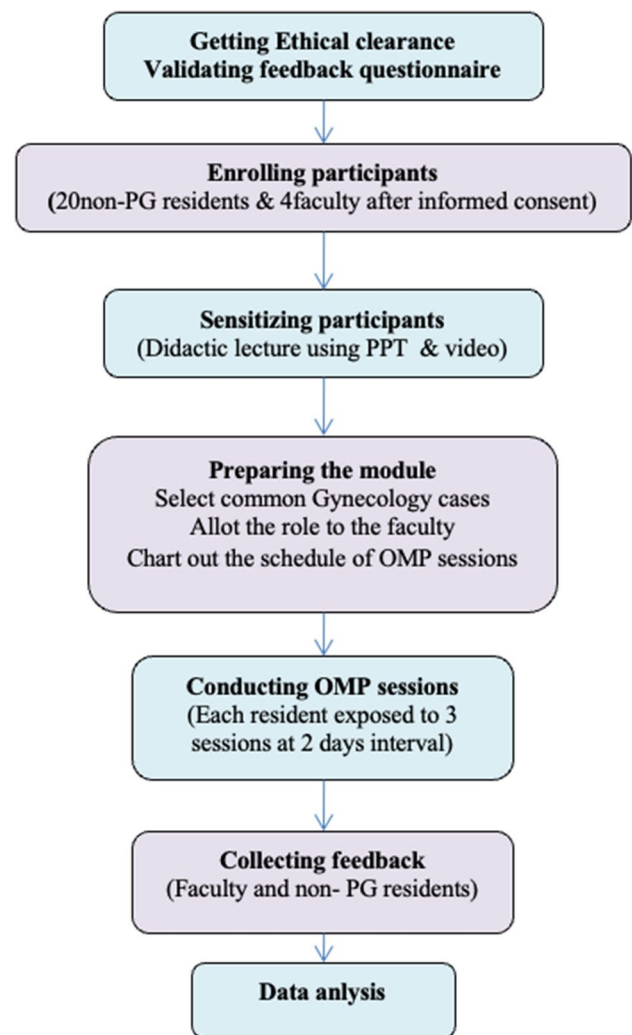


Fig. 2 Flow chart of Study design

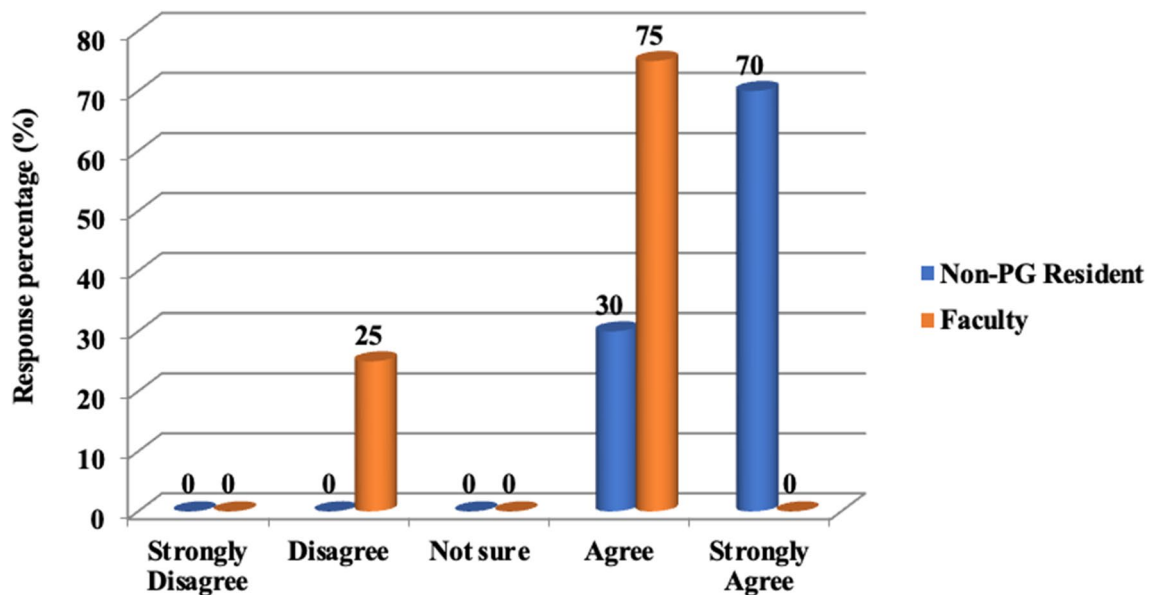
diagnosis by effective reasoning. Almost all of them (95%) believed that their presentation skills had improved and they feel more confident in managing common Gynecology cases after the sessions. Though 20% residents were not sure that they received relevant knowledge during OMP sessions; 90% residents were highly satisfied with OMP in busy clinical settings as compared to traditional method of teaching with mean score of 4.9 ± 0.30 . All advocated to include OMP as a part of regular clinical teaching in Obstetrics and Gynecology department.

All residents perceived that their learning gaps were identified and well addressed; 75% strongly attributing this to the feedback provided during the sessions which as per all directed them to study and rectify the mistakes (Table 1).

It is worth mentioning that all residents opined that the time allotted to address all micro-skills was less, the mean score being 4.7 ± 0.47 ; and 60% advocated allotting at least 5 min time to the teaching encounter (Fig. 3 and Fig. 4).

Table 1 Perception of non-PG residents for OMP in Obstetrics and Gynecology clinical teaching

S.No	Statement	Response on Likert's Scale (N=20)					Mean score \pm SD
		1 (Strongly disagree) N (%)	2 (Disagree) N (%)	3 (Not sure) N (%)	4 (Agree) N (%)	5 (Strongly agree) N (%)	
1	OMP improved student teacher interaction	0 (0)	0 (0)	4 (20)	9 (45)	7 (35)	4.15 \pm 0.74
2	OMP has improved my presentation skills	0 (0)	0 (0)	1 (5)	11 (55)	8 (40)	4.35 \pm 0.58
3	OMP has inculcated the habit to reach to the provisional diagnosis	0 (0)	0 (0)	0 (0)	9 (45)	11 (55)	4.55 \pm 0.51
4	OMP helped to improve clinical reasoning and analytical skills	0 (0)	0 (0)	0 (0)	10 (50)	10 (50)	4.5 \pm 0.51
5	OMP increased my confidence in managing common gynecological cases	0 (0)	0 (0)	0 (0)	10 (50)	10 (50)	4.5 \pm 0.51
6	Relevant knowledge is delivered in OMP teaching	0 (0)	0 (0)	4 (20)	15 (75)	1 (5)	3.85 \pm 0.49
7	Residents are more satisfied with OMP in busy clinical settings compared to traditional method	0 (0)	0 (0)	0 (0)	2 (10)	18 (90)	4.9 \pm 0.30
8	OMP should be a part of regular clinical teaching in Obstetrics and Gynecology department	0 (0)	0 (0)	0 (0)	8 (40)	12 (60)	4.6 \pm 0.50
9	Feedback during OMP sessions was very useful	0 (0)	0 (0)	0 (0)	5 (25)	15 (75)	4.75 \pm 0.44
10	OMP helped to identify and address specific learning gaps	0 (0)	0 (0)	0 (0)	11 (55)	9 (45)	4.45 \pm 0.51
11	OMP motivated me to study and rectify mistakes (SDL)	0 (0)	0 (0)	0 (0)	15 (75)	5 (25)	4.25 \pm 0.44
12	Time allotted to address all micro-skills of OMP teaching was less	0 (0)	0 (0)	0 (0)	6 (30)	14 (70)	4.7 \pm 0.47
13	If you feel scarcity of time, what is the time frame suggested by you	Median (range): 5 (3–5)					

**Fig. 3** Perception of non-PG residents and faculty (%) on the shortage of allocated time to address all micro-skills of OMP

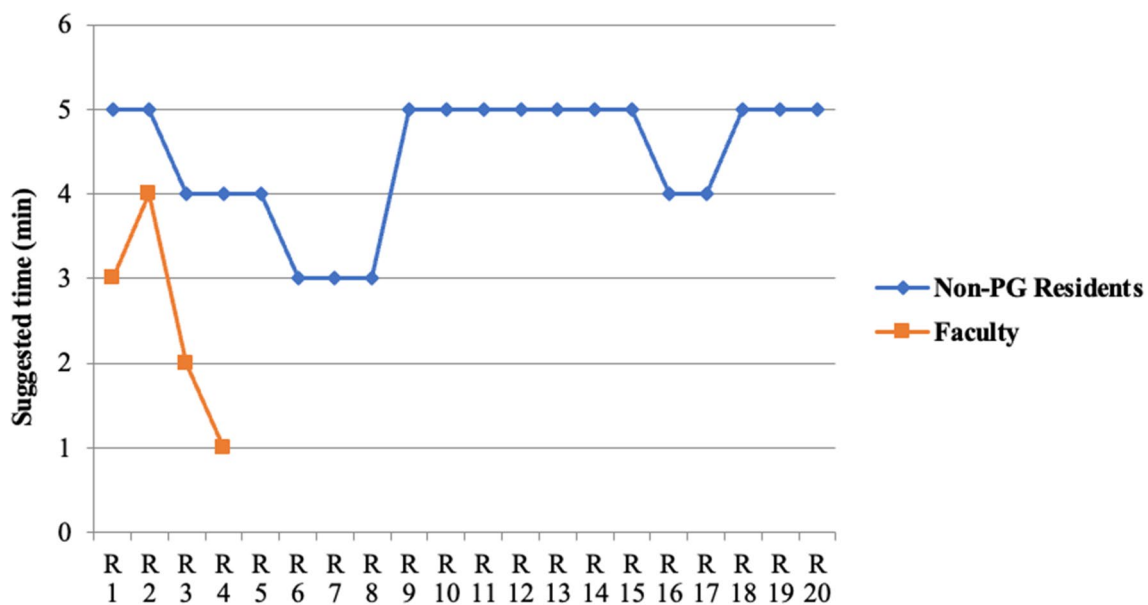


Fig. 4 Suggested time frames (in minutes) to address the micro-skills of OMP by non-PG residents ($N=20$) and faculty ($n=4$) (R, Response)

Perception of Faculty for One-Minute Preceptor

The satisfaction index of the faculty for OMP was found to be 95%. All faculty members were of the view that OMP improved student–teacher interaction. Though three faculty members (75%) perceived that OMP improved clinical reasoning skills of students, one faculty member (25%) was not sure of the same. However, all felt that the overall performance of residents was improved after its introduction. Faculty was also more satisfied with OMP in busy clinical settings as compared to traditional method; the mean score being 4.75 ± 0.5 . There was a consensus among the faculty that OMP should be a part of regular clinical teaching in Obstetrics and Gynecology department.

Further as an educational tool, all faculty had consensus on the fact that using OMP they can assess all domains of learning (mean score 4.75 ± 0.5) and can recognize and address specific learning gaps via immediate feedback which is its most useful component (mean score 4.5 ± 0.57) (Table 2).

Further OMP was perceived as a well-structured time-sensitive tool by faculty. Although three (75%) faculty members felt that the time allotted to address all micro-skills of OMP teaching was less yet they suggested 2 to 4 min time only. One (25%) faculty member didn't want any change in the time allotted (Figs. 3 and 4).

Overall, the tool was well accepted by the faculty and residents alike for efficacy and feedback except the shortage of time which was stated as the prime limitation for the methodology.

Discussion

The results have been discussed under three themes: perception on its teaching efficacy; perception on feedback provided; and perception on the time frame.

Perception on Teaching Efficacy

In our study, the satisfaction index of the residents and faculties for OMP was found to be 96.3% and 95%, respectively. All residents and faculty expressed their satisfaction with OMP over traditional method (mean scores 4.9 ± 0.30 and 4.75 ± 0.5 , respectively) and advocated including it in routine clinical teaching. Previous studies confirm its efficacy with some supporting replacing traditional clinical teaching with OMP [6, 9]; while some advocated its incorporation to supplement traditional case presentation [7, 10].

In our study all faculty members agreed that all domains of learning can be assessed via OMP and all perceived its role in improving the performance of students. The similar perceptions were mentioned in other studies as well [9]. Other studies have also registered that OMP enhances clinical reasoning skills [7, 9]. In our study though 75% faculty perceived that OMP improved clinical reasoning skills of non-PG residents, 25% was not sure of the same; also, 20% residents were not sure about the improvement in teacher–resident interaction. This may be due to short exposure to OMP sessions in this study.

In our study, 20% residents were not sure of receiving relevant information during OMP sessions. This may have

Table 2 Perception of faculty for OMP in Obstetrics and Gynecology clinical teaching

S.No	Statement	Response on Likert's Scale (N=4)					Mean score \pm SD
		1 (Strongly disagree) N (%)	2 (Disagree) N (%)	3 (Not sure) N (%)	4 (Agree) N (%)	5 (Strongly agree) N (%)	
1	OMP improved student teacher interaction	0 (0)	0 (0)	0 (0)	2 (50)	2 (50)	4.5 \pm 0.57
2	OMP improved clinical reasoning skills of residents	0 (0)	0 (0)	1 (25)	2 (50)	1 (25)	4.0 \pm 0.8
3	Preceptor can assess all domains using OMP KSAC (Knowledge, Skills, Attitudes, Communication)	0 (0)	0 (0)	0 (0)	1 (25)	3 (75)	4.75 \pm 0.5
4	OMP improves overall performance of residents	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	4.0 \pm 0.00
5	Preceptors are more satisfied with OMP in busy clinical settings as compared to traditional method	0 (0)	0 (0)	0 (0)	1 (25)	3 (75)	4.75 \pm 0.5
6	OMP should be a part of regular clinical teaching in Obstetrics and Gynecology department	0 (0)	0 (0)	0 (0)	0	4 (100)	5.0 \pm 0.00
7	OMP helps to recognize and address specific learning gaps of residents	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	4.0 \pm 0.00
8	Feedback during OMP sessions was very useful	0 (0)	0 (0)	0 (0)	2 (50)	2 (50)	4.5 \pm 0.57
9	OMP is well-structured time-sensitive tool	0 (0)	0 (0)	0 (0)	1 (25)	3 (75)	4.75 \pm 0.5
10	Time allotted to address all micro-skills of OMP teaching was less	0 (0)	1 (25)	0 (0)	3 (75)	0 (0)	3.5 \pm 1.00
11	If you feel scarcity of time, what is the time frame suggested by you	Median (range): 2.5 (1–4)					

resulted due to the recent implementation of this tool by the faculty with the case discussions having a tendency to run off topic. This implies that a sustained effort and not one-time OMP workshop for faculty members will be required to improve clinical teaching. Our view is based on the results of a study from National Dental Centre Singapore where residents rated no change in quantity as well as quality of clinical teaching after single workshop on OMP (76.5%, $p=0.480$ and 61.8%, $p=0.134$, respectively) [8]. Sustained exposure to OMP also increases the ability of preceptors to correctly diagnose patients' medical problems and improves self-confidence in rating students [11].

OMP was perceived as a well-structured time-sensitive tool by faculty in our study. This is in line with the best practice recommendations provided for busy pharmacy preceptors where considering time scarcity as an important barrier to perception, OMP was unanimously recognized as more time-efficient tool than the subjective-objective-assessment-plan (SOAP) [12].

Though in our study OMP was well accepted in Obstetrics and Gynecology department, in other studies it has been received variedly in different specialties. In a comparative analytical study, the family medicine residents were reported to be more familiar (55 vs. 25%) and significantly more confident than psychiatry residents ($p < 0.01$) [13]. Thus the results from one department specific study cannot be generalized.

Perception on Feedback

All non-PG residents and faculty in our study perceived that OMP is an important educational tool with ability to identify and address the learning gaps, attributing this to the immediate feedback provided during the sessions which inculcates self-directed learning. This is in consensus with earlier studies where faculty members acknowledged that OMP helped them to address weak areas of residents; and residents valued the beneficial key points and timely feedback provided through OMP [7, 9, 10, 12]. The observations recorded by different studies vary with regard to the micro-skill that reflected maximum improvement. In a survey the residents perceived a significant improvement ($p=0.035$) in the micro-skill "Teaching general rules" which was also rated as the most important micro-skill both pre and post faculty workshop on OMP (35.3% and 38.2%, respectively) [8]. On the contrary in a randomized control trial the residents revealed significant improvement in all micro-skills except "teaching general rule" [14]. In another study conducted with the aim to evaluate training of health professionals who teach nurse practitioner students using OMP, the authors reported statistically significant increase in intended use of positive and corrective feedback [15]. A systematic review on OMP use for nurse practitioners, including 12 experimental quantitative studies in analysis and 20 descriptive studies in discussion, concluded that available literature supports the efficacy of OMP clinical teaching model

which has the potential to improve feedback and clinical reasoning skills [16].

Perception on the Time Frame

Shortage of time allotted to address all micro-skills of OMP teaching was identified by all the non-PG residents in our study. Although 75% faculty members also shared similar view, 25% didn't want any change in the time allotted. While the faculty suggested 1–4 min time for the teaching encounter, 60% of residents suggested increasing the time to at least 5 min. Our findings corroborate with previous study where though 53.8% residents felt shortage of time allotted to OMP, only one faculty member (16.6%) had the same perception [7]. This may be due to already overworked clinical faculty.

We favor scheduling the time frame of OMP depending on learner's needs and the target case. In the initial model introduced by Neher JO et al. in 1992 [3], the time allotted for clinical encounter was 5 min or less which later got limited to one minute. The model was modified and renamed in 2011 by Bott G et al. [17] as 5-min preceptor realizing different needs of nursing students who require at least 5 min for the encounter. Later in 2015 Hu YC et al. [18] went further to compare the perception of 5-min preceptor with its modified version, the 10-min preceptor among 107 new nurse graduates and found that in comparison with the former, satisfaction with 10-min preceptor was significantly higher ($p = 0.025$). We propose to review the time frame by comparative prospective studies for maximizing the benefits.

Limitations and Strengths

The small sample size, short study period and not including a control group to assess the actual impact attributed to introducing OMP are the limitations of our study. Further inclusion of only non-PG residents may limit generalization of the findings and large studies are necessary testing the scientific validity before including OMP in routine clinical teaching. The strength of our study is well planned methodology and giving due consideration to three important aspects of OMP while framing the questionnaires which helped in generating the robust evidence of well acceptance of this tool in Obstetrics and Gynecology clinical teaching as well as the emerging need to revise the timeframes suggested for imparting micro-skills in OMP.

Conclusion

Owing to the increased work load in major clinical branches, a time-efficient, student-centered TLM is the need of the hour. Further due to unavailability of regular teaching

sessions for non-PG residents, a TLM that polishes their theoretical knowledge and translates it into clinical practice without putting much burden on clinical faculty is urgently required. The results of our study endorse the efficacy and worthiness of OMP in Obstetrics and Gynecology for teaching non-PG residents, thereby advocating its inclusion in undergraduate and postgraduate clinical teaching as well. Prospective longitudinal studies are required to assess the expected intermediate and long-term outcomes.

The results also exhibit the perception of time crunch; hence opening up another area to be researched involving prospective comparative studies focusing on the effectiveness of various timeframes suggested for imparting micro-skills in OMP so that the time can be revised for maximizing benefits.

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Author Contributions *RS and SS initially conceptualized the study, RS and MS added their inputs; DB helped in finalizing the study design. Material preparation, data collection and analysis were performed by *RS, RS and MS. The first draft of the manuscript was written by *RS and all authors commented on previous versions of the manuscript. Final review and editing was done by DB. All authors read and approved the final manuscript.

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Declarations

Conflict of interest All the authors declare that they have no conflict of interest.

Ethical Approval The institutional ethical committee clearance was obtained for the study GIMS/IEC/HR/2021/08).

Informed Consent Informed consent was obtained from all individual participants included in the study.

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