



RESEARCH ARTICLE

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Evaluation of the Learning Methods and Skill Among Non PG Resident Doctors During their First Year Residency by using DOPS as an Assessment Tool: A Cross sectional study

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ABSTRACT

Aim: To assess the skill and learning methods among non PG junior residents.

Objectives: 1. To assess the skill of resident doctors.

2. To assess the practice of various learning methods among the resident doctors.

Study design: No of participants-15 (All non PG first year resident) doctors of Department of Medicine including allied subjects are observed in this study. Patient who needs pleural aspiration, ascitic fluid aspiration and lumbar puncture will be allotted to each junior resident during study period.

Methods: Patient who needs pleural aspiration, ascitic fluid aspiration and lumbar puncture will be allotted to each junior resident during the study period. The resident skill will be assessed by observing them and using checklist rating it by 7-10 point which includes knowledge about the procedure, informed consent, pre-procedure, analgesia etc. by using DOPS as an assessment tool. The residents are allotted second time to a different patient, but procedure is same for demonstration and observation of procedural skill. After observation of skill, a personal interview will be conducted on pre-designed oral questionnaire based proforma to assess the practice of various self-directed learning method among resident doctors. The resident who score <50% and those who score >50% were divided in to two groups and observed for various learning approaches of residents doctors who performed well as compared to other.

Result: The response of Non-PG students learning technique as face to face which is more effective than comparison to web or e-learning method by using all three procedure which is also statistically significant ($p < 0.05$). Overall, the scores of $\geq 50\%$ i.e. 60% has found in face to face/bed side clinic method is greater than whereas 40% has found in web/other methods.

Conclusion: The response of Non-PG students learning technique as face to face and bed side demonstration-learning, was better or performance is more effective than comparison to residents who used web or e learning method by using all three procedure as assessed by using DOPS methods, it means that face to face/bed side clinic demonstration technique is more effective than web/others method.

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KEYWORDS

Resident doctors, Knowledge and assessment

ABBREVIATIONS

RSDKS - Rajmata Devendra Kumari Singdevo, GMC Government Medical College. DOPS - Direct Observation of Practical Skills.

Introduction

The current undergraduate medical education curriculum focuses on competencies and gives emphasis to skill development in all phases and outcome. The newer work placed assessment tools are structured to provide useful feedback to trainee. The technical knowhow and competencies acquired during undergraduate studies are put to field of practice and skills to producing quality doctors. The trainee-led program encompasses the assessment of knowledge attitude behavior skill and learned skills during day to day medical practice, but due to lack of uniformity Internship program in all Institutions, the competen-

cies and skill required during undergraduate teaching are lost. The poorly selected teaching methods and assessment can lead to rapid decay of knowledge and its inability to apply in real situation [1]. The main components of undergraduate and post graduate assessment in Medicine have been written and clinical examination, these have strengths and weakness of students. Directly observed procedure or objectively structured assessment of technical skill is similar to the mini-CEX. The process has been developed by the Royal College of Physicians to assess practical skill [2]. The direct observation of procedural skills DOPS is most commonly used workplace assessment instru-

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ment. DOPS is a highly structured tool, which is most applicable in assessing the technicalities of procedural skills. The literature on the use of DOPS related mainly to there are several challenges in new qualified doctors assessing students in workplace to ensure that they are fit to practice. The purpose of study is to understand impact on undergraduate teaching and internship program of practical skill demonstration; it will include structured approach for basic skill development, involving practical skill demonstration pre-test, videos, discussion post-test and directly observation of procedural skill [3].

Methods

After taking ethical approval from college ethical committee and proper consent from study participant and is conducted as a cross sectional study. Duration of study is 6 Months, no. of participants are 15 (All non PG first year resident doctors of medicine and allied subjects). Place of study is Department of Medicine GMC Ambikapur Chhattisgarh.

Patient who needs pleural aspiration, ascitic fluid aspiration and lumbar puncture will be allotted to each junior resident during study period [4]. During study we have taken all prerequisite precautions (eg patient consent etc). The resident skill assessed by observing them by faculty and using checklist rating it by 7-10 points, which includes knowledge about the procedure, informed consent, pre-procedure, analgesia etc. by using DOPS as an assessment tool. After that residents are allow to learn various methods one group use only online digital and another group use direct bedside demonstration of procedure to the residents [5]. The Skill assessed by assessor of different procedures, the procedures are performed on actual patient. The residents judge on following criteria that includes:

1. Demonstration of understanding regarding the indication and relevant anatomy and what technique to be used.
2. Informed Consent.
3. Demonstration of appropriate pre-procedural preparation.
4. Appropriate analgesia or pre-anaesthetic medication.
5. Technical ability.
6. Aseptic technique.
7. Acuity to seek help patients or attendants where required.
8. Post procedural management.
9. Communication skills.
10. Consideration of patient/professionalism.

The Residents are allotted with different patient for the

second time, but procedure is same for demonstration and observation of procedural skill [6]. The Assessor/faculties are addition to asking for the title, ID number, full name and signature of the assessor. The assessor has two additional question for the assessor to answer:

1. The amount of DOPS that assessor has being carried out by trainee.
2. Whether assessor has been trained in using the particular assessment tool.

The responses are recorded as:

- Face to face training
- Aware about guidelines and
- Web/video/CDs.

These helped in the assessment of assessor to ensure fair evolution of residents or trainee [7].

By breaking up "marking" of candidates into five

After observation of skill a personal interview will be conducted on pre-designed oral questionnaire based proforma to assess the practice of various self-directed learning method among resident doctors, because there is no fixed teaching curriculum for non PG residents doctors, The resident who score <50% and those who score >50% divided in to two groups and observed for various learning approaches of residents doctors who performed well as compared to other [8].

Results

Response in Skill(s) amongs Plural Taping Method, Ascitic Taping Method, Lumbar puncture Method procedures were given in Table 1. Response of residents in plural taping shows question No. 3, 4, 5, 7, 8 and 9 have more than 50% correct responses (Figure 1). Response of Residents in ascitic taping shows answered only question no. 4, 7 and 8 have more than 50% responses. It means that 8-9 students have answered correctly in 4, 7, and 8 (Figure 2). Percentage of resident correctly performed the lumbar puncture skill shows the response of residents are only question no. 2, 7 and 8 have more than 50% percent correct answer [9]. From response of resident in Lumbar puncture procedure, it shows that $\chi^2=10.686$, $p\text{ value}=0.045<0.05$. It means that the difference among the three procedures of learning and skill of 15 Non-PG student is statistically significant (Figure 3).

Table 1. Response in Skill(S) among the three procedures.

Skill(S)	Number and % of those who correctly performed the procedures		
	Plural Taping Method	Ascitic Taping Method	Lumbar puncture Method
S1	06 (40%)	07 (46.67%)	07 (46.67%)
S2	06 (40%)	08 (53.33%)	08 (53.33%)

S3	10 (66.67%)	07 (46.67%)	07 (46.67%)
S4	10 (66.67%)	10 (66.67%)	10 (66.67%)
S5	10 (66.67%)	08 (53.33%)	06 (40%)
S6	08 (53.33%)	07 (46.67%)	07 (46.67%)

S7	09 (60%)	09 (60%)	07 (46.67%)
S8	09 (60%)	09 (60%)	09 (60%)
S9	10 (66.67%)	08 (53.33%)	07 (46.67%)
S10	06 (40%)	07 (46.67%)	07 (46.67%)

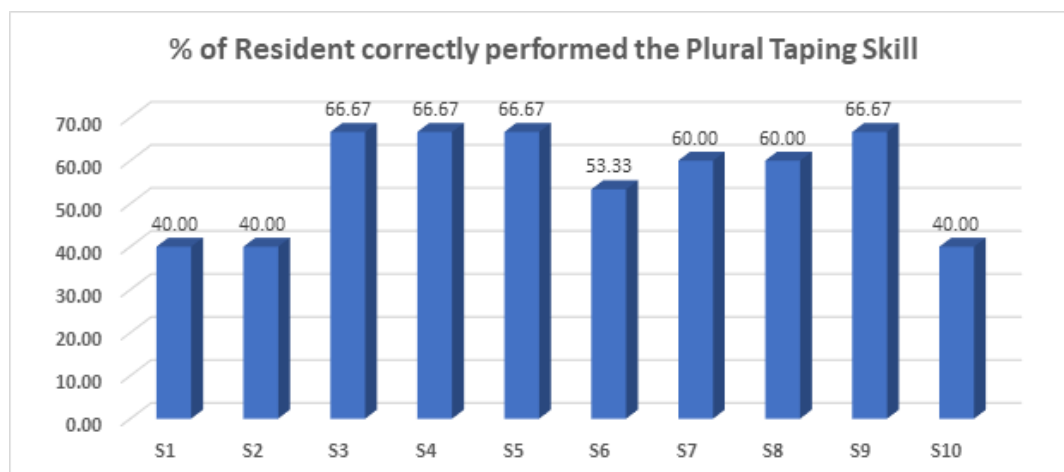


Figure 1. Response of residents in plural taping.

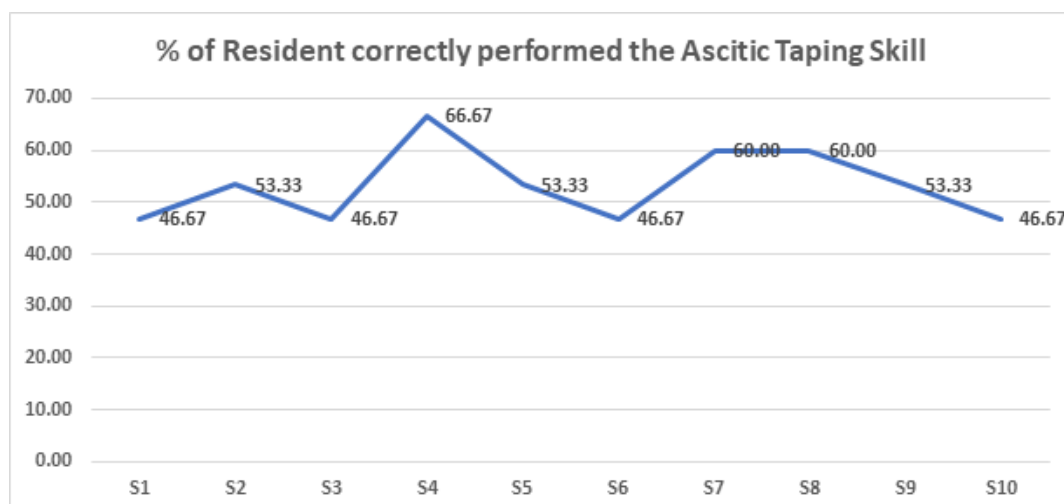


Figure 2. Response of residents in ascitic taping.

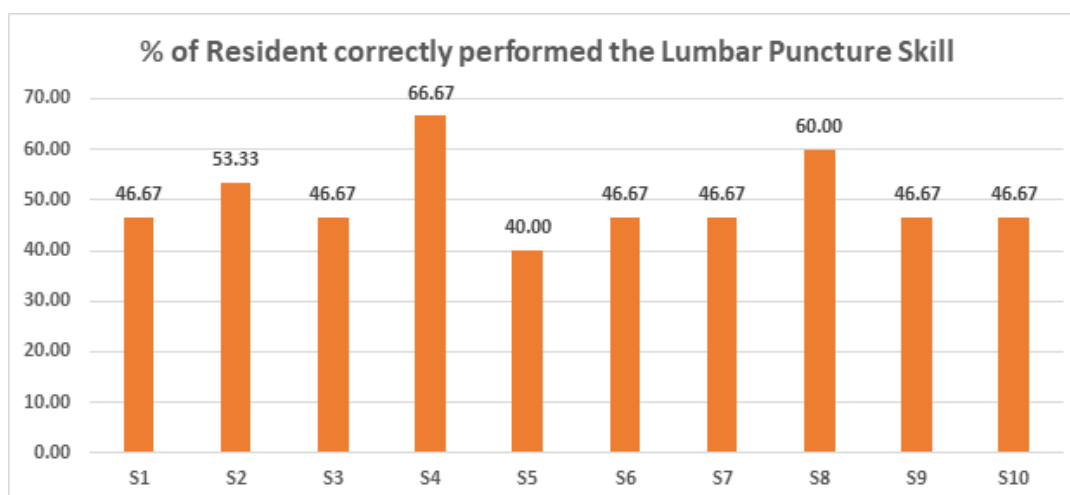


Figure 3. Response of resident in lumbar puncture procedure.

If we look in mean and S.D of responded in different Methods, the mean and S.D is increasing from third to first method [10]. First method has maximum mean and S.D, it shows that in Plural taping procedure has more impact than other procedures. Also learning procedures has from third to first in increasing phase with reference to mean and S.D (Table 2).

Various Learning Methods used by Resident Doctors were given in Table 3. comparisons of the resident whose score is <50% and >50% by using various learn-

ing methods [11]. The response of Non-PG students learning technique as face to face which is more effective than comparison to web or e-learning method by using all three procedures, which is also statistically significant ($p < 0.05$). Overall, the scores of $\geq 50\%$ i.e. 60% has found in face to face/bed side, while 40% of people used the internet or other methods, the clinic method is superior. [12]. It means that face to face/bed side clinic method is more effective than web/other method (Table 4).

Table 2. Mean & S.D. of responded in different methods.

Learning Methods	Mean	S.D.
Plural Taping	5.6	2.75
Ascitic Taping	5.33	2.74
Lumbar puncture	5.0	2.63

Table 3. Various Learning Methods used by Resident Doctors.

Learning Methods	Out of 15 Resident Doctors	Preferred Method (in%)
Through Text Book	12	80%
Class Room Teaching	08	50%
Bed Side Clinic	14	90%
E Learning	15	100%
Workshop/Seminars	02	10%
Others	07	46.60%

Table 4. Comparisons of the resident Who Score <50% & >50% by using Various Learning Methods.

Scores	No of students in Ascitic taping procedure	No of students in Lumbar Puncture taping procedure	No of students in plural taping procedure	In Face to Face/ Bed Side Clinic Method	In Web/Others Method
<50%	06	07	05	18 (40%)	27 (60%)
$\geq 50\%$	09	08	10	27 (60%)	18 (40%)
Total	15	15	15	45 (100%)	45 (100%)

Conclusion

The response of Non-PG students learning technique as face to face which is more effective than comparison to web or e learning method by using all three procedure which is also statistically significant ($p < 0.05$). Overall, the scores of $\geq 50\%$ i.e. 60% has discovered that the face-to-face/bedside clinic technique is more effective than 40% has found in web/others method [13]. It means that face to face/bed side clinic technique and clinical education is more effective than web/others method, effective methods are needed in order to evaluate students learning. The result of evaluating skill competencies of medicine residents in this study showed that they had appropriate performance, according to result, residents performance are face to face /direct observation is more than 50% in second time. The strong point of DOPS were promoting students procedural skill and independence during the test, the weak point of this test from participant point of view were different interaction with residents and stress full test, Some of the most important suggestions of participants for promoting the result of DOPS test were video recording instead of faculty members observation to avoid the stress. Developing and using DOPS for all clinical students and Resident Doctor is recommended and can help them to learn better.

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