International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Bangal VB. Int J Reprod Contracept Obstet Gynecol. 2017 Dec;6(12):5609-5612
www.ijrcog.org

pISSN 2320-1770 | eISSN 2320-1789

DOI: http://dx.doi.org/10.18203/2320-1770.ijrcog20175290

Original Research Article

Work place based assessment of medical interns on surgical asepsis following training in Obstetrics and Gynecology

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Received: 08 October 2017
Accepted: 04 November 2017

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ABSTRACT

Background: Internship programme for medical interns is meant to develop basic skills and to have experience in management of common illnesses and emergencies. Medical interns are often posted to the clinical disciplines, without adequate instructions on surgical asepsis and bio-safety measure. Training need was identified for interns in the subject of surgical asepsis.
Methods: Hands on training programme was organized for interns that included common procedures performed by them in wards, operation theatre and labour room complex on day to day basis. A pre and post test was performed to assess the gain in knowledge by interns. Subsequently, interns were supervised by residents, nurses and faculty members in labour room, operation theatre and wards. The observations were documented, and immediate feedback was given to interns. Feedback from interns was obtained at the end of the rotation in Obstetrics and Gynecology.
Results: There was significant gain in knowledge by interns following training programme. Interns adopted good aseptic precautions during their posting. Compliance to aseptic precautions was significantly more in female interns as compared to male. A demand got generated from other batches of interns in conducting similar training programme for them. Nurses, faculty members and co-ordinator of internship programme gave positive feedback about the changes observed in the batch of interns who underwent training as compared to previous batches.
Conclusions: Adoption of techniques of surgical asepsis by interns was improved following training programme held at the beginning of rotation posting in Obstetrics and Gynecology. It is recommended to include the topic in internship orientation programme.

Keywords: Hand hygiene, Internship training programme, Surgical asepsis

INTRODUCTION

The medical interns are routinely involved in performance of common procedures like urethral catheterization, venous puncture, performing episiotomy and assistance in caesarean section.

Very often, they do not follow principles of surgical asepsis while performing above procedures during their posting in wards, labour room and operation theatre. They very often do not use of mask, goggles, plastic gown and footwear in labour room. They do not follow the standard protocols of the hand hygiene, disposal of gloves, syringes and other surgical material. Lack of knowledge about importance of surgical asepsis and callous attitude are the reasons behind it.

Workplace based assessment has been introduced in various medical institutions.[1-3] It has been proved to improve the knowledge and skills of the trainee. Immediate feedback by the supervisors help trainee in improvement.[4-6] Direct observation of procedural skills is another way of teaching, learning or assessing the trainees.[7-10] Non adherence to principles of surgical

asepsis results in unsafe work environment, increased incidence of surgical site infections, maternal morbidity, needle stick injuries to students and other health care workers. It was postulated that the training programme will benefit the interns in improving their knowledge and practices of surgical asepsis. The objective of the study was to assess the gain in knowledge of medical interns about surgical asepsis, following training programme and subsequently perform workplace based assessment on their practices of surgical asepsis and to get feedback from the medical interns, residents, faculty members and Nurses.

METHODS

An educational intervention project was carried out for a period of three months in the department of Obstetrics and Gynecology of Rural Medical College affiliated to Pravara Institute of Medical Sciences, Loni, Ahmednagar in Maharashtra state, India. Project was implemented after obtaining technical and ethics committee clearance from the university. Forty interns of MBBS course (trainees), posted in the department of Obstetrics and Gynecology from 16th December 2015 till 15th March 2016 were included as study participants after obtaining the consent for participation.

A training programme on medical and surgical asepsis was organized for two batches of interns at the beginning of their two months rotation posting in Obstetrics and Gynecology. They were educated through didactic lectures, short videos on the adoption of principles of surgical asepsis and demonstration of the procedures on mannequins. They were asked to be observant during first week of their posting, about the aseptic precautions taken by the resident doctors in ward and labor room and operation theatre.

The interns were trained in six commonly performed minor procedures /techniques (Hand hygiene, putting and removing of surgical gloves and gown, female urethral catheterization, vene-puncture and collection of blood samples and segregation and safe disposal of used surgical material (gloves, syringes, needles etc). The training and assessment was done while the interns were on duty (on job training). The effect of the training in regard to adherence to principles of surgical asepsis was assessed using a multisource assessment for eight weeks posting in the department. Baseline knowledge (Pre test) of 40 medical interns about principles of surgical asepsis and surgical site infections was assessed through a questionnaire having ten short answer questions.

An intervention in the form of educational programme consisting of didactic lectures, video presentation on common surgical procedures and demonstration of the same procedures on mannequins was carried out in single four hour session. Change in the knowledge about surgical asepsis and surgical site infections was assessed through post test at the end of the posting.

The interns were provided with the oral feedback about their performance regarding adherence to principles of surgical asepsis by faculty members, resident doctors and nursing staff. The trainees were observed /assessed during their availability in the ward or labor room. Verbal feedback about the performance was given to the trainee immediately after the assessment so that trainees could identify and agree strengths, areas for improvement and an action plan. Reactions of the intern's about the training programme was assessed through Feedback form and was rated on Likert scale of 5. Knowledge gain after sensitization workshop was be assessed from the analysis of pre and post test results.

Transfer of the knowledge about the surgical asepsis was evaluated from the multisource feedback (resident doctors, nursing staff, faculty members) regarding compliance of interns about adherence to principles of surgical sepsis. Data analysis was done with SPSS software, version 21 using Wilcoxon signed rank test. Pre and post test scores were compared to find out the difference in the score.

RESULTS

There was significant gain in knowledge by interns and the interns adopted good aseptic precautions during their posting (Table1, 2).

Table 1: Pre and Post test scores of interns.

Test Score (Marks range)	Pre test, No. of interns (%)	Post test, No. of interns (%)
0-10	02 (06.66)	00 (0.00)
10-20	16 (53.33)	00 (0.00)
20-30	10 (33.33)	02 (6.66)
30-40	02 (06.66)	16 (53.33)
40-50	00 (00.00)	12 (40.00)
Total	30 (100.0)	30 (100)

Table 2: Difference between Pre and Post test scores.

Parameter	Pre test	Post test
Mean	19.33	37.70
Standard deviation (SD)	06.40	05.77
Median	18.00	37.00

Interns exhibited good compliance with good hand hygiene, correct and consistent use of surgical gloves, proper and consistent use of mask in OT /labour room. The overall compliance of male and female interns to good surgical practices was 62% and 78% respectively (Table 3).

A demand got generated from other batches of interns in conducting similar training programme for them. Nurses, faculty members and co-ordinator of internship programme gave positive feedback about the changes observed in the batch of interns who underwent training as compared to previous batches (Table 4).

Table 3: Results of the quantitative analysis about post training practices adopted by interns.

Parameter	Observation (%)	
	Male	Female
Good hand hygiene	72	88
Correct and consistent use of surgical gloves	70	90
Correct surgical scrub	36	55
Proper blood collection by vene-puncture	65	78
Satisfactory technique -urethral catheterization	55	70
Proper donning of gown	60	75
Proper and consistent use of mask in OT / labour room	70	85
Proper disposal of used surgical material (Syringes, gloves, needles, catheters, cotton swabs)	68	80
Average	62	78

Table 4: Result of analysis of feedback for (on the scale of 0-10).

S.No	Assessment parameter	Average score
1	How were the contents and quality of oral presentations?	8.12
2	How were the contents and quality of video presentations?	8.62
3	How were the contents and conduct of hands on workshop?	9.37
4	Whether time allotted was adequate?	7.51
5	Whether Time management was satisfactory?	8.16
6	Did new learning happen?	8.89
7	How was the overall usefulness of the training?	9.62
8	How was the ambience at the training venue?	9.00
9	Should this training be incorporated in regular intern training programme?	9.05
10	Average of all scores	8.70

(Score range: Lowest- 0 and Highest - 10)

DISCUSSION

Compulsory rotational Internship, following completion of MBBS course is meant for learning of various skills and procedures performed in various department and units. Learning and practicing principles of surgical asepsis is essential component of internship programme. The interns and resident doctors learn it mainly by observing their senior colleagues. The internees practice what they observe. The internees can be assessed by direct observation of procedural skills while they are working in hospital (DOPs). DOPS are not designed to test the person but rather provide the opportunity for that person to ensure that a particular skill is performed correctly according to agreed guidelines using an agreed checklist. The procedures selected in the training programme held were from those outlined as core competencies from the Medical Council of India document. Similar skills and procedures for Tomorrow's Doctors are practiced in united kingdom.[11]

In the present study, number of practical issues developed in arranging DOPs sessions. Firstly, some procedures were not frequently required so opportunities to observe the skill were difficult to find. When an opportunity arose it was not convenient for the assessor to make themself available at short notice and sometimes such procedures were outside of normal working hours, when assessors were not available. For other procedures, for example, venepuncture or cannulation, there were more opportunities available for observation at a planned time. It was appreciated at an early stage that the labour room and emergency operation theatre were areas that provided maximum opportunities for the trainees to practice their procedural skills. Routine theatre lists provided a further opportunity where procedural opportunities could be anticipated in advance.

Multisource feedback, sometimes referred to as 360 degree appraisal, is already being used extensively in industry and has already been used for medical practice.[12,13] Feedback about performance of interns was obtained from various sources like nursing staff, patients, resident doctors and faculty members. It was reported that the adoption of technique of surgical asepsis was better in operation theatre as compared to labour room and wards and during day time than night time. There was good adherence to practices related to hand hygiene and proper technique and use of gloves as compared to proper disposal of used surgical material and procedure for catheterization. There was no incidence of needle stick injury during study period. T

he training reduced the apprehension and fear among the interns about common surgical procedures and protocols. All interns were extremely happy about the learning opportunity they got during hands on workshop before starting the internship. They felt confident in doing venepuncture and drawing blood samples in patients. There was demand from other batches of interns for organizing similar workshop for them. Few interns suggested that the time allotment for theory part should be reduced in training and provide more time for hands on training. Internship programme co-ordinator has suggested that the similar workshop be organized for every future batch of interns.

Common reasons found for non compliance to aseptic precautions were forgot in hurry due to overwork, non availability of material –gloves, mask, sterilium solution, did not know the procedure/technique or non availability of waste bins for disposal of used items.

CONCLUSION

Training programme on surgical asepsis resulted in significant gain in knowledge of medical interns on importance of surgical asepsis at work place. Interns practiced what they learnt during training and followed the principles of surgical asepsis at work. Training programme was rated high by interns through feedback. Faculty members, nursing staff and resident doctors gave positive feedback about changes in aseptic practices adopted by interns following training.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Bangal VB. Work place based assessment of medical interns on surgical asepsis following training in obstetrics and gynecology. Int J Reprod Contracept Obstet Gynecol 2017;6:5609-12.