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ORIGINAL ARTICLE

Assessment of Surgical Competency of Post-graduates in Obstetrics and Gynecology in Pakistan

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ABSTRACT

Background and Aim: Postgraduate trainees' level of satisfaction in terms of surgical performance in the field of obstetrics and gynecology has a significant impact on their learning. Based on content, duration and structure of training curricula in obstetrics and gynecology specialty varies throughout the globe. The residency programs' ultimate purpose is to ensure competent, skilled, and independent practice capabilities of obstetrician and Gynecologists by the end of their training. The current study aimed to assess the surgical competency of trainees after post-graduation training in the field of obstetrics and gynecology.

Materials and Methods: This cross-sectional study was conducted in Pakistan using Google survey form, from December 2020 to May 2021. This questionnaire-based study focused on the surgical competency of obstetrics and gynecology trainees after their post-graduate training and consultancy in different cities of Pakistan. The surgical competency of the trainee was evaluated by supervisors and consultants based on parameters such Cesarean section, Laparotomy, Abdominal and vaginal hysterectomy, Manchester repair and other surgical procedures. Informed consent was taken from all the individuals and details such as research background. Data was collected using predesigned Google Proforma and were analyzed through SPSS version 20.

Results: Of the total 122 participants, 59 (48%) were supervisors while 63 (52%) were consultants. The mean age of the consultant and supervisor was 41.11±7.05 and 54.13±6.45 years respectively. Out of 59 supervisors, the prevalence of professor, associate professor, and assistant professor were 35 (59%), 10 (17%), and 6 (10%) respectively whereas of the 61 consultants, faculty members were 38 (60%) and consultants were 22 (35%). Based on number of trainee supervised by supervisors were categorized as follows; <3 trainee by 28 (47.5%), and 4 to 10 trainee by 26 (44.1%) supervisors. About 98% consultants and supervisors agreed on trainee performance in cesarean section procedure independently performed by the end of their post-graduate training while More than 90% of the supervisors and consultants believed that the major surgical procedures like abdominal and vaginal hysterectomy, manchester repair / other major gynaecological surgical procedures could not be performed independently by trainees at the end of their post-graduate training.

Conclusion: Our study found that almost all the trainees of Obstetrics and Gynecology had the capability of performing cesarean section at the end of their post-graduate training but failed to perform independently hysterectomy and other major surgical procedures. Focal surgical exposure to Hysterectomies & Laparotomies during training and affiliations with community hospitals as a source of additional operative volume for trainees was the suggestion to improve surgical competency of trainees.

Keywords: Surgical competency, Post-graduate training, Obstetrics and Gynecology

INTRODUCTION

Provision of state of the art surgical care to patients is an important aspect of good quality health system. Assessment of surgical skills has always been challenging. Postgraduate trainees' level of satisfaction in terms of surgical performance in the field of obstetrics and gynecology has a significant impact on their learning. Based on content, duration and structure of training curricula in obstetrics and gynecology specialty varies throughout the globe [1, 2]. Obstetrics and Gynecology includes women care during preconception period, pregnancy, childbirth and the postpartum period of normal pregnancy and surveillance, prevention, and management of any complications arising in pregnancy. It also involves the female genitourinary and pelvic floor diseases treatment and management [3]. Previous recommendations for Obstetrics and Gynecology training analysis revealed that medical knowledge and practical skills were emphasized for the development of trainees' independent practice and modern curriculum as a consultant. It was specifically suggested that a competency-based framework be included, which would address not only medical aspects but also societally relevant topics and be based on modern theoretical and clinical knowledge [4, 5]. The post-graduate trainees learning skills are significantly affected by their satisfaction level. Across the globe, medical training facilities are available for post-graduate trainees in different specialties and sub-specialty. Medical institute respective departments and faculties mainly focus on continuous improvements in the training facilities as well as their validity concerns. The self-perception regarding their training program is the key aspect of training. The treatment of minor illnesses, dealing with emergency cases, managing complications and performing various surgeries could be the effective outcomes by the end of the training programs. Various studies were conducted on trainees' perception and confidence in their competence in the examination process and achievements at the end of their training [6].

A study focused on exploring resident trainee views regarding their experience and skills achieved during their training program observed that consideration of candidate's views can enhance the teaching and training skills of the trainees in their respective specialty as supported by another study [7, 8]. Saqib and Dawe et. al. correlated the post-graduate current training standard and trainee's perception regarding clinical knowledge and training program. Remedial measures were adopted by the trainees in challenging environments of learning in their university hospitals [9-11]. An interesting study categorized the trainee's level of satisfaction with their respective years of training. It has been observed that stage 1 trainees were way more satisfied with their clinical and practical skills in their training programs compared to the stage III trainees [12, 13]. Depending on the specialty, a competency-based training program known as FCPS varies in training duration from four to six years. In Pakistan, about seventy-two clinical specialty offers FCPS training programs with aims to ensure humanly, ethical, and expert specialists with capabilities to practice independent medicine and surgeries. Very few studies focused on the trainee's satisfaction level during their training programs in Pakistan, but limited data available on the surgical competency of the trainees in the field of obstetrics and gynecology. The current study aimed to evaluate the surgical competency of the obstetrics and gynecology trainees by the respective supervisor and consultants throughout Pakistan.

MATERIALS AND METHODS

This cross-sectional study was conducted in Pakistan using Google survey form from December 2020 to May 2021. This questionnaire-based study focused on the surgical competency of obstetrics and gynecology trainees after their post-graduate training and consultancy in different cities of Pakistan. The surgical competency of the trainee was evaluated by supervisors and consultants based on parameters such as Cesarean section, Laparotomy, Abdominal and vaginal hysterectomy, Manchester repair and other surgical procedures. Informed consent was taken from all the individuals and details such as research background, objectives, and benefits were explained to them. Ethical approval was taken from the ethical board committee of UMDC. The questionnaire contained questions exploring supervisor and consultant's opinions on surgical competency of the obstetrics and gynecology trainee's performance in Cesarean section, Laparotomy, abdominal and vaginal hysterectomy, Manchester repair, and other surgical procedures. The questionnaires were piloted by the gynecology consultants and supervisors with no previous validations. All the supervisors and consultants were provided with questionnaires in the form of a Google survey form. All the consultants and supervisors on maternity leave were excluded from the survey. Respondents were provided with a five-point Likert scale mentioning the strong disagree, disagree, uncertain, strongly agree, and agree, statements of agreed and disagreed on the questionnaire. Respondent's free-text comments, ward experience with trainees, and suggestions for improvements were recorded on the blank space provided in the pre-designed questionnaires.

SPSS version 20 was used for data analysis of the collected data through predesigned proforma. Mean and SD was calculated for quantitative variables like age. Frequency and percentage were also calculated for qualitative variables like designation, hospital type for both supervisor and consultant, and a number of trainees for supervisor. Post-stratification Chi-Square test was applied to check the view between supervisor and consultant, using $P \leq 0.05$ as a significant difference.

RESULTS

Of the total 122 participants, 59 (48%) were supervisors while 63 (52%) were consultants (Figure 1). The mean age of the consultant and supervisor was 41.11±7.05 and 54.13±6.45 years respectively. The descriptive statistics of all the participants are shown in Table 1. Out of 59 supervisors, the prevalence of professor, associate professor, and assistant professor were 35 (59%), 10 (17%), and 6 (10%) respectively whereas of the 61 consultants, faculty members were 38 (60%) and consultants were 22 (35%). Based on number of trainee supervised by supervisors were categorized as follows; <3 trainee by 28 (47.5%), and 4 to 10 trainee by 26 (44.1%) supervisors as shown in Figure 2. Table 2 shows that the opinion of supervisor and consultant regarding surgical competency (Cesarean section, TAH, Vaginal Hysterectomy, Laparotomy and Manchester repair / other surgical procedures), there is no significant difference in the opinion of both in all aspects of surgical competency as p-value is greater than 0.05. About 98% consultants and supervisors agreed on trainee performance in cesarean section procedure independently performed by the end of their post-graduate training while More than 90% of the supervisors and consultants agreed that the major surgical procedures like abdominal and Vaginal hysterectomy, Manchester repair / other major gynaecological surgical procedures could not be performed independently by trainees at the end of their post-graduate training. Table 3 shows that there was no significant difference in the opinion of supervisor and consultant about suggestions for improvement of FCPS training to increase surgical competency. Most of the supervisors 66% and consultants 73% disagreed that professional competency can be increased by additional training beyond 4 years. Focal surgical exposure to Hysterectomies & Laparotomies during training and affiliations with community hospitals and gynaecologists as a source of additional operative volume for trainees was the suggestion to improve surgical competency of trainees recommended by more than 90% of supervisors and consultants.

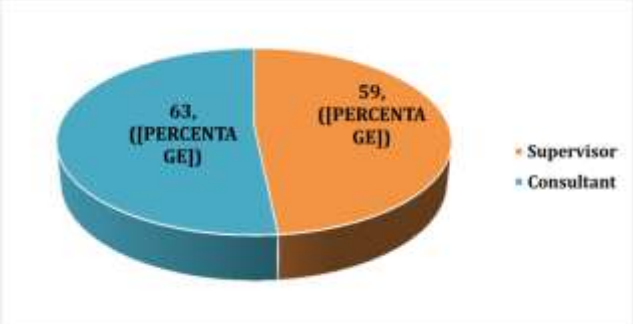

Figure-1. Prevalence of consultants and supervisors participated

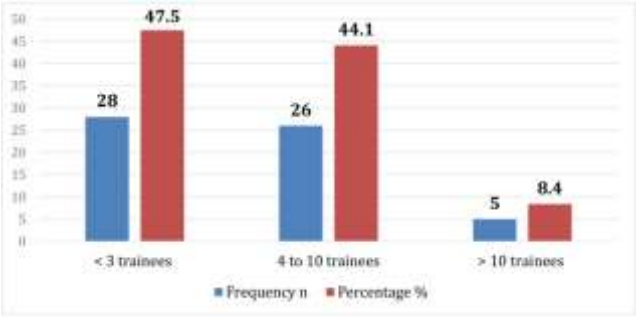

Figure-2. Prevalence of trainees supervised by supervisors

Table-1. Descriptive statistics of all the participants

Description	Mean	± SD
Age (Supervisor)	54.13	6.45
Age (Consultant)	41.11	7.05
Designation (Supervisor)	**Frequency**	**Percentage**
Professor	35	59%
HOD	3	5%
Consultant	5	8%
Associate Professor	10	17%
Assistant Professor	6	10%
Designation (Consultant)		
Chairperson	1	2%
Senior Registrar	1	2%
Consultant	22	35%
Faculty Member	38	60%
Not Working	1	2%
Current Institute/Hospital Type (Supervisor)		
Private	33	55.9%
Public	26	44.1%
Current Institute/Hospital Type (Consultant)		
Private	40	63.5%
Public	23	36.5%
Number of FCPS Trainee (Supervisor)		
0 – 3	28	47.5%
4 – 10	26	44.1%
> 10	05	8.4%

Table-2 the consultants and supervisors opinions regarding trainees surgical competency

Surgical Competency		What is your assessment regarding surgical competency of your trainees, are they competent in performing following major surgeries independently at end of their Post-graduation Training?		Whether you were competent in performing following major surgeries independently at end of your Post graduation Training?		P-Value
		Frequency	Percent	Frequency	Percent	
Cesarean section	Yes	58	98.3	62	98.4	1.00
	No	1	1.7	1	1.6	
TAH	Yes	23	39.0	23	36.5	0.778
	No	36	61.0	40	63.5	
Vaginal Hysterectomy	Yes	4	6.8	6	9.5	0.745
	No	55	93.2	57	90.5	
Laparotomy	Yes	38	64.4	37	58.7	0.520
	No	21	35.6	26	41.3	
Manchester repair / other surgical procedures	Yes	7	11.9	7	11.1	0.896
	No	52	88.1	56	88.9	

Table-3. Differences in opinions of consultants and supervisors regarding improvement in FCPS training

Description		Supervisor		Consultant		P-Value
		Frequency	Percent	Frequency	Percent	
Professional competency can be increased by additional training beyond 4 years.	Agree	20	33.9	17	27.0	0.406
	Disagree	39	66.1	46	73.0	
Focal surgical exposure to Hysterectomies & Laparotomies during training.	Agree	55	93.2	61	96.8	0.428
	Disagree	4	6.8	2	3.2	
Affiliations with community hospitals and gynaecologists as a source of additional operative volume for trainees.	Agree	54	91.5	57	90.5	1.00
	Disagree	5	8.5	6	9.5	

DISCUSSION

Our study surveyed the supervisor's and consultant's opinions regarding trainee's performance and surgical competency at the end of their training in the field of obstetrics and gynecology. In contrast, other studies conducted by Fabricius et.al. and Peeraer et al. found a higher prevalence of trainees and young specialists who were moderately satisfied with their chosen specialty based on their duty hours, pay package, and lack of acquiring practical knowledge and clinical skills. Mostly female trainees who had joined the obstetrics and gynecology as a specialty was facing challenges to cope with their duties [14, 15]. In our study, the opinion of supervisor and consultant were recorded in terms of trainee's surgical competency in performing cesarean section, TAH, Vaginal Hysterectomy, Laparotomy and Manchester repair / other surgical procedures.

Our study found that both supervisors and consultants agreed on trainees' knowledge and skills in performing independent surgeries and cesarean sections at the end of

post-graduate training. In contrast, Almost all the supervisors and consultants agreed that the major surgical procedures including hysterectomy could not be performed independently by trainees at the end of their post-graduate training. The majority of supervisors and consultants disagreed that additional training beyond four years can increase professional competency. Focused surgical exposure to hysterectomies and laparotomies during training, as well as affiliations with community hospitals and gynaecologists as a source of additional operative volume for trainees, were the suggestions made by supervisors and consultants to improve trainee surgical competency. No significant difference in the opinion of both in all aspects of surgical competency as the p-value is greater than 0.05.

The study objectively measured the trainee's capability of performing major surgeries such as cesarean section, abdominal and vaginal hysterectomy, and laparotomy at the end of their post-graduate training. The questionnaire-based survey was completed by the consultants and supervisors working as a professor, associate professor, and assistant professor across the country. In our study, about 38 faculty members evaluated the trainee knowledge and independent clinical skills relating to the surgeries performed by their trainees in the field of obstetrics and gynecology. They considered all the minor and major procedures their trainees performed during their training program besides the core component of clinical training. Motola et al. found that 48% of trainees were guided by their supervisors in performing the major procedures in the gynecology training program. Trainees' progress and skills could be enhanced with the supervisor's involvement in their training [16]. Internal and external assessments of trainees during their training period should be conducted according to the CPSP schedule, an annual assessment report needs to prepare by their supervisors. Strict compliance to the post-graduate training and assessment should be followed along with structured guidelines provided to the supervisors for their CPSPS fellowship candidates. Trainee's essential skills and knowledge to be tested within the comprehensive and robust assessment system [17].

Although the College of Physicians and Surgeons Pakistan assigned a supervisor for each trainee and supervise the training program at regular intervals. Production of high-quality specialists mainly depends upon the qualitative training provided by their supervisors in the respective institute. But the reality is totally different. Supervisors prefer to treat patients in the private sector, leaving unsupervised trainees in the public sector due to financial burden. The registrars and trainees are in charge of the care process. The process of requiring supervisors to be present during surgeries and to play a direct role in training has yet to be implemented uniformly across the country [18]. In our study, supervisors and consultants made some important suggestions to improve the trainee skills and knowledge during their training program. Also, recommendations were proposed by the supervisors and consultants in order to improve training opportunities and facilities in all specialties especially obstetrics and gynecology. Some of the suggestions proposed by the supervisors were; review of eligibility criteria for supervisors, Mandatory DOPS for frequently done Obstetrics & Gynecology surgical procedures, more strict and supervised training, reducing the number of trainees and workload, assessment of institute of post-graduate training strict criteria, subspecialty in gynecology, improving FCPS-1 exam standard and increasing surgical procedures, post-training fellowships initiative, changing supervisors and trainees attitude toward their training, allowing endoscopic and other advance surgeries, supervisors to be made responsible for training, and arrangement of skills improving workshops.

In most of the cases, the consultant's opinion and suggestions matched the supervisor's proposed recommendations. The consultant's suggestion were as follows; improving training structure, increasing surgical experience under supervision of the respective supervisors, Major surgeries to be taught and practice during post-graduation training, to provide supervisors focused training, post-fellowship training, CPSP and supervisor to be considered as responsible for acquiring practical skills and knowledge among trainees, simulation-based training, facilitation of training in government institute, fixation of ratio between trainee versus supervisors, RCOG collaborated abroad training opportunities should be promoted, trainees should be capable of performing Cesarean hysterectomy, implementation of the subdivision of gynecology into subspecialty and their respective fellowships, serious attitude toward training by both supervisor and trainee, Clinical based training, supervisor's assistance in training, independent surgeries to be performed by the trainee, more opportunities for hysterectomy procedure during training, skills improving programs, and coordination between CPSP and hospitals.

Until the last few decades, a significant proportion of the medical migrants were trained in UK or New Zealand. Now only few foreign trained Obstetricians and Gynecologists return to Pakistan, and even upon their return find it difficult to find appropriate job opportunities where they can pass on their recently acquired skills to local trainees [19]. Certain deficiency has been observed in the post-graduate training program offered in Pakistani hospitals by Australian based survey conducted on Pakistani doctors [20]. Hospital poor working conditions and trainees lack of guidance regarding future career path was reported. Additionally, a contrast criterion was observed in the examination system and training structured proposed by the CPSP [21]. Improving the post-graduate training system can enhance the clinical skills and practical knowledge of the trainees. self-directed learning-centered approach replaced the old-fashioned post-graduate training approach introduced by the College of Physicians & Surgeons of Pakistan could be an improving factor for enhancing the trainee's surgical skills in independent clinics. These results may be different from the views of trainees from other cities.

CONCLUSION

Our study found that almost all the trainees of Obstetrics and Gynecology had the capability of performing cesarean section at the end of their post-graduate training. But failed to perform major surgical procedures including laparotomy, abdominal and vaginal hysterectomy, Manchester repair etc. Focal surgical exposure to Hysterectomies &

Laparotomies during training and affiliations with community hospitals and gynecologists as a source of additional operative volume for trainees was the suggestion to improve surgical competency of trainees recommended by more than 90% of supervisors and consultants.

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