TEACHING QUALITIES AND PRACTICES IN POSTGRADUATED RESIDENCY TRAINING

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ABSTRACT

Objective: To assess the teaching qualities of supervisors in post graduate residency training.

Study Design: Cross sectional study.

Place and Duration of Study: This multicenter study was conducted at four medical colleges and six affiliated postgraduate training institutions of Rawalpindi/Islamabad, from Feb to May 2017.

Methodology: Total 242 post graduate trainees evaluated teaching qualities of their supervisors on a five point likert scale of SETQ tool. Trainees having experience of more than six months enrolled in all post graduate courses like MCPS, FCPS, MS/MD and M.Phil were included in this study from basic, preclinical and clinical specialties. Data was analyzed by using SPSS version 21. Frequencies were calculated for computed scores categories of individual domain as well as for total SETQ computed scores. Chi square test was applied to find out association between SETQ computed scores and age, gender, specialty, qualification and duration of experience of supervisors as well as for different variables related to trainees.

Results: Cronbach's α value of tool was 0.73. Overall teaching practices were categorized as "Good" by 220 (90.9%) trainees. More than 85% trainees evaluated their supervisors as "Good" regarding each of individual domains (Professional attitude, learning climate and evaluation) of SETQ except for communication of goals and feedback domain. Lowest evaluation scores (79.3%) were observed for "Feedback" domain. Statistically significant association was found between SETQ score and qualification of supervisors (*p*=0.04).

Conclusion: Despite of work load and patient care responsibilities, the supervisors are evaluated to have good teaching qualities and practices by postgraduate trainees.

Keywords: Feedback, Postgraduate medical education, Postgraduate residents, Supervisors, Teaching performance.

INTRODUCTION

Provision of expert care to the patients specifically relies upon the standard of professionals being produced, emphasizing the direct association of health care delivery services with teaching and training at postgraduate level[1]. Postgraduate degree awarding institutions in Pakistan particularly College of Physicians and Surgeons of Pakistan (CPSP) realigned postgraduate curriculum to address the changing trend of competency or outcome based medical education in residency training[2]. In postgraduate medical education formal preparation for teaching is simply recently being developed. Indeed, even experienced specialists can think that it's hard to instruct[3]. Evaluation of undergraduate and postgraduate teaching has received abundant consideration in the medical education literature. To ensure the quality of teaching programs evaluationof faculty, residents, and the program itself isn't any longer debatable[4]. Inputs from residents and self-assessment by trainers are perceived systems for distinguishing shortcomings and qualities, and have been appeared to be successful in improving execution[5]. Literature on the tools and technique for evaluating residents in postgraduate training is abundant. In distinction; the literature on evaluation of teaching faculties by residents is scarce[6]. Mostly the residents' ratings to feedback faculty members are used to identify outstanding or insufficient teaching performance thereby facilitating the improvement of teaching performa-

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nce[7]. Worldwide accreditation standards are set to ensure and monitor the quality of residents' teaching and training[8]. However published literature on deficiencies highlighted by trainees like lack of time for teaching and training by supervisors, disregard of training curricula, lack of guidance regarding research and dissertations, deficient supervision due to administrative assignments and excessive number of trainees for available trainers are indicative of insufficiencies in effective implementation of outcome-based curriculum in our postgraduate medical education[9]. Supervisor's characteristics can be categorized into three different categories: personal, teaching and clinical qualities[10]. Since observation is an important part of residents learning process, these qualities are believed as vital teaching method in modeling the values, attitudes, performance, and ethics of residents[11]. Training quality alludes to solid direction that empowers an extensive variety of students to learn[12]. Residents in clinical setting are reliant on supervisors for graduating. Being learners and care providers at the same time, they learn through experiential learning and feedback in initial unstructured and ambiguous situations[13]. Residents evaluate their trainers who are accessible, enthusiastic about teaching, provide feedback indicating areas of improvement, treat them equally, provide a comfortable and safe learning environment and opportunities to practice as "effective teachers" in postgraduate training[14]. Many factors like gender, race, social position, social class, interpersonal characteristics of faculty and the rater are claimed as potential source of bias. Academic rank of the faculty member and training setting also predict trainees' evaluations of faculty member's teaching performance in residency training[15]. There is positive association between teaching performance and overall learning climate more specifically with assessment and coaching[16]. The System for Evaluation of Teaching Qualities or SETQ was created to quantify and improve instructing performance by way of feedback thereby filling the gap in the availability of reliable and valid techniques for evaluation to be used in the various

local, cultural and educational contexts[17]. The SETQ framework comprises of the assessment, feedback and reflection of teaching qualities of trainers both by the trainees and faculty themselves[18]. SETQ tool was based on Stanford Faculty Development Program (SFDP) instrument. Both qualitative and quantitative methods were used to develop two SETQ instruments one to be completed by resident and other by faculty[19]. SETQ comprises of 23 items and covers 5 domains rated on a 5-point Likert scale: learning climate, professional attitude towards and support of residents, communication of goals, evaluation of residents, and giving feedback[20]. One of the strength of SETQ tool is requirement of small numbers of evaluations to generate reliable results. SETQ tool has been extensively used in 31 different hospitals and 150 residency programs for evaluation of teaching qualities of supervising faculty; however in Eastern context it has not yet been used[21]. The purpose of this study was to evaluate teaching qualities/practices of supervisors during residency training to identify the areas of potential improvement in teaching and training at post graduate level.

METHODOLOGY

A cross sectional study was conducted at four medical colleges and six affiliated postgraduate training institutions of Rawalpindi/Islamabad from 1st February to 30th May, 2017 among post graduate trainees. Sample calculated by using prevalence (35), significance level (0.05) and confidence interval (95%) was 242. One stage cluster sampling was done to select six residency training institutes out of all recognized academic institutes offering postgraduate residency training in Rawalpindi and Islamabad. Institutions offering post-graduation which are not attached with any medical college were not included in this study. Trainees enrolled in all post graduate courses like MCPS, FCPS, MS/MD and M.Phil were included in this study. Two residents of registered supervisors with supervisory experience of more than six months were randomly selected both from clinical and basic sciences specialties. Two fourty two trainees evaluated 121

supervisors, two trainees for each supervisor to avoid any potential bias. Newly inducted trainees with less than six month training and those on elective rotation were excluded. Informed written consent was taken from trainees. Residents evaluated their supervisors by using Systematic Evaluation of Teaching Qualities questionnaire (23 items and 5 subscales). SPSS version 21 was used to analyze data. Mean and standard deviation were calculated for continuous variables and frequencies for categorical variables. Reliability of instruments was established by determining Cronbach's α-value. 5 subscale variables were computed from respective items. Total SETQ score was computed from computed subscales. Computed scores of each domain as well as total SETQ score was categorized as 1-2 = poor, >2-3.5 =satisfactory and >3.5-5 as good regarding teaching qualities of supervisors.

RESULTS

One Hundred and Forty (57.9%) postgraduate trainees were females with mean age of 30.2 ± 0.62 years. Ninty (37.2%) trainees were 2nd year residents, 72 (29.8%) were first year residents, 58 (24%) were third year residents and only 22 (9.1%) trainees were fourth year residents. Majority (166) of trainees were FCPS residents (68.6%) followed by MPhil trainees 46 (19%), MCPS trainees 24 (9.9%) and MD/MS trainees 6 (2.5%). Mean age of supervisors was 53.8 years (SD= ± 6.3).

Regarding total scores, 220 (90.9%) trainees evaluated their supervisors "Good (SETQ score >3.5-5)", only 22 (9.1%) evaluated as "Satisfactory (SETQ score >2-3.5)", whereas none of the trainees evaluated teaching qualities and practices as "Poor (SETQ score 1-2)".

Statistically insignificant association was found between SETQ total score and different independent variables related to supervisors on applying chi square test except for qualification of supervisor (*p*=0.04).

Similarly statistically insignificant association was found between SETQ total score and gender (*p*=0.52), Year of training (*p*=0.06), Course

of training (*p*=0.75) of post graduate trainees on

Table-I: Supervisor's characteristics.

Variable		n	%
Gender	Male	78	64.5
	Female	43	35.5
Specialty of Supervisor	Basic Sciences	17	14.0
	Pre-Clinical	14	11.6
	Clinical Sciences	90	74.4
Qualification	MPhil/ MCPS	14	11.6
	FCPS/ FRCS/FRCP	101	83.5
	PhD	6	5.0
Duration of experience as supervisor	<5 Years	31	25.6
	5-10 Years	49	40.5
	>10 Years	41	33.9

Table-II: Teaching qualities and practices scores.

SETQ Domain	SETQ Scores Poor= 1-2 Satisfactory=>2-3.5 Good=>3.5-5	n	%
Learning Climate (LC)	Poor	-	-
	Satisfactory	20	8.3
	Good	222	91.7
Communication of Goals (CoG)	Poor	-	-
	Satisfactory	48	19.8
	Good	194	80.2
Professional Attitude (PA)	Poor	2	0.8
	Satisfactory	14	5.8
	Good	226	93.4
Feedback	Poor	4	1.7
	Satisfactory	46	19
	Good	192	79.3
Evaluation	Poor	6	2.5
	Satisfactory	30	12.4
	Good	206	85.1
Total SETQ Score	Poor	-	-
	Satisfactory	22	9.1
	Good	220	90.9

applying chi square test.

DISCUSSION

The results of this study showed that SETQ is a reliable and valid tool to evaluate teaching practices of supervisors in residency training. In this study 220 (90.9%) trainees evaluated their supervisors as "Good" regarding overall teaching practices using SETQ tool. Regarding individual

domains of SETQ tool, 222 (91.7%) trainees evaluated their supervisors "Good" regarding maintenance of conducive learning environment and 20 (8.3%) evaluated them as "Satisfactory", whereas none of trainee evaluated this domain of supervisor's qualities as "Poor". Results of a study using same tool conducted at Netherlands among residents of 45 residency programs showed high overall teaching practices scores (3.78 ± 0.62). Results of same study regarding learning climate domain of SETQ showed highly rated responses by trainees (3.71 ± 0.33) consistent with results of this study[22]. Present study

nication of goals (80.2%) domain. These lower scores for "Feedback" practices are consistent with another study conducted by Reddy *et al* which further identified time constrains due to clinical work, and uneasiness with giving negative feedback as major predictors of low feedback practices in residency training[23]. Results of another study conducted by Zehra *et al* high-lighted lack of communication regarding goals between supervisors and trainees and attributed these low practices to relative unawareness of supervisors about goals and expectations related to trainees at

Table-III: Cross tabulation of SETQ score categories and independent variables related to supervisors.

Variables (Supervisors)		SETQ Score			*p*-value
		Poor	Satisfactory	Good	
Age	<45 years	0	4	26	
	>45-55 years	0	4	114	0.10
	>55	0	14	80	
Gender	Male	0	10	146	0.16
	Female	0	12	74	
Specialty	Basic Sciences	0	6	28	
	Pre-Clinical	0	0	28	0.23
	Clinical	0	16	164	
Qualification	Mphil/MCPS	0	6	26	
	FCPS/FRCS/FRCP	0	16	186	0.04
	PhD	0	0	8	
Duration of experience as supervisor	<5 years	0	6	56	
	5-10 years	0	6	92	0.77
	>10 years	0	10	72	

showed insignificant association between total teaching qualities scores and different variables related to supervisors like age, gender, specialty and duration of supervisory experience. However a statistically significant association was observed between qualification of supervisors and total SETQ score (*p*=0.04). In contradiction to this, results of study conducted by Lombarts *et al* at Netherlands showed positive association of SETQ score with rest of independent variables except for team work (*p*=0.082)[22].

More than 85% of participants of this study evaluated their supervisors as "Good" regarding total SETQ scores (90.9%) as well as for individual domains like Learning climate (91.75%), Professional attitude (93.4%), and Evaluation (85.1%) except for Feedback (79.3%) and Commu-

different levels[24].

Findings of present study regarding communication of goals scores (good ≥3.5-5) are comparable with findings of another study conducted by Perez *et al* which showed relatively high scores (3.80 ± 0.79) for communication of goals and objectives by supervisors[25]. Results of same study were quite low for provision of timely formative feedback to improve performance (2.69 ± 1.39) and for learning climate (3.31 ± 1.33), which is partially consistent with findings of our study. Study conducted by Perez *et al*, showed a positive association between evaluation scores by junior resident (3.96 ± 0.17, *p*<0.01), however in present study association between SETQ score and training year of PGTs was statistically insignificant (*p*=0.06)[25].

Evaluation scores regarding feedback and evaluation domain of SETQ in present study are also consistent with findings of study Myerholtz *et al* which showed relatively low practices of effective feedback and evaluation. The study also highlighted explicit overlap in distinguishing feedback and evaluation among residents[25]. These finding highlight need of frequent, real time and actionable feedback practices in residency training to foster continued professional development.

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CONCLUSION

The residents evaluated supervisors as "good" regarding teaching qualities and performances in postgraduate residency training across basic, clinical and preclinical specialties of major teaching programs. The SETQ tools appeared to provide reliable evaluation data for training institutions collectively across different settings.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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