

# Personality Traits and Teaching Practices of Supervisors in Postgraduate Residency Training

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## Abstract

**Background:** To study the type of relationship (positive correlation, negative correlation or no correlation) between different traits of supervisor's personality and their teaching practices in postgraduate residency training.

**Methods:** In this co-relational study registered supervisors (n=121) currently supervising post graduate training and their registered trainees (n=242, two trainees for one supervisor), were included. Two well validated questionnaires namely BFI (Big five inventory) and systematics evaluation of teaching qualities (SETQ) employing five point likert scale were used to collect data. Five factor model (15 items) covering conscientiousness, agreeableness, extraversion, emotional stability and openness was given to assess personality traits of supervisors. Residents evaluated overall teaching practices of respective supervisor using a validated 21-item System for Evaluation of Teaching Qualities (SETQ) tool. It also evaluated five specific domains like learning climate, professional attitude, communication, evaluation, and feedback. Inter-scale correlations between two scales as a whole and between subscales were calculated by using Pearson's correlation coefficient (r). Values < 0.05 were taken as statistically significant.

**Results:** Positive correlation (r=.124, p=.175 statistically insignificant) was observed between personality traits and teaching practices. Positive correlation (statistically insignificant) was found between conscientiousness (r=.16, p=.06) and agreeable (r=.06, p=.49) traits of supervisor's personality with their teaching practices in relation to post graduate training.

**Conclusion:** None of the personality trait of supervisors appeared to have any significant correlation with their teaching performances generally in postgraduate residency training. Positive correlation (statistically significant) was observed between conscientiousness trait of

supervisor's personality and learning climate (r=.18, p=.04), professional attitude (r=.20, p=.02) and feedback (r=.18, p=.04) domains of teaching practices.

**Key words:** Teaching performance, Residency training, Post graduate trainees, Personality traits

## Introduction

Post graduate medical education is a crucial element of the spectrum of medical education. This phase of training is based on supervised apprenticeship in teaching hospitals.<sup>1</sup> Post graduate trainees are not solely the learners, but are involved in patient care.<sup>2</sup> High-quality training execution is imperative to guarantee patient safety and boost residents' learning.<sup>3</sup> All over the world, Post graduate degree granting organizations set measured guidelines and controls to manage and screen this training phase.<sup>4</sup> Supervision is a complex activity that involves an interpersonal exchange.<sup>5</sup> Although supervision is believed to be both vital and effective in trainee's professional development, its practice is vastly capricious.<sup>6</sup> Motivation of supervisors is crucial for prosperous delivery of teaching.<sup>7,8</sup> Learners in residency settings are reliant on their supervisors for graduating.<sup>9</sup> From the start of their training, residents are immersed in medical practice and they mostly learn through feedback and experiential learning.<sup>10</sup> Although a supervisor is accountable for learning and acquisition of skilled competency by PGTs; in educational setups supervisor additionally work as consultants accountable for patient care. As supervisors turn out to be ever busier in their clinical practice and regulatory assignments, being effective instructors turns out to be additionally testing with regards to growing clinical duties and contracting time for teaching.<sup>11,12</sup> Content mastery, phenomenal relational abilities, a non-judgmental identity, and good mentorship are commonly referred attributes of a medical trainer.<sup>13</sup> Guidance and feedback provided by supervisor on educational, professional and personal development of

trainees determine the effectiveness of their supervisory relationship.<sup>14</sup> Systematic evaluation of teaching practices through systematic evaluation for teaching qualities questionnaire (SETQ) is widely used across multiple specialties both for self-evaluation as well as for evaluation of trainer by the residents.<sup>13,15,16</sup> Teaching performance of supervisors is referred to their capacity to build an effective learning environment, communication of learning goals, demonstration of professional attitude, provision of feedback and evaluation of resident's knowledge, skills and attitudes.<sup>17</sup> Feedback and ongoing assessment of trainees' educational progress is a vital role of supervisor. SETQ instrument covers the areas of supervisor's role modeling and teaching practices, for example, making positive learning climates and feedback.<sup>18,19</sup> Assessment of sufficient supervision in post graduate residency trainings is done in developed countries to assess their clinical training execution.<sup>9</sup> Personality traits are genuinely enduring attributes inside the person that impact and influence exchanges with their environment.

The all-around approved and well-validated Five Factor Model classified identities in five broad domains: conscientiousness, agreeableness, extraversion, neuroticism (emotional stability), and openness.<sup>20</sup> Research indicates that top acting clinicians may well be known by their personality attributes. Teachers' temperament attributes considerably impact their performance and perseverance.<sup>21</sup> Conscientiousness alludes to constancy and incorporates characteristics, for example, being mindful, composed, organized and careful. Agreeableness refers to amicability and incorporates being thoughtful, agreeable, adaptable and tolerant. Research proposes that agreeableness has positive relations with work execution where social association is a piece of the activity.<sup>12</sup> Neuroticism tends to be showing emotion, unstable, anxious and impulsive while openness tend to possess preference for novelty and are intellectually curious.<sup>22</sup> Research shows that conscientiousness and agreeable traits of clinician personality are strongly associated with their work engagement and work related dedication.<sup>23</sup> However influence of personality traits in relation to supervisor's role as teachers in residency training is under explored.<sup>24</sup> After reviewing literature it was hypothesized that conscientiousness and agreeable traits of supervisor's personality associate decidedly with their overall teaching practices and in addition with individual domain of teaching practices in residency training.

## Subjects and Methods

A multi-centered quantitative correlation study was conducted at four medical colleges and six affiliated postgraduate training institutions of Rawalpindi/Islamabad from 1st February to 30th May, 2017 on post graduate trainees and their respective supervisors. Sample size calculated using significance level of .05 with 95% confidence interval was 121. 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. All registered supervisors of selected institutes currently supervising trainees and having an experience of more than six months were included both from clinical and basic sciences specialties. Two residents of selected supervisors who consented to participate were selected by simple random method. Newly inducted trainees with less than six month training and those on elective rotation were excluded. Informed written consent was taken both from supervisors and their respective trainees. Supervisors assessed their personalities by using self-administered (Big Five inventory BFI=15 items) questionnaire. Residents evaluated their supervisors by using Systematic Evaluation of Teaching Qualities questionnaire (23 items and 5 subscales). Two residents were selected to evaluate one supervisor to avoid any potential bias. SPSS version 21 was used to analyze data. Mean and standard deviation were calculated for continuous variables and frequencies for categorical. Correlation between personality traits of supervisors and their teaching performances was determined by using Pearson Correlation coefficient ( $r$ ). Inter scale correlation between mean scores of BFI and SETQ as whole as well as between sub scales of two instruments were also determined. Reliability of instruments was established by determining Cronbach's alpha values. P values <.05 was taken as statistically significant.

## Results:

Majority (78) of supervisors participating in this study were males (64.5%) with mean age of 53.8 years. 90 (74.4%) supervisors were from clinical specialties, 14 (11.6%) from preclinical specialties and 17 (14%) were from basic science. Majority of postgraduate trainees (70) were females (57.9%) with mean age of 30.2. 45 (37.2%) trainees were 2nd year residents, 36 (29.8%) were first year residents, 29 (24%) were third year

residents and only 11 (9.1%) trainees were fourth year residents. Majority (83) of trainees were FCPS residents (68.6%) followed by MPhil trainees 23 (19%), MCPS trainees 12 (9.9%) and MD/MS trainees 3 (2.5%). Inter-scale correlation between Big five inventory and systematic evaluation of teaching performances (SETQ) questionnaire as a whole was  $r = .124, p = .175 (>.05)$  (Table 1-4).

**Table 1: Big five inventory (BFI) to assess personality traits of supervisors**

Domains	Mean & SD	Reliability Cronbach's a
Extroversion(EX)	3.3 ± 1.2	.91
Conscientiousness(CO)	4.1 ± .91	.84
Agreeableness(AG)	3.9 ± .82	.75
Openness (OP)	3.9 ± .62	.62
Neuroticism(NU)	3.5 ± 1.1	.89
Reliability of whole instrument	3,7± .54	.65

**Table.2: Systematic evaluation of teaching qualities (SETQ) to assess teaching performances of supervisors.**

Domains	Mean & SD	Reliability Cronbach's a
Learning climate (LC)	4.3±.54	.91
Professional attitude towards PGTs (PA)	4.3±.60	.83
Communication of goals (COG)	4.1±.65	.90
Evaluation of PGTs (EV)	4.1±.66	.90
Feedback	4.1±.77	.78
Reliability of whole instrument	4.2± .55	.73

**Table.3: Correlation between different traits of personality and SETQ as a whole.**

Independent variable (Personality traits)	Dependent variable	Pearson correlation coefficient (r)	p- value
Extroversion(EX)	Teaching performance (overall)	.11	.20
Conscientiousness(CO)		.16	.06
Agreeableness (AG)		.06	.49
Openness (OP)		.02	.77
Neuroticism(NU)		.63	.49

**Table.4: Correlation between different traits of personality and subscales of SETQ.**

Dependent variable	Learning climate	Professional Attitude		Communication of goals		feedback		Evaluation		
		r	p	r	p	r	p	r	p	
Extroversion (EX)	.15	.08	.00	.94	.21	.01*	-.01	.89	.13	.15
Conscientiousness(CO)	.18	.04*	.20	.02*	.06	.51	.18	.04*	.10	.26
Agreeableness (AG)	-.04	.59	-.02	.77	-.04	.63	-.11	.21	-.03	.67
Openness (OP)	-.03	.74	.00	.92	.12	.18	.04	.49	-.03	.67
Neuroticism (NU)	.08	.37	.04	.59	.06	.47	.09	.30	-.00	.94

\*Correlation is significant at the 0.05 level

## Discussion

A statistically insignificant positive correlation ( $r = .124, p = .175$ ) was found between personality of supervisors and their teaching performance in residency training. Statistically an insignificant correlation was found between different traits of personality and overall teaching performance. Supervisors professional attitude towards PGT and ability to maintain positive learning environment had highest mean scores followed by communication, evaluation and feedback. These findings reveal the appreciation of non-biased and professional approach of supervisors towards their trainer role in residency training. Professional attitude towards residents and evaluation of residents had highest odd ratios for the supervisor's role of physicians.<sup>25</sup> Correlation between conscientiousness and teaching performance of supervisor was negative with p value slightly greater than 0.05, thereby rejecting the study hypothesis stating a positive correlation between conscientiousness and agreeable trait of supervisors personality and their teaching performance in residency training. Since Conscientiousness people are active learners, supervisors having high mean score on this trait but negative association with teaching practices may be explained by non-contagious nature of this trait in terms of teaching residents to be active learners. This finding contradicted the results of a study which showed conscientiousness to be strongly associated with supervisors' engagement in their teacher and doctor work. Results of the same study showed that agreeable supervisors are more engaged teachers in residency training, thereby contradicting the findings of present study possibly because of non-approachability of supervisors in some clinical specialties.<sup>23</sup> Results of the same study showed that there was no direct association between any of the personality traits and teaching performance, rather

than its work engagement of supervisors which mediate their teaching performance.<sup>23</sup> A statistically significant positive correlation was observed between conscientiousness trait of supervisor's personality and learning climate, professional attitude and feedback domains of teaching performances. This finding is attributable to the goal, task and achievement oriented nature of conscientiousness trait of supervisors. Whereas results of another study carried out in Netherland showed significant positive correlation of conscientiousness trait with evaluation of residents only ( $r: 0.13, p = 0.01$ ). Results of the same study showed a statistically significant positive correlation between extroversion and overall teaching practices, which were in contrast to present study's findings. Possibly this finding is due to limited satisfaction of trainees regarding demands of modern health care and residency training.<sup>12</sup> Agreeableness was found to have statistically insignificant positive correlation with overall teaching performance and statistically insignificant negative correlation with all subscales of teaching performance (SETQ). This finding was not in line with the findings of another study which qualitatively assessed personality traits and found agreeableness to be a predictor of commitment and professional efficacy.<sup>26</sup>

In light of pilot study results, which showed big five inventory (40 items) infeasible to be used for personality assessment, validated short version comprising of 15 items was used. Expansion of supervisory practices or competencies would be better recommended in light of future researches employing extensive personality assessment. Moreover number of trainees evaluating a supervisor should be more than five to overcome potential bias.

## Conclusion

1. Personality traits of supervisors were concluded to have no effect on their teaching performances in residency training.
2. Conscientiousness( $r = .16, p = .06$ ) and agreeable ( $r = .06, p = .49$ ) traits of supervisor's personality showed statistically insignificant positive relationship with their teaching performances. In the light of these finding null hypothesis was accepted.

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