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Research Article

**FACTORS RELATED TO DEFICIENCY OF CLINICAL  
CAPABILITY AMONG SENIOR MEDICAL STUDENTS**Dr Periea Kiran Nazeer<sup>1</sup>, Dr Tooba Nisar<sup>2</sup>, Dr Naila Afzal<sup>3</sup><sup>1</sup> Akhtar Saeed Medical and Dental College, Lahore<sup>2,3</sup> King Edward Medical University, Lahore**Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:**

**Aim:** To investigate the relationship between socio-demographic factors and clinical competences among senior medical students at SIMS and to identify the most important determinant of clinical incompetence among medical students.

**Place and Duration:** Among the Medical Students of Services Institute of Medical Sciences, Lahore for one-year duration from April 2019 to April 2020.

**Methods:** This was a follow-up study conducted in adult population and senior medical students. In this total 100 people were recruited for the study (60 cases and 40 controls). Simple random sampling was performed. Overall, 50% of all subjects were male and 50% female (Fig. 1). 50% are hostels and 50% none hostel. Hostilities Data has been collected and analyzed by SPSS. The analysis was performed using Epi-info and SPSS.

**Results:** In total, 100 students (60 cases and 40 controls) were recruited for the study. Overall, 50% of all subjects were male and 50% female. In the two-dimensional analysis, socio-demographic factors significantly related to clinical competences included: theoretical overload, failure of the previous exam, hesitation and lack of recognition.

**Keywords:** clinical competences, case-control study, determinants, medical students.

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**INTRODUCTION:**

Clinical competence means personal and technical skills that lead to successful intervention in the event of illness or injury. Senior medical students play a key role as part of a country's health care system as they are ultimately responsible as medical representatives for serving a particular community by gaining sufficient practice in clinical skills which is the basis for fulfilling medical practice<sup>1-2</sup>. Unfortunately, medical students are not very competent for the needs of this age, which is an obstacle to saving lives, the ultimate desirable goal of the doctor, to maintaining a healthy society. So it takes time to see the main factors and determinants that lead to incompetent attitudes among senior medical students may be over. The lack of clinical competences among senior medical students is a serious problem in our company. It has many social, psychological, educational and behavioral determinants<sup>3-4</sup>. A previous study (1993-1998) in the USA found that despite the increase in standardized methods (from 9.1% -48%), so many senior medical students still failed to correctly apply the assessment methods used in clinical practice. Another study found that nearly two-thirds of pre-registration house officers were unable to recall any undergraduate or postgraduate training. Various factors are associated with the lack of clinical competence<sup>5-6</sup>. Mostly in the preclinical years, many students suffer from a lack of direct observation and proper teaching. This lack of proper attention, training, and insufficient clinical knowledge lead to incompetence in practicing clinical skills. At the same time, some students lack the intellectual abilities and proper emotional attitudes<sup>4</sup>, and others even lack confidence in performing routine clinical skills. In the same respect, some senior medical students may feel uncomfortable under pressure and it may take a little longer than usual to understand certain concepts<sup>4</sup> or students are not well versed in the knowledge and pathology behind the disease. In addition to this, a threatening and hostile environment where students are unable to practice skills due to fear of being embarrassed when making mistakes are also some contributing factors. In addition, studies have shown that students are not supervised in a 1: 1 teaching mode. No advanced methods such as objective, structured clinical testing and the use of standardized patients are used to assess clinical effectiveness. It was also found that the lack

of joint problem-solving reduced the competences of senior medical students<sup>7-8</sup>. The current curriculum is also an influencing factor as it does not cover most aspects of the assessment of clinical skills. The lack of practice in problem-oriented classes, interactive skills and the lack of integration of clinical and psychosocial aspects are also some of the determinants of this incompetence. Poor salaries of senior medical students for their work and fewer job opportunities also result in a lack of interest and thus a lack of competence<sup>9</sup>. The instructor experience is also not reinforced in clinical education and is therefore also a major determinant.

**MATERIALS AND METHODS:**

This was a follow-up study conducted in adult population and senior medical students of Services Institute of Medical Sciences, Lahore for one-year duration from April 2019 to April 2020. In total, 100 people were recruited for the study (60 cases and 40 controls). Simple random sampling was performed. Overall, 50% of all subjects were male and 50% female (Fig. 1). 50% are hostels and 50% none. Hostilities Data has been collected and analyzed by SPSS. The analysis was performed using Epi-info and SPSS. Appropriate significance tests were used to assess the relationship between the various exposure variables, the interference variables and the outcome. All subjects who were not clinically competent and clinically competent were included in the study. Recent injuries with congenital deformity were excluded from the study.

**RESULTS:**

In total, 100 people were recruited for the study (60 cases and 40 controls). Overall, 50% of all subjects were male and 50% female (Fig. 1). 50% are hostels and 50% are non-hostilities. It is clear from the chart that men have less incompetence than women. Our results show that men are 46.7% incompetent and 53.3% are women. It is clear from the chart that there is less incompetence among non-hostels than among hostilities. According to our statistical analysis result, incompetence in a hostel is 53.3%, and among hostels is 46.7%. Of the 100 people surveyed, those burdened with theoretical studies were more (75%) clinically incompetent. The risk of clinical incompetence was 8.00 times higher in those burdened with studio work. Thus, the burden of theoretical research was significantly associated (CI 3.117-20.530) with the lack of clinical competence.

Variable	Case (clinically incompetent)		Control (clinically competent)		Odds Ratio	95% CI
	No.	%	No.	%		
<b>1. lack of knowledge (n=100)</b>						
Yes	32	53.3%	19	46.3%	1.323	0.597-2.934
No	28	46.7%	22	53.7%		
<b>2. Lack of practice (n=100)</b>						
Yes	43	71.7%	29	70.7%	1.047	0.436-2.514
No	17	28.3%	12	29.3%		
<b>3. Lack of facilities (n=100)</b>						
Yes	36	60.0%	27	65.9%	0.778	0.340-1.778
No	24	40.0%	14	34.1%		
<b>4. lethargy (N=100)</b>						
Yes	37	61.7%	26	62.4%	0.928	0.408-2.110
No	23	38.3%	15	37.6%		
<b>5. lack of group activity (n=100)</b>						
Yes	41	68.3%	28	68.3%	1.002	0.427-2.352
No	19	31.7%	13	31.7%		
<b>6. lack of support from paramedical staff (n=100)</b>						
Yes	28	46.7%	23	56.1%	0.685	0.308-1.522
No	32	53.3%	18	43.9%		
<b>7. lack of mandatory command (n=100)</b>						
Yes	38	63.3%	24	58.5%	1.223	0.542-2.760
No	22	36.7%	17	41.5%		
<b>8. lack of assistance from senior medical staff (n=100)</b>						
Yes	34	56.7%	24	58.5%	0.926	0.414-2.070
No	26	43.3%	17	41.5%		
<b>9. lack of eagerness to learn (n=100)</b>						
Yes	32	53.3%	23	56.1%	0.894	0.402-1.988
No	28	47.7%	18	43.9%		
<b>10. lack of research involvement (n=100)</b>						
Yes	31	51.7%	24	58.5%	0.757	0.340-1.688
No	29	48.3%	17	41.5%		
<b>11. non availability of proper equipment (n=100)</b>						
Yes	32	53.3%	22	53.7%	0.987	0.445-2.6188
No	28	46.7%	19	46.4%		
<b>12. negligence (n=100)</b>						
Yes	35	58.3%	21	51.2%	1.333	0.600-2.964
No	25	41.7%	20	48.8%		
<b>13. negative extracurricular activities (n=100)</b>						
Yes	25	41.7%	17	41.5%	1.008	0.450-2.257
No	35	58.3%	24	58.5%		

14. poverty (n=100)						
Yes	39	65.0%	30	73.2%	0.681	0.284- 1.627
No	21	35.0%	11	26.8%		
15. physical illness (n=100)						
Yes	45	76.3%	30	73.2%	1.179	0.472- 2.942
No	14	33.7%	11	26.8%		
16. perverted thoughts (n=100)						
Yes	42	70.0%	29	70.7%	0.966	0.404- 2.305
No	18	30.0%	12	29.3%		
17. restricted culture (n=100)						
Yes	34	56.7%	25	61.0%	0.837	0.371- 1.879
No	26	43.3%	16	39.0%		
18. time shortage (n=100)						
Yes	21	35.0%	7	17.1%	2.615	0.990- 6.907
No	39	65.0%	34	82.9%		
19. undesired choice of medical profession (N=100)						
Yes	31	51.7%	25	61.0%	0.684	0.305- 1.532
No	29	48.3%	16	39.0%		
20. ward absentees (n=100)						
Yes	28	46.7%	23	56.1%	0.685	0.308- 1.522
No	32	53.3%	18	43.9%		
21. mental illness (n=100)						
Yes	46	76.7%	29	70.7%	1.360	0.553- 3.345
No	14	23.3%	12	29.3%		
22. Favoritism (n=100)						
Yes	47	78.3%	35	85.4%	0.620	0.214- 1.792
No	13	21.7%	6	14.6%		
23. Lack of teachers concern (n=100)						
Yes	42	70.0%	34	82.9%	0.480	0.180- 1.284
No	18	30.0%	7	17.1%		
24. Perverted thoughts (n=100)						
Yes	42	70.0%	29	70.7%	0.966	0.404- 2.305
No	18	30.0%	12	29.3%		

Of the 100 people surveyed who had not had a prior survey, they were more (86.7%) clinically incompetent. The risk of developing clinical incompetence was 7.074 times greater in those who had had any previous study failure. Thus, the failure of the previous study was significantly associated (CI 2.237-22.363) with a lack of clinical competence. Of the 100 respondents, people were more (80%)

clinically incompetent. The risk of hesitating was 5.333 times greater in people with hesitation. Thus, fluctuation was significantly associated (CI 2.164-13.144) with the lack of clinical competence. Of the 100 people surveyed, those who underestimated were more (68.7%) clinically incompetent. The risk of clinical incompetence was 3.129 times higher in those with non-recognition, so non-recognition was

significantly associated (CI 1.329-7.366) with clinical incompetence. Of the 100 people surveyed who had favoritism, they were more (57.3%) clinically incompetent. The risk of clinical incompetence was 0.620 times greater in those with favoritism. However, favoritism was not significantly associated with a lack of clinical competence (CI 0.214 -1.792). Of the 100 people surveyed, those with no knowledge were more (62.7%) clinically incompetent. The risk of clinical incompetence was 1,323 times higher in people with no knowledge, however, the lack of knowledge was not significantly related (CI 0.597-2.934). Of the 100 subjects, more (59.7%) were among the subjects with no practice. clinically incompetent. The risk of developing clinical incompetence was 1.047 times higher in those without practice. However, the lack of practice was not significantly associated (CI 0.436-2.514) with the lack of clinical competence. Of the 100 people surveyed, those with no amenities were more (57.1%) clinically incompetent, and the risk of clinical incompetence was 0.778 times greater in those with no amenities. However, the lack of amenities was not significantly associated (CI 0.340-1.778) with the lack of clinical competence. Of the 100 people surveyed, those with lethargy were more (58.7%) clinically incompetent, and the risk of clinical incompetence was 0.928 times greater in those with lethargy. However, lethargy was not significantly associated (CI 0.408 - 2.110) with the lack of clinical competence. Of the 100 respondents, those with no group activity were more (59.4%) clinically incompetent, and the risk of clinical incompetence was 1.002 times higher in those with no group activity. However, the lack of group activity was not significantly associated (CI 0.427-2.352) with the lack of clinical competence. Of the 100 respondents, those who did not have the support of paramedics were more (54.9%) clinically incompetent, and the risk of clinical incompetence was 0.685 times greater in those without the support of medical personnel. However, the lack of support from paramedical staff was not significantly associated (CI 0.308-1.522) with the lack of clinical competence. Of the 100 people surveyed, more (61.3%) were clinically incompetent people with no compulsory command. The risk of clinical incompetence was 1,223 times higher in those without compulsory evidence. However, the lack of a mandatory command was not significantly associated (CI 0.542-2.760) with the lack of clinical competence. Of the 100 respondents, those who did not care about their teachers were more (55.3%) clinically incompetent. The risk of clinical incompetence was 0.480 times higher in those who did not care for the teacher. (CI 0.180-1.284) with no clinical competence. Of the 100

respondents, those who did not receive assistance from senior health professionals were more (58.6%) clinically incompetent. The risk of developing clinical incompetence was 0.926 times higher in those who did not receive assistance from senior health professionals. However, the lack of assistance from senior medical personnel was not significantly associated (CI 0.414-2.070) with the lack of clinical competence. Of the 100 respondents, those showing a lack of willingness were more (58.2%) clinically incompetent. The risk of clinical incompetence was 0.894 times higher in those who were unwilling. However, the lack of willingness was not significantly associated (CI 0.402-1.988) with the lack of clinical competence. Of the 100 respondents, those who did not engage in the study were more (56.4%) clinically incompetent. The risk of clinical incompetence was 0.757 times greater in those who were not studied. However, the lack of research commitment was not significantly associated (CI 0.340-1.688) with the lack of clinical competence. More than 61.3% of the 100 respondents were mentally ill. The risk of clinical incompetence was 1,360 times higher in people with mental illness. However, mental illness was not significantly associated (CI 0.553-3.345) with the lack of clinical competence. Of the 100 people surveyed, those with a lack of appropriate equipment were more (59.3%) clinically incompetent. The risk of clinical incompetence was 0.987 times higher in people with a lack of appropriate equipment. However, the lack of appropriate equipment was not significantly associated (CI 0.445-2.188) with the lack of clinical competence. Of the 100 people surveyed, those who had neglected were more (62.5%) clinically incompetent, and the risk of clinical incompetence was 1,333 times greater in neglected individuals. However, neglect was not significantly (CI 0.600-2.964) associated with a lack of clinical competence. people having negative extracurricular activities. However, negative extracurricular activities were not significantly associated (CI 0.450-2.257) with a lack of clinical competence. Of the 100 people surveyed, those affected by poverty were more (56.5%) clinically incompetent, and the risk of clinical incompetence was 0.681 times greater in those in poverty. However, poverty was not significantly associated (CI 0.285-1.627) with the lack of clinical competence. Of the 100 people surveyed, those with physical illnesses were more (60%) clinically incompetent. The risk of clinical incompetence was 1,179 times higher in people with physical illness. However, physical illness was not significantly associated (CI 0.472-2.942) with a lack of clinical competence. Of the 100 people surveyed who had distorted thoughts, they were more (59.2%) clinically

incompetent. The risk of clinical incompetence was 0.966 times higher in people with distorted thoughts. However, distorted thoughts were not significantly associated (CI 0.966-0.404) with the lack of clinical competence. Of the 100 people surveyed, those with restricted culture were more (57.6%) clinically incompetent. The risk of clinical incompetence was 0.837 times higher in people with restricted culture. However, limited breeding was not significantly associated (CI 0.373-1.879) with a lack of clinical competence. Of the 100 people surveyed, those with a shortage of time were more (75%) clinically incompetent. The risk of developing clinical failure was 2,615 times higher in those who were short on time. However, the shortage of time was not significantly associated (CI 0.90-6.907) with the lack of clinical competence. Of the 100 respondents, those who had an undesirable choice of medical profession were more (55.4%) clinically incompetent. The risk of clinical incompetence was 0.684 times higher in those who had undesirable choice of medical profession. However, an undesirable choice of a medical profession was not significantly related (CI 0.305-1.532) with a lack of clinical competence. Out of 100 respondents, those absent from the ward were more (54.9%) clinically incompetent. The risk of clinical incompetence in the ward was 0.665 times higher in those who were absent from the ward. However, those absent from the ward were not significantly associated (CI 0.308-1.522) with the lack of clinical competence. The two-dimensional analysis showed above that some of the factors showed a statistically significant association with theoretical bias, previous study failure, lack of recognition, and hesitation. It has been observed that there are some changes between raw odds ratios and adjusted odds ratios. Large changes were observed that the factors "favoritism", "teacher disinterest" and "perverted thoughts" were found to be significant for many variables, while not significant in the two-dimensional analysis. After the factors of no clinical incompetence were observed, multivariate logistic regression analysis was used to investigate the overall effect of each factor, controlling all factors tested. Only those factors were added to the new model that showed a statistically significant relationship in the earlier model, ie theoretical study load, hesitation, lack of recognition, and failure in any previous test. It was observed that, once all these factors were mastered, it showed a significant association with distorted thoughts, favoritism and lack of knowledge. The strongest relationship after multivariate analysis showed failure in the previous study (OR: 33.84, 95% CI: 3.7 to 302.7), followed by the theoretical bias (OR: 12.3, 95% CI: 1.8 to 83.7) followed by no

evaluation (OR: 8.8, 95% CI: 1.4 to 54.7) followed by hesitation (OR: 8.4, 95% CI: 1.4 to 58, 2).

### DISCUSSION:

This study found that the weight of theoretical studies was related to the lack of clinical competence of senior medical students. Similar results were obtained in the study of Ziaee V, Ahmadinejad Z, Reza A, Morraedji / at the Medical University of Tehran / in 2000. The lack of appreciation was also related to the lack of clinical competence<sup>9-10</sup>. The same results were found in a similar study by Gandy, Shapiro J / at Education Systems American Physical Therapy Association 1111 N Fairfax St Alexandria, VA 2231/1993<sup>11-12</sup>. Hesitation is also associated with a lack of clinical competence. Similar results were obtained in a study conducted by Premadasa IG, Shehab D, Al Jarallah IF, Thalib L / w Kuwait Institute for Medical Specialization, Kuwait / 2008<sup>13-14</sup>. This study found that the lack of clinical competences among medical students was mainly due to negative extracurricular activities, undesirable choice of the medical profession and favoritism. So far, no studies have been conducted in this area<sup>15</sup>.

### CONCLUSION:

The identified determinants of the lack of clinical competence of senior medical students are: burden of theoretical studies, hesitation, lack of recognition, failure in the previous study, and factors such as lack of practice, lack of facilities, lack of knowledge, lethargy, lack of support from paramedical staff, lack of teacher care, lack of help from seniors, lack of willingness to learn, lack of appropriate equipment, negative after-school activities, physical illness, distorted thoughts, lack of research work, lack of time, undesirable choice of a medical profession, absent from the ward, no significant favoritism relationship was found.

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