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Postgraduate Hospital Educational Environment Measure in Urology Program in Saudi Arabia

Abdullah S. Alhussain[1], Rayan S. AlMalki[1], Mohammed AlAbdulqader[1], Turki AlAjmi[1], Abdulrahman AlRuwaily

[1] Imam Muhammad ibn Saud Islamic University, [2] department of Urology, faculty of Medicine, Imam Muhammad ibn Saud Islamic University, Riyadh, Saudi Arabia

Correspondence: Abdullah S. AlHussain, PO Box 50235 , Riyadh, 11523, Saudi Arabia, Tel +966 555975588, Email: abdullah0sh@gmail.com

ABSTRACT

Purpose: The educational environment has a large influence on the success of medical education and overall outcome. There is little data on how the Saudi urological trainees perceive the educational environment in the hospital and the process of obtaining their skills. We conducted our study using validated questionnaire to evaluate the hospital teaching environment for urology residents in Saudi Arabia.

Methods: We have used the postgraduate hospital educational environment measure (PHEEM) to evaluate the perception of the hospital educational environment for residents of urology program. The results are compared between different regions of Saudi Arabia, different health sectors, and level of residency

Results: A total of 57 (55.9%) out of 102 registered residents responses were received. Overall, the residents perceived a good impression (98.2 ±18.3) but there is room for more improvement**.** There was a significant differences in perception among residents of different regions as the southern region has the lowest score (74.8 ± 22.9 p-value =0.01). Residency level significantly affected the perception of role autonomy (P-value=0.01), and overall score (P-value=0.02). However, residents of different health care sectors did not differ significantly in their scores.

Conclusion: Perception of educational environment by Saudi urology residents is reaching a satisfactory level but there's still room for improvement. However, there is a variation of perception results between Saudi regions.

Keywords: PHEEM, Urology program, Educational Environment.

INTRODUCTION

Urology program in Saudi Arabia is a 5-year structured program which is supervised by the Saudi Commission for Health Specialties (SCFHS). The residents are required to learn and practice professional attitude and behaviour towards patients, colleagues and allied health personnel [1,2]**.** The hospital environment of clinical learning is a significant and persuasive factor of work-based learning [3], and it is considered as an essential component of medical education [4].

The hospital environment of the residency program has been linked to program outcomes [5]**.** The good clinical, educational environment activates deep learning, encourages professional intelligence and ensures that both the learning and teaching processes are related to the patients in real life [3]**.** However, there is little data on how the trainee's (residents) perceive the educational environment and the process of obtaining their skills in the hospitals that provide the program.

Postgraduate Hospital Educational Environment Measure questionnaire (PHEEM) is a validated reliable instrument to assess strengths and weaknesses of a certain educational environment as well as the quality assurance process [6,7]**.** We aimed to evaluate the educational-environment perceptions of Saudi urology residents' using validated questionnaire for this purpose. Hospitals that provide a urology residency program for postgraduates would benefit from the results and the feedback given by their trainees in order to acknowledge their strength points and modify the areas that need improvement in order to develop and further enhance their education and training outcomes.

METHODS

Subjects and study design

Between August and September 2017, we conducted a cross-sectional study on 57 urology residents using an English version of the questionnaire which was distributed both electronically and by hard copy to all urology residents of different regions of Saudi Arabia.

The study was done after approval of ethical board of Imam Muhammad ibn Saud Islamic **university.**

The questionnaire

The questionnaire used is The Postgraduate Hospital Educational Environment Measure

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(PHEEM), it is a self-administered 40-item questionnaire. The questionnaire contains demographic questions, and covers a range of topics directly relevant to the educational climate. The PHEEM is divided into 3 parts : the first part includes 14 items to measure the levels of perception of autonomy, the second assesses the perception of quality of teaching which has a subscale of 15 items and the third part to assesses the perception of social support which has a subscale of 11 items. Respondents were asked to choose from a 5-point Likert scale (with varying anchors depending on the questions) An item with a mean score of 3.5 or more is a positive item, an item of 2 or less mean score needs further exploring as it indicates an area of improvement, items with a mean score 2-3 are areas to enhance. There are four items in the questionnaire with negative statements which are scored in reverse order (items 7,8,11 and 13).

An overall score of:

0-40 indicates a very poor educational environment

41-80 indicates plenty of problems

81-120 indicates more positive than negative, but there's room for improvement

121-160 indicates an excellent educational environment

Statistical analysis

Descriptive statistics were calculated using SPSS software version 16. Categorical variables were described by their frequencies, and continuous variables were described by their mean standard deviation, and range. Quantitative variables are tested for normality. The mean level of total scores and subscales were compared between two group using independent t-test and ANOVA test between more than two groups. A *p* value less than 0.05 was considered to be statistically significant.

RESULTS

A total of 57 (55.9%) out of 102 registered residents' responses were received. Majority of them were males 54 (94.7%), junior residents 37 (64.9%), from central region 32 (56.1%), and worked in military hospitals 28 (49.1 %). Table 1 shows the details of demographic characteristics of respondents.

Table1: Characteristics of respondents.

		N (57)	%
Sex	Female	3	5.3
	Male	54	94.7
Residency	R1	10	17.5
	R2	11	19.3
	R3	16	28.1
	R4	15	26.3
	R5	5	8.8
Region	Central	32	56.1
	Western	4	7.0
	Eastern	16	28.1
	Southern	5	8.8
	Northern	-	-
Hospital	MOH	21	36.8
	Academic	8	14.0
	Military	28	49.1

More than two third (71.9%) of our cohort are satisfied with their educational environment. The mean of overall score is 98 (±18) out of 160 , which indicates a positve educational envirnoment (Table 2).

Table2: Descriptive statistics of score and subscales

	Minimum	Maximum	Mean	SD
Perceptions of role autonomy	15.00	47.00	33.14	6.7
Perceptions of teaching	19.00	57.00	38.50	8
Perceptions of social support	10.00	39.00	26.56	5.9
the overall score:	50.00	143.00	98.21	18.3

Analysis of sub-scales (role of autonomy, perception of teaching, and socila support) showed similar results to overall score.-Table 3 presented the interpretation of scores.

Table3: Interpretation of overall scores and scores of each part

Interpretation of scores	**N**	**%**

Overall score perception score		
Plenty of problems	11	19.3
More positive than negative but room for improvement	41	71.9
Excellent Educational Environment	5	8.8
Perception of Autonomy role		
A negative view of one's role	14	24.6
A more positive perception of one's job	38	66.7
Excellent perception of one's job	5	8.8
Perceptions of teaching		
In need of some retraining	10	17.5
Moving in the right direction	36	63.2
Model teachers	11	19.3
Perceptions of social support		
Non-existent	1	1.8
Not a pleasant place	15	26.3
More pros than cons	35	61.4
A good supportive environment	6	10.5

Examination of the difference of scores by gender, level of residency, hospital types, and regions has been done (Table 4).

Table 4: correlation between the mean of scores regarding different variables

Variables	Perceptions of role autonomy	Perceptions of teaching	Perceptions of social support	The overall score
Gender				
Male	33±7	39±8	27±6	98.77±17
Female	29±2.5	37±6	22±3	88±6
P-value	0.30	0.60	0.11	0.32
Residency level				
1-3	31±7	37±8	26±6	94±19
4-5	36±5	41±7	28±5	105±14
P-value	0.01*	0.05	0.10	0.02*
Region				
Central	34±6	39±7	27±6	100±16
Western	26±5	36±9	23±6	88±17
Eastern	36±6	39±8	29±4	104±17
Southern	24±9	30±10	20±6	75±23
P-value	0.01*	0.12	0.01*	0.01*
Hospital				
MOH	32 ±7	36±8	25±5	94±16
Academia	36±5	41±6	28±4	104±14
Military	33±7	40±9	27±7	100±20
P-value	0.52	0.21	0.26	0.33

*Significant P-value

There were no significant differences in the overall scores and the scores of sub-scale between genders, and different health sectors (Ministry of Health (MOH), academic, and military). However, significant differences were found according to level of residency and regions that the residents live in. Senior residents have higher mean scores than junior residents in

overall score, perception of role of autonomy and teaching (*P*-value 0.02, 0.01, and 0.05; respectively). Regarding region, significant differences were found in perception of role autonomy (*P*-value=0.02), social support (*P*-value=0.01) and the overall score (P-value=0.01). The eastern region has a higher overall mean score while the southern region has the least score (*P*-value= 0.01, Table 4).

DISCUSSION

Our study evaluated the hospital educational environment of Saudi urological residents using PHEEM. More than two third of our cohort reported a healthy environment for learning. However, there is variation in the results when we stratified the result according to residency level and different regions of Saudi arabia. Given our findings, this should be taken into account by curriculum planners to improve the educational program.

Binsaleh *et al.* on 2015 had studied the educational environment of 38 urological residents in Saudi Arabia using PHEEM questionnaire. Overall score was 77.7 which indicated plenty of problems and a negative perception of educational environment, the mean score of the role of autonomy indicated negative view of one's role (26.2), of teaching it indicted teachers were in need of some retraining (29.7), and for the social support, it indicated to the unpleasant environment (21.9). Moreover, their results showed that training region had no effect on residents' perception of their educational environment, and no difference of score between levels of residency [8]. However, our results showed that there is an improvement in the urology programs and the score increased in our study in the past three years which could be attributed to the continuous development in SCFHS curricula. Khoja on 2015 had studied 92 family medicine residents using PHEEM. He showed a much lower PHEEM score of 67, the scores of subscales were 26.2, 29.7 and 21.9 for perceptions of role autonomy, teaching, and social support respectively [9].

BuAli *et al.* in Saudi Arabia evaluated paediatric residency learning environment of 6 teaching hospitals on 2014, and they found that the overall PHEEM score was 100.2, with scores of 35, 38. 9 and 26.4 for the subscales role autonomy, teaching and social support respectively [10]. Al-Marshad and Alotaibi evaluated the clinical, educational environment at King Fahad Hospital of Dammam University, and they demonstrated that the overall score was 82.63[11]. These findings are in agreement with our results. However, our results seem to be higher than that previously reported in several Saudi studies.

Our study has several limitations, first, it's a cross-sectional study that may be biased by residual confounders, however we had an excellent response rate which is due to distributing the questionnaire online and by hard copy. Second, there is no available valid Arabic version of the questionnaire and only the English version was distributed. However, the English language proficiency is good for the residents as medical schools in Saudi Arabia were taught in English language.

Our study is one of the fewest studies that examined the education environment for the urology residents. It helps the policy makers and SCFHC to utilize these results to improve the quality of residency programs. Moreover, the graduate medical students can utilize our results to know the regions and hospital with best educational environment. However, research in this area is scarce, and further studies should be done to evaluate extensively the educational environment for the residents, and to look for the correlation of good environment to the outcomes of these programs regarding patient care, clinical knowledge and surgical skills.

CONCLUSION

In the present study, perception of educational environment by Saudi urology residents is reaching a satisfactory level but there's still room for improvement. However, there is a variation of perception results between Saudi regions and different levels of residency. Further studies are recommended with large sample size and several regions.

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