

# Postgraduate trainees' perceptions of the learning environment in a Nigerian teaching hospital

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**Background.** The learning environment represents various factors that describe the learner's experiences in that setting. The learning environment of junior doctors undergoing training programmes in hospitals is considered a major factor determining both academic success and health service delivery performance. Increased performance in both areas requires routine assessment of the learning environment to identify components that need attention.

**Objective.** To evaluate the perception of junior doctors undergoing specialist training regarding the learning environment in a teaching hospital.

**Methods.** This was a single-centre, cross-sectional study, using the Postgraduate Hospital Educational Environment Measure (PHEEM). The questionnaire was used to collect data on the learning environment of junior doctors in all 10 clinical departments at the University of Maiduguri Teaching Hospital, Nigeria. All of the junior doctors ( $n=148$ ) in the hospital at the time of the study received the questionnaire; they constituted the sample size for the survey. Data collected were analysed to assess junior doctors' perceptions of the overall learning environment and of the individual factors in the learning environment as measured by the individual items of PHEEM.

**Results.** The hospital educational environment was rated high, with a score of 98.25. The domains of the environment measure also showed positive perceptions, but revealed specific areas in need of attention as measured by the items of the questionnaire. Significant ( $p<0.05$ ) differences were noted in the perceptions of some items of the environment in the clinical departments.

**Conclusions.** The junior doctors' perceptions of their educational environment were positive. The study was able to identify areas of strengths and weaknesses in the overall hospital learning environment and the specialty departments. Overall, it identified the absence of an informative handbook for junior doctors and quality accommodation and catering facilities when the doctors were on call, as well as excess workload and lack of counselling services as areas that require the most attention to improve the learning environment.

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The West African College of Surgeons (WACS), West African College of Physicians (WACP) and the National Postgraduate Medical College of Nigeria (NPMCN) regulate the postgraduate medical and dental education in the West African region and Nigeria, respectively.<sup>[1,2]</sup>

Currently, progress report forms are completed annually by the trainers, i.e. specialist physicians and surgeons in the various teaching hospitals, to assess the progress of postgraduate training of junior doctors. At regular intervals, the colleges visit these hospitals to assess the facilities for postgraduate training for the purpose of maintaining the standard of training and re-accreditation of the institution for continued training of junior doctors. The term junior doctor in this regard refers to all cadres of doctors, except specialist physicians or surgeons who are fellows of any of the postgraduate medical colleges. These include senior resident doctors, junior resident doctors, medical officers, senior house officers and house officers. The resident doctors are those undergoing the residency training programme in various specialties to become specialist physicians or surgeons under the supervision of consultants. Medical officers, although not enrolled in the residency training programme, also work under and learn from the specialists. The senior house officers and house officers are

junior doctors at different stages of their pre-registration and compulsory supervised training after graduation from medical school. The specialist physicians and surgeons are appointed as consultants in the teaching hospitals to consult and oversee the training of junior doctors. To date, these assessments only focused on the trainees' progress and did not take into consideration their perceptions of the trainers and other components in the environment in which they work, and how these affect their learning. The learning environment or educational environment has been considered to encompass physical (safety, food, shelter, comfort), emotional (security, feedback from trainers, absence of bullying and harassment) and intellectual (learning with patients, relevance to practice, evidence-based, active participation by learners) aspects.<sup>[3]</sup>

Working and learning in a clinical environment represent a challenging phase for doctors in training. Junior doctors in this environment have to achieve a balance between a myriad of things, including care for their patients, adhering to their work schedules, dealing with the loss of a patient, and continuing with their academic pursuits, along with an obligation to their family, and their personal life.<sup>[4]</sup> The type or quality of the learning environment in a teaching hospital affects the motivation for clinical

training, knowledge base and performance of junior doctors.<sup>[5,6]</sup> The teaching hospital has the responsibility of providing satisfactory education for its junior doctors, with the aim of improving the services they render to the public.<sup>[7]</sup> Since recognising the importance of the quality of the learning environment of teaching hospitals in postgraduate medical education, the topic has received increased attention in the literature.<sup>[8-10]</sup> Problems of junior doctors in the learning environment have been noted to include lack of clear objectives regarding the curriculum and its scope. The focus has been on knowledge acquisition, with little emphasis on problem-solving skills. Other problems noted have included high workload, leaving little time for academic activities, as well as the more talked-about teaching-by-humiliation method employed by trainers.<sup>[11]</sup>

Roff<sup>[12]</sup> constructed and validated the Postgraduate Hospital Educational Environment Measure (PHEEM) for hospital-based junior doctors in the UK. This tool is considered reliable for evaluating the quality of the educational environment of teaching hospitals, and has been used to measure the educational environment for junior doctors in several countries.<sup>[5,6,12,13]</sup> The lack of empirical data means that little is known about the way junior doctors perceive their learning environment. Also, it provides an additional needed input on facilities and learning environment as perceived by the trainees. Postgraduate regulatory bodies may use this as part of the assessment tools for the accreditation and re-accreditation of teaching hospitals for the training of junior doctors. The aim of this study was therefore to evaluate the perceptions of junior doctors regarding the learning environment at the University of Maiduguri Teaching Hospital (UMTH), Nigeria, by using PHEEM. The results of this study can serve as a basis for improvement and for future evaluation/comparison of trainees' perceptions of Nigerian postgraduate medical and dental education.

The study therefore set out to determine:

- the junior doctors' perceptions of the hospital learning environment at UMTH
- the effect of area of specialty on the perceptions of the learning environment
- the effect of gender on the perceptions of the learning environment.

## Methods

### Study setting

The study was conducted at UMTH, which is the main tertiary health centre in North-Eastern Nigeria. It is located in Maiduguri, a semi-urban settlement and the capital of Borno State. The hospital serves as a major referral centre for the North-Eastern states and as a training centre for junior doctors in several specialties. Currently, the hospital carries out training of junior doctors in 10 specialty departments: dental surgery, general outpatients, ophthalmology, ear nose and throat, internal medicine, obstetrics and gynaecology, paediatrics, pathology, radiology and surgery.

### Study design and recruitment of participants

The study employed a cross-sectional research approach in assessing the perceptions of the participants with regard to the hospital learning environment. Employing a census survey method of sampling, all doctors below the grade rank of consultant in the various hospital departments and specialties at the time of the study in 2014 were included and constituted the study population. These included the resident doctors, medical officers, senior house officers and house officers. The participants were recruited individually into the study in their departments following an introduction of the objective of the study.

### Data collection method

The study used two self-administered questionnaires to collect data from the participants. The first consisted of short structured questions constructed to collect demographical information, such as the participant's gender, age group, training grade, year in current grade and specialty. Information on the participant's perception of the hospital's learning environment was collected with the PHEEM questionnaire. The researchers distributed questionnaires to all the participants by hand and retrieved the completed questionnaires in the same way. To achieve confidentiality, the data obtained from the participants did not include their names and therefore cannot be linked to any individual participant.

PHEEM, as an assessment tool for the learning environment, is simple and practical, taking <5 minutes to complete, and has been validated in several studies, with reliability values of 0.92 and 0.93 using Cronbach's alpha.<sup>[6,12,13]</sup> The questionnaire consists of 40 items with regard to learning environment, divided into three subscales, i.e. perception of role autonomy; perception of teaching; and perception of social support. Responses to each statement were indicated on a 5-point Likert scale as follows: 0 for strongly disagree, 1 for disagree, 2 for uncertain, 3 for agree and 4 for strongly agree. The maximum possible score is 4 or 160 and the minimum is 0 for item score and overall scores, respectively, with higher scores indicating a better educational environment. Four of the 40 items (items 7, 8, 11 and 13) are negative statements and were scored in reverse. Three of the items were modified to suit the context in which the study was being carried out. Item 7 ('There is racism in this post') was not applicable, as most of the junior doctors are Nigerians, but of different tribes. The item was therefore modified to read, 'There is racism/tribalism in this post'. Item 11 ('I am bleeped inappropriately') was also modified because junior doctors are either required to stay in the emergency department or call rooms when on duty, or are fetched at their residence in the hospital quarters when the need arises. This was modified to read, 'I am called inappropriately'. Also, item 17 was modified to read, 'My hours of work conform to the civil service rule', as applicable in the country.

### Data analysis

Analysis of the data obtained was performed using the Statistical Package for Social Sciences (SPSS) version 17.0 (SPSS Inc., USA). Descriptive statistics were reported in the form of frequencies, percentages, means, and standard deviations (SDs). Student's *t*-test was used to compare the item mean and overall PHEEM scores between the genders, while analysis of variance (ANOVA) statistics was used to analyse mean scores of items and overall scores among the training grades and specialties. Statistical significance was inferred at  $p < 0.05$ .

### Ethical approval

The Research and Ethical Committee of the hospital approved the study (ref. no. UMTH/REC/17/0089) before commencement. A detailed explanation was given to each participant, with assurance of confidentiality regarding data collection and analysis. To achieve such confidentiality, names of participants were not included in the data collected. In data analysis, participants were assured that information provided will be de-identified by aggregating responses of individuals into groups and reporting them as means and SDs. Participation was voluntary, with consent sought and obtained from each participant included in the study.

## Results

Of the 148 participants, 108 (66 males and 42 females) completed and returned the questionnaires – a response rate of 73%. Data were received

from all 10 specialty departments of the hospital. The highest response rates were recorded from the ophthalmology, radiology and dental specialties, and the lowest rate (50%) from the surgery specialty. The number of junior doctors in the specialty areas ranged from 2 to 17, distributed among the various cadres of junior doctors, house officers, senior house officers, medical officers, junior registrars and senior registrars (Table 1).

The mean scores and SDs of the 40 items of the PHEEM questionnaire are shown in Table 2. The lowest item score was 1.08 for item 26 ('There are adequate catering facilities when I'm on call'), while the highest was 3.16 ('I have good collaboration with other doctors in my grade'). Items 9 and 32 were scored less than average (2.0) in the perception of the autonomy domain. Items 20, 26 and 38, relating to social support, were also <2.0. These items indicate problem areas in the learning environment. All other items had scores within the range of 2 - 3 ('A more supportive/suitable educational environment, but with need for enhancement'), while only item 29 ('I feel part of a team working here') in the autonomy section and items 7, 13 and 16 in the social support section had scores >3.0.

An overall score of 98.25 was obtained, with a score of 34.52 for perception of autonomy, 37.91 for perception of teaching and 25.76 for perception of social support (Table 3). Also shown in Table 3 are the various domain scores and overall scores for the different specialties. More items were reported with below-average scores in the obstetrics and gynaecology and paediatrics specialties, while dental surgery and ophthalmology did not score less than average for any of the items (Table 4).

**Table 1. Demographic distribution of the participants (N=108)**

Demographic distribution	Frequency (%)
Gender	
Male	66 (61.1)
Female	42 (38.9)
Total	108 (100)
Training level	
House officer	26 (24.1)
Senior house officer	5 (4.6)
Medical officer	22 (20.4)
Junior registrar	36 (33.3)
Senior registrar	19 (17.6)
Total	108 (100)
Specialty	
Dental surgery	16 (14.8)
Medicine	14 (13.0)
Obstetrics and gynaecology	10 (9.3)
Pathology	9 (8.3)
Paediatrics	17 (15.7)
Surgery	10 (9.3)
Radiology	14 (13.0)
Ophthalmology	2 (1.9)
Ear, nose and throat	3 (2.8)
General outpatient department	13 (12.0)
Total	108 (100)

Using Kruskal-Wallis (data normally distributed) one-way analysis of variance (ANOVA), comparison of these scores among the specialties and the training grades did not show any statistically significant difference, with  $p=0.055$  and  $p=0.478$ , respectively. The Mann-Whitney *U*-test for domain (perception of role autonomy,  $p=0.796$ ; perception of teaching,  $p=0.186$ ; perception of social support,  $p=0.867$ ) and overall scores between the genders also did not show statistically significant differences ( $p=0.592$ ). However, differences were noticed using one-way ANOVA in item scores among the specialties (Table 5). Post-hoc analysis using the Tukey honest significance difference (HSD) (equal variance assumed) and Games-Howell (equal variance assumption not met) statistics revealed the specialties with significant differences.

Junior doctors in radiology had a significantly better perception (mean 3.29 (SD 0.47)) of the appropriate level of responsibility (item 5) compared with those in internal medicine (2.14 (1.01)). Dental surgery (1.19 (0.98)) and internal medicine (1.21 (1.12)) specialties rated item 9 significantly lower than obstetrics and gynaecology (2.80 (0.92)). The doctors in radiology (3.07 (0.73)) and obstetrics and gynaecology (3.50 (0.71)) gave significantly better ratings to item 14 than respondents from internal medicine (1.86 (1.09)), dental surgery (2.19 (1.11)) and paediatrics (2.12 (0.93)).

The perceptions of junior doctors in ophthalmology (3.00 (0.00)) and radiology (3.14 (0.77)) about their hours of work conforming to the civil service rule were significantly better than those of their colleagues in internal medicine (2.00 (0.96)) and surgery (1.10 (0.88)). Item 26 revealed a statistically significant difference among the specialties ( $p=0.013$ ). A post-hoc Tukey HSD test revealed a significant difference between respondents in radiology (2.00 (1.24)) and those in obstetrics and gynaecology (0.50 (0.71)) and surgery (0.60 (0.52)) regarding the quality of the catering service while on call.

Paediatric (1.29 (1.21)) and obstetrics and gynaecology (0.60 (1.00)) specialties had a greater level of disagreement with item 32 ('My workload in this job is fine') compared with the response from dental surgery (2.81 (1.05)), pathology (2.78 (0.67)), radiology (2.79 (0.80)) and ophthalmology (3.00 (0.00)). Respondents from ophthalmology (3.00 (0.00)) rated the mentoring skills of their teachers significantly higher than the junior doctors in paediatrics (2.00 (1.06)) and there was also better feedback from them than from junior doctors in the general outpatient department (GOPD) (1.85 (0.99)).

## Discussion

This study used PHEEM to assess the educational environment of junior doctors in a teaching hospital setting involving all the specialty departments. It also included junior doctors who are not yet in the residency programme, e.g. medical officers, senior house officers and house officers. From the results it was evident that PHEEM is a reliable tool for assessing the strengths and weaknesses of the postgraduate hospital training environment.<sup>[14]</sup>

The learning environment in the hospital was valued fairly well by the junior doctors, but with room for improvement, as shown by a score of 98.25, corresponding to the 'more positive than negative environment' according to the criteria proposed by PHEEM.<sup>[12]</sup> The three subscale scores also revealed that there was a more positive perception towards the role of autonomy, and that the perceptions of teaching were moving in the right direction. Furthermore, it was found that the perceptions of social support had more positives than negatives.

The lowest recorded item score was 1.08 (item 26: 'There are adequate catering facilities when I am on call') and the highest was 3.16 (item 16: 'I

**Table 2. Mean scores of each item of the PHEEM questionnaire**

Item	Domain	Mean (SD)
<b>Perception of role of autonomy</b>		
1	I have a contract of employment that provides information about hours of work	2.20 (1.17)
4	I had an informative induction programme	2.07 (1.13)
5	I have the appropriate level of responsibility in this post	2.81 (0.98)
8	I have to perform inappropriate tasks	2.38 (1.15)
9	There is an informative junior doctors' handbook	1.75 (1.08)
11	I am called inappropriately	2.56 (1.05)
14	There are clear clinical protocols in this post	2.44 (1.00)
17	My hours of work conform to the civil service rule	2.19 (1.22)
18	I have the opportunity to provide continuity of care	2.86 (0.63)
29	I feel part of a team working here	3.01 (0.83)
30	I have opportunities to acquire appropriate practical procedures for my grade	2.81 (0.83)
32	My workload in this job is fine	1.96 (1.30)
34	The training in this post makes me feel ready to be a senior registrar/consultant	2.62 (0.92)
40	My clinical teachers promote an atmosphere of mutual respect	2.82 (0.98)
<b>Perception of teaching</b>		
2	My clinical teachers set clear expectations	2.73 (1.01)
3	I have protected educational time in this post	2.21 (1.11)
6	I have good clinical supervision at all times	2.28 (1.11)
10	My clinical teachers have good communication skills	2.94 (0.86)
12	I am able to participate actively in educational events	2.82 (0.91)
15	My clinical teachers are enthusiastic	2.80 (0.83)
21	There is access to an educational programme relevant to my needs	2.16 (1.06)
22	I get regular feedback from seniors	2.48 (0.89)
23	My clinical teachers are well organised	2.51 (1.05)
27	I have enough clinical learning opportunities for my needs	2.03 (1.13)
28	My clinical teachers have good teaching skills	2.91 (0.76)
31	My clinical teachers are accessible	2.77 (0.97)
33	Senior staff utilise learning opportunities effectively	2.25 (0.93)
37	My clinical teachers encourage me to be an independent learner	2.74 (0.97)
39	My clinical teachers provide me with good feedback on my strengths and weaknesses	2.28 (1.05)
<b>Perception of social support</b>		
7	There is racism/ tribalism in this post	3.03 (1.02)
13	There is sex discrimination in this post	3.07 (1.04)
16	I have good collaboration with other doctors in my grade	3.16 (0.63)
19	I have suitable access to careers advice	2.25 (1.09)
20	This hospital has good-quality accommodation for junior doctors, especially when on call	1.79 (1.24)
24	I feel physically safe within the hospital environment	2.69 (0.98)
25	There is a no-blame culture in this post	2.06 (1.09)
26	There are adequate catering facilities when I am on call	1.08 (1.09)
35	My clinical teachers have good mentoring skills	2.53 (0.97)
36	I get a lot of enjoyment out of my present job	2.29 (1.00)
38	There are good counselling opportunities for junior doctors who fail to complete their training satisfactorily	1.90 (1.18)

PHEEM = Postgraduate Hospital Educational Environment Measure; SD = standard deviation.

**Table 3. Subscale and overall PHEEM scores of the different specialties**

Score	Assessment	Dental surgery	Medicine	O & G	Pathology	Paediatrics	Surgery	Radiology	Ophthalmology	ENT	GOPD	Mean (SD)
<b>Perception of role of autonomy</b>												
0 - 14	Very poor											
15 - 28	A negative view of one's role											
29 - 42	A more positive perception of one's job	35.1	30.4	36.0	38.1	32.2	32.2	40.6	36.5	32.7	32.9	34.5 (7.3)
43 - 56	Excellent perception of one's job											
<b>Perception of teaching</b>												
0 - 15	Very poor											
16 - 30	In need of some training											
31 - 45	Moving in the right direction	38.3	34.0	39.4	40.9	33.8	40.4	44.2	41.0	40.3	33.9	37.9 (8.8)
46 - 60	Model teachers											
<b>Perception of social support</b>												
0 - 11	Not existent											
12 - 22	Not a pleasant place											
23 - 33	More pros than cons	26.9	24.4	24.2	25.1	24.1	26.6	30.3	27.5	29.0	23.8	25.8 (5.6)
34 - 44	A good supportive environment											
<b>Overall</b>												
0 - 40	Very poor											
41 - 80	Plenty of problems											
80 - 120	More positive than negative	100.3	88.8	99.6	104.1	90.1	99.2	115.1	105	102	90.6	98.3 (20.0)
121 - 160	Excellent											

PHEEM = Postgraduate Hospital Educational Environment Measure; O & G = obstetrics and gynaecology; ENT = ear, nose and throat; GOPD = general outpatient department; SD = standard deviation.

**Table 4. Items rated below average by the different specialties**

Specialty	Items with scores <2.0
Dental surgery	-
Ear, nose and throat	17, 20
General outpatient department	20
Medicine	20, 25
Obstetrics and gynaecology	17, 19, 20, 32
Ophthalmology	-
Paediatrics	20, 23, 25, 36
Pathology	20, 25
Radiology	20
Surgery	17

have good collaboration with other junior doctors'). The majority of the items (31 of 40) had mean scores between 2 and 3, with only four items scoring >3 (7, 13, 16 and 29). These results highlight that the majority of the areas in the learning environment need improvement. However, it is also good to know that the areas where the junior doctors were most satisfied with their environment border on racism and tribalism, sex discrimination, collaboration with other junior doctors and sense of belonging to a team. In a study by Vieira,<sup>[15]</sup> it was noted that the residents also had a positive perception of the learning environment in terms of gender and racism. Clapham *et al.*<sup>[16]</sup> reported similar findings in a small sample of intensive-care residents in a hospital in the UK.

Weaknesses identified in the environment, as indicated by a mean score of <2, appeared in five items (9, 20, 26, 32 and 38). This signifies that there was no information booklet available for junior doctors to orientate them with regard to the postgraduate programme. Moreover, other weaknesses

**Table 5. Analysis of the differences in item scores among the specialties**

Item number	Statement	F-value	p-value
5	I have the appropriate level of responsibility in this post	2.545	0.011
9	There is an informative junior doctors' handbook	3.096	0.003
14	There are clear clinical protocols in this post	3.551	0.001
17	My hours of work conform to the civil service rule	3.023	0.003
26	There are adequate catering facilities when I am on call	2.498	0.013
32	My workload in this job is fine	5.559	<0.001
35	My clinical teachers have good mentoring skills	2.489	0.013
39	My clinical teachers provide me with good feedback on my strengths and weaknesses	1.999	0.047

were: inadequate accommodation and catering facilities when on call, excessive workload and absence of good counselling opportunities. Vieira<sup>[15]</sup> reported low scores in four of these areas, suggesting lack of professional and personal support in the learning environment. Similarly, Al-Sheikh *et al.*<sup>[14]</sup> reported the lowest scores for catering, housing, information and guidance. The absence of adequate orientation of junior doctors at the beginning of their training, as seen with the low score for item 9, may have an effect on their learning, as this could result in difficulties in making informed choices in career paths from peculiarities of the different clinical rotations. An information handbook detailing the job description for every member of the health team could reduce the possibility of exploitation.<sup>[14]</sup>

It is interesting to note that three of these items (20, 26 and 38) are in the domain of the perception of social support. The results of these items revealed that the educational environment is weak in the area of social support. There was general agreement among the departments with regard to item 20 ('This hospital has good-quality accommodation for junior doctors, especially when on call') as 9 of the 10 specialties scored it <2.0 (Table 4). These three items in the social support domain, and the low score for item 32 ('My workload in this job is fine'), may support the association between the residency training programme and stress, depression and burnout, which are thought to be mainly due to excessive working hours, sleep deprivation, challenging patients and an aggressive and challenging work environment.<sup>[17-19]</sup> To improve the learning environment of the doctors in this study, attention should be given to the following focus areas: developing and providing the junior doctors with an information handbook, improving the quality of the accommodation, improving the catering facilities, finding a way to reduce the workload, and providing counselling for the junior doctors if needed. Lleras and Durante,<sup>[20]</sup> in a recent study, found a significant negative correlation between the educational environment and burnout among resident doctors, using PHEEM and Maslach Burnout Inventory questionnaires. The approach to reducing burnout in residents should include other components of the working environment, as a reduction in the workload alone has been found to be unsuccessful.<sup>[21]</sup>

Analysis of the overall scores and subscale scores for level of training, gender and specialty department revealed no significant difference in the overall and subscale scores. Khoja<sup>[22]</sup> reported a significantly better perception of the learning environment by the junior doctors in their last year of training compared with those in the first 3 years. Possible reasons were reduced workload, greater contact time with their trainers, and increased supervision and feedback from their trainers. However, Clapham *et al.*<sup>[16]</sup> found that senior house officers scored the learning environment better

than other junior doctors who are ahead of them in training. Boor *et al.*,<sup>[6]</sup> with similar results as Clapham *et al.*,<sup>[16]</sup> explained that the house officers and senior house officers may have a better perception of the learning environment, as they have lesser responsibilities and stress compared with those faced by other junior doctors who are ahead of them in training. The differences noted in the results of the abovementioned studies may be due to varying regulations regarding duties and workload for the levels of trainees in different institutions. Kanashiro *et al.*,<sup>[23]</sup> as in the current study, did not find significant differences in the perception of the learning environment among the house officers, senior house officers and the other junior doctors who are ahead of them in training level. However, the authors noted significant gender differences in the scores. Our study and other studies<sup>[12-14]</sup> did not find significant gender differences in PHEEM scores.

Although all the specialties or departments were in the same hospital, there was a significant difference in their perceptions of some aspects of the learning environment, as seen, for example, with items 9, 17, and 32, where the junior doctors in dental surgery, internal medicine, ophthalmology, radiology, paediatrics and obstetrics and gynaecology had significantly different perceptions, respectively, than their counterparts in other specialties. These differences may reflect variations in the organisation and use of set protocols in the departments, as well as staff strength and workload assigned to individuals. Some specialties may make increased demands on the time of the junior doctors. This may explain why junior doctors in paediatrics and obstetrics and gynaecology reported a significantly greater level of disagreement with their workload. Algaidi<sup>[24]</sup> also noted differences in the perceptions of the learning environment among specialties in the same hospital, where he reported a significantly better perception of the learning environment by the junior doctors in general surgery compared with those in internal medicine. According to Algaidi,<sup>[24]</sup> this is an indication that the learning environment in each department is as important as the general hospital environment, which may have significant effects on the quality of the learning environment.

## Conclusion

This study has identified areas of strengths and weaknesses in the hospital educational environment and the 10 individual specialty departments in the same hospital. Interventions in the areas of weaknesses identified should be implemented and followed up with regular assessments of the educational environment using PHEEM as a means of quality control. Although this study presented findings from only one hospital, the results could assist other curriculum developers in the country's postgraduate medical training programmes in assessing their learning environment, making comparisons

and introducing measures to improve the environment for the training of junior doctors. This is important, as the quality of the junior doctors' experiences in the learning environment relates to the quality of training and therefore the quality of care received by the patients they care for.

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