Perception Of Students Of The Family Health Medical School On The Clinical Learning Environment And Attributes Of Clinical Educators

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Abstract

Introduction: The clinical learning environment is often a hectic and turbulent workplace with many variables that have a significant impact on student learning. The clinical educator plays an important role in providing a fertile environment for clinical learning. The objective of this study was to determine the attributes of clinical educators and the perception of clinical year students on the clinical learning environment at the Family Health Medical School.

Methods: This was a cross-sectional study conducted at the Family Health Medical School among clinical year students. The McGill Clinical Teacher Evaluation Tool and an adopted form of the Clinical Learning Environment Inventory were used to collect data via an online survey. Descriptive statistics were used to determine the general perception of students about their clinical learning environment and clinical educators' attributes. Independent t-tests were used to determine the difference in means between different levels of study and gender about their perceptions of the clinical learning environment and clinical educators' attributes.

Results: Out of 88 students in the study period, 68 participants responded. Students had a positive perception of their clinical learning environment with a mean score of 138.3 ± 20.3 (minimum = 98, maximum = 178). Students also had high ratings of their clinical educators' attributes with a mean score of 112.6 ± 19.1 (minimum = 59, maximum = 146). Perception of clinical learning environment differed significantly with gender (t = 2.158, p = 0.035), with males having a more positive perception.

Conclusions: Students at the Family Health Medical School had a positive perception of their clinical learning environment and highly rated the attributes of their clinical educators.

Keywords: Medical education, learning environment, learning evaluation

Introduction

Medical students undergo both pre-clinical and clinical training.[1] All over the world, medical schools strive to graduate competent doctors who are fully equipped to handle common medical conditions in their community. This is achieved by providing real-life clinical experiences that can help students to integrate pre-clinical knowledge with medical practices.[2] Thus as part of their training, students are tutored in a clinical environment by

clinical educators. During the clinical training sessions, the students acquire new knowledge, comprehend and integrate information and apply it to the patients. They relate with real patients, receive supervised clinical training from clinical teachers, and are exposed to patients' problems.[3] The clinical learning environment is defined as the interactive network of forces influencing student learning outcomes in the clinical setting.[4] These variables include the student, modules, tutors, patients, allied health professionals, outpatient clinics, operating theatres, as well as the emotional, social and psychological factors that may affect student learning.[5] The purpose of the clinical teaching environments include providing medical services, education of students, and serving as a platform for research.[6] Thus, it has the responsibility to provide a conducive learning environment for trainees. The clinical educator plays an important role in providing a fertile environment for clinical learning.[7] Therefore, indispensable in the success of clinical education is the relationship between clinical educators and students, and in effect how students perceive the clinical educators. The knowledge, personal and supervisory qualities of clinical trainers are essential characteristics in the effectiveness of clinical learning.[2] Students at the Family Health Medical School, undergo both pre-clinical and clinical education. It lasts for six academic years, divided into three pre-clinical and three clinical education each.

The pre-clinical learning phase focuses on building theoretical knowledge that underlies medical practice in areas such as anatomy, biochemistry, physiology and pharmacology. During the clinical years, they are expected to apply all that has been taught in the first three years into the practical management of patients. Though they still have some lectures and tutorials, most of the attention is on clinical scenarios, hospital and community rotations. They are introduced to new clinical skills and knowledge during bedside teachings, ward rounds, ward covers and night duties, all in a bid to equip them adequately as doctors. During their hospital rotations, they remain under the supervision and tutelage of clinical educators who are specialists in whatever field of medicine they are studying at the time. These specialists assign them to various responsibilities as the most junior members of the patient care team. They also assess each student during the rotation to identify any areas that need correction and improvement. It is therefore important to evaluate how students perceive their current clinical environment and their clinical educators, in order to bridge the gap and increase clinical learning effectiveness.

Method

This cross-sectional study was conducted at Family Health Medical School, situated in Teshie, a part of the Ledzokuku Municipal District in the Greater Accra region. The study population were clinical year students at the Family Health Medical School who had had at least one clinical rotation. A census method of data collection was used, to sample 88 students. Data was collected with online self-administered questionnaires which was sent to participants via email. All ethical considerations were adhered to during the study. Informed consent was obtained from each participant.

The McGill Clinical Teachers' Evaluation (CTE) Tool and Clinical Learning Environment Inventory were used for the survey. The McGill Clinical Teachers' Evaluation (CTE) tool has been validated for use in assessing clinical tutors' effectiveness in several studies (McLeod 1991). It is a 25- item tool that lists 25 attributes of effective clinical teachers anchored on a 5- point Likert scale from "very strongly agree (6)" to "very strongly disagree (1)". The higher the total agreements score on a particular attribute, the better the rating on it. A total mean agreement scores greater than 80 is considered a more positive rating of clinical educators. The Clinical Learning Environment Inventory (CLEI) This tool was developed in Australia for nursing students, with a validity of 0.39 and a reliability of 0.73. It is a 42- item tool, consisting of six scales of clinical learning from a student's perspective. These scales are individualization, innovation, involvement, personalization, task orientation and satisfaction. The scales with the corresponding question numbers as arranged on the questionnaire is shown in table 1

Table 1 Scale for assessing the clinical learning environment

Scale	Question numbers
Personalization	1, 7, 13, 19, 15, 31, 37
Student Involvement	2, 8, 14, 20, 26, 32, 38
Task orientation	4, 10, 16, 22, 28, 34, 40
Innovation	5, 11, 17, 23, 29, 35, 41
Individualization	6, 12, 18, 24, 30, 36, 42
Satisfaction	3, 9, 15, 21, 27, 33, 39

Each question was scored on a 5- point Likert scale, where 1 indicates strongly disagree, 2 indicates disagree, 4 indicates agree and 5 indicates strongly agree. Invalidly scored items, such as questions left unanswered, were scored 3. Questions 2, 5, 6, 9, 11, 14, 16, 21, 22, 25, 26, 27, 29, 31 and 36. A total of 16 were scored in the reverse sense. Participants were asked to indicate of the above which best describes their perception of the particular statement. Grading was done according to the scales. The score indicates the individual's perception of the clinical learning environment with respect to that specific subscale. A mean score of 18 or more in a particular field indicates a positive perception of that particular subscale and an overall mean rating of 110 or more indicates a positive perception of students regarding the clinical learning environment. The scores for the statements relating to negative attributes were computed in the reverse order. Data analysis was carried out using SPSS version 25. Descriptive statistics were computed to present the distribution of study participants. T-test was used to compare students' perception between the gender and level of the student. Approval for conduct of the study was obtained from the Proposal Review Committee of the Department of Community Health, University of Ghana Medical School.

Results

Demographic characteristics of study participants A response rate of 77.3%, consisting of 68 clinical year students at the Family Health Medical School. The majority of participants (38 people, 51.5%) were males. Level 500 students formed the majority of participants (41 people, 60.3%). Respondents were from students in various clinical rotations and the average age of participants was 28.5 ± 4.9 (Table 2)

Table 2 Demographic characteristics of study participants

Variables	Groups	Frequency	Percentage
Age		Mean = 28.5	SD = 4.9
Sex	Male	35	51.5
	Female	33	48.5
Level of training	Level 500	41	60.3
	Level 600	27	39.7
Most recent/ current rotation	Public health	6	8.8
	Surgery	18	26.5
	Obstetrics & Gynecology	27	39.7
	Medicine	1	1.5
	Paediatrics	6	23.5

Perceptions of students about clinical learning environment and clinical educator's attributes.

Students have a positive perception about their clinical learning environment, with a mean and standard deviation of 138.3 ± 20.3. The highest score domain of the CLEI was the satisfaction domain, with a mean and standard deviation of 25.74 ± 6.0, as shown in Table 3. Students also have a positive perception of their clinical educators' attributes, with a mean and standard deviation of 112.6 ± 19.1. The highest scored question from the McGill CTE was "Encourages me to take responsibility for my learning", with a mean of 5.01 ± 0.9 as shown in Table 4.

Table 3 Perception of students about the Clinical learning environment

Domain	Minimum	Maximum	Mean/SD
CLEI - Personalization	8	30	23.3 ± 3.1
CLEI - Student involvement	16	29	25.3 ± 5.01
CLEI - Task orientation	14	33	21.5 ± 3.8
CLEI - Innovation	13	28	21.0 ± 4.1
CLEI - Individualization	13	29	25.7 ± 6.0
CLEI - Satisfaction	7	34	138.3 ± 20.3
Clinical learning environment inventory	98	178	138.3 ± 20.3

Table 4 Perception of students about the attributes of clinical educators

Clinical Educators Attributes	Minimum	Maximum	Mean
McGill CTE	59	146	112.6 ± 19.1
Conveys enjoyment of associating with me and my colleagues	1	6	3.9 ± 1.5
Encourages me to take responsibility for my own learning	3	6	5.0 ± 0.8

Males had a slightly higher perception of the clinical learning environment in all domains of the CLEI, which was only statistically significant for the Student Involvement domain of the CLEI (t-2.953, P < 0.010) and the overall perception (t = 2.158, p = 0.035). Details are in Table 5. Males also had a slightly higher perception of the clinical educators' attributes, but this was not statistically significant (t = 0.913, p = 0.365)

Table 5 Differences between perceptions of males and females about the clinical learning environment

Domain	Sex	Mean ± SD	P - value
CLEI Personalization	Male	22.5 ± 3.9	0.105
	Female	20.6 ± 5.4	
CLEI Student involvement	Male	24.3 ± 2.4	0.004*
	Female	22.2 ± 3.3	
CLEI Task orientation	Male	25.8 ± 4.8	0.331
	Female	24.6 ± 5.2	
CLEI Innovation	Male	22.3 ± 3.1	0.100
	Female	20.8 ± 4.2	
CLEI Individualization	Male	21.9 ± 4.1	0.054
	Female	20.0 ± 3.9	
CLEI Satisfaction	Male	26.6 ± 6.6	0.022
	Female	24.8±5.5	

SD standard deviation

From the study, it was revealed that the differences between perceptions of males and females about the clinical educators' attributes the overall Mc Gill CTE was mean (114.7) SD (16.8) for male and mean (110.4) SD (21.3) for female students. There was no statistical significance between the two groups (p = 0.364). Differences between perceptions of students of different levels of study about the clinical learning environment and clinical educators' attributes Students in fifth year of study have a slightly higher perception of the clinical learning environment as compared to final year students, even though this was not statistically significant (t = 1.658, p = 0.102). The only domain where this difference was significant was "Satisfaction" domain, with t = 2.926 and P < 0.005 (Table 6). Students in their final year of study, however, have a slightly higher perception of their clinical educators' attributes, but this difference was not statistically significant (t = 0.384, p = 0.702)

Table 6 Differences between perceptions of students of different levels about the clinical learning environment.

Domain	Level of study	Mean ± SD	P-value
CLEI Personalization	Level 500	21.0 ± 5.0	0.25
	Level 600	22.4 ± 4.3	
CLEI Student involvement	Level 500	23.4 ± 3.3	0.70
	Level 600	23.1 ± 2.7	
CLEI Task orientation	Level 500	26.2 ± 4.7	0.07
	Level 600	23.9 ± 5.3	
CLEI Innovation	Level 500	2 2.0 ± 3.8	0.23
	Level 600	20.9 ± 3.6	
CLEI Individualization	Level 500	21.7 ± 4.5	0.07
	Level 600	19.9 ± 3.2	
CLEI Satisfaction	Level 500	27.4 ± 4.6	0.00*
	Level 600	23.3 ± 7.0	
Clinical learning environment inventory	Level 500 Level 600	141.6 ± 21.0 133.3 ± 18.4	0.10

SD standard deviation

From the study, the difference between perceptions of students in different levels of study, the overall Mc- Gill CTE was mean (111.9) SD (21.9) for level 500 and mean (113.7) SD (14.0) for level 600 students. There was no statistical significance between the two groups (p =0.702).

Discussion

The overall perception of students of the Family Health Medical school on their clinical learning environment was positive. This implies that students consider the learning environment as conducive for learning. Since, the clinical learning environment has been suggested to be positively correlated with students' academic motivation, we can infer that student in Family Health Medical School are academically motivated and this motivation may positively influence their academic output.[9] Previous findings in other settings also report that students find their learning environment as conducive, however, the responsibility is on educators to ensure that students maximize the opportunities available in these learning environments.[10,11,12] Results from the study indicates that students of FHMS are satisfied with their academic environment and their reasons included punctuality of clinical educators, defined students' roles and organized clinical rotation. However, students perceived their individual needs in the clinical learning environment as the least attended to. This may be because educators do not have enough time amidst their busy schedules to go round to talk to individual students during the rotation, thus are not able to extend help to students when they have challenges and may sometimes come off as unfriendly to students. Fifth year medical students have a slightly higher perception of their clinical environment, though this was not statistically significant overall. This is consistent with a study among nursing students, which found that students in their senior years are usually more critical and assess the learning environment more poorly than those in the junior years.[13] This can be attributed to the ability of senior year students to better reflect on clinical practice because they have had a relatively longer time of experience in their clinical rotations. They also have a better understanding of the essential content of clinical practice, including client-centeredness, ethics and professionalism, as well as proper documentation and reporting.[14] The overall ranking of the Family Health Medical School clinical environment by students was found to be high in this study. This is essential for medical education because a conducive clinical learning environment contributes to a student's sense of safety, belongingness, perceived value and self-confidence.[15] We can infer from the results of the analysis that students in FHMS have some sense of safety and a sense of belongingness to the School. The overall ranking of attributes of clinical educators in the Family Health Medical

School was found to be high. Studies in Nigeria and Pakistan also reported similar findings, which indicated that students ranked their clinical educators high on the McGill clinical teachers' evaluation tool.[16,17] This may be because educators can efficiently facilitate the teaching and learning process. The least ranked attribute was "Conveys enjoyment of associating with me and my colleagues". During the clinical rotation students are under the supervision of the clinical educator, and so are frequently in close contact with educators. A perception that the educator does not enjoy associating with students, may prevent students from interacting with the educators which would negatively influence clinical learning. It may also decrease the ability of educators to serve as role models to students which influences students' motivation and professionalism.[18,19] It may also cause students to avoid personal interaction with clinical educators as much as possible, which may have also contributed to the low ranking of the "Individualization" domain on the CLEI.

Further training of clinical educators in teaching may be helpful in this regard. The highest scored question from the McGill CTE was "Encourages me to take responsibility for my learning". Though clinical teachers are to ensure and supervise students for effective learning, students themselves have a role in taking active control over their own learning.[20] Thus educators encouraging students to take responsibility for their own learning lays a good foundation for students to benefit from the clinical learning experience, even in the absence of the educator.

Empowering students to take control of their learning also encourages students to take responsibility for their professional conduct at an early stage in their professional development and has a bearing on the competence of doctors who graduate. Generally, the perception of students in FHMS about their clinical learning environment was positive. Students also have a high rating of their clinical educators on important attributes measured by the McGill clinical teachers' evaluation tool. Males have a higher overall perception of their clinical learning environment than females. There was no significant difference in perception of the clinical learning environment between the two levels of study, i.e. there is no significant difference in the rankings of clinical educators' attributes, between different genders and levels of study.[21] A much larger study involving different medical schools in the country in both public and private institutions may provide direction on measures needed to improve the clinical learning environment, in the national quest to produce high-quality doctors. Health training institutions may need to consider re-orienting health and medical educators on the need to create a supportive learning environment for the trainees.

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