

## **GENDER DIFFERENCES ON MEDICAL STUDENTS' PERCEPTION OF PEER TUTORING LEARNING STRATEGY ON CLINICAL SKILLS TRAINING AT MACARTHUR CLINICAL SKILLS LABORATORY (MCSL)**

**Agbarakwe Haret Akudo (Ph.D) and Augustine Sandra Eberechukwu**

Department of Curriculum Studies and Educational Technology, Faculty of Education,  
University of Port Harcourt, Nigeria

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**ABSTRACT:** *The study investigated medical students' perception of peer tutoring learning strategy on clinical skills training at Macarthur Clinical Skills Laboratory (MCSL) during their Introduction to Clinical Medicine (ICM) sessions. It adopted the descriptive survey design. The population of the study was 98 medical students, 66 of these students were randomly selected. Two research questions and two hypotheses guided the study. The instrument titled Peer Tutoring and Clinical Skills Training (PTCST) was used to collect data and a reliability coefficient of 0.85 was obtained using Cronbach Alpha. Data was collected after exposing the students to clinical skills practical sessions for two weeks. The research questions were answered using mean and standard deviation and the null hypotheses were tested using independence sample t-test. The findings of the study revealed that there is no significant difference between male and female medical students' responses on their perception on the influence of peer tutoring on clinical skills training during Introduction to Clinical Medicine (ICM); irrespective of their gender, practicing among classmates enhanced their retention of the basic clinical do –steps, build up their confidence level as well as determined their proficiency level through the instant feedbacks. It was also revealed that during this practice sessions the medical students were sensitive to their gender differences and wished to maintain their dignity during clinical skills practical sessions. The researchers therefore recommends that Peer tutoring learning strategy should be adopted in clinical education while a chaperon should be made available for students during clinical skills practical sessions.*

**KEYWORDS:** Peer Tutoring, Learning Strategy, Clinical Skills, Training, Gender, Clinical Medicine

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### **INTRODUCTION**

The MacArthur Clinical Skills Laboratory (MCSL) is a digital capture educational resource centre funded by Macarthur foundation in collaboration with University of Port Harcourt, Nigeria with the state of the art facility to bridge rote memorization and omission of vital steps during clinical assessment of patients and to harmonize clinical skills procedures during clinical skill training. Olele & Agbarakwe (2017) described the clinical skills laboratory as a centre that offers medical students, doctors and nurses the opportunity to have hands –on training prior coming in contact with patients. The major aim of the clinical skills laboratory is to enhance the acquisition of clinical skills and proficiency development by allowing medical students or trainee doctors to master do-steps in a non- life threatening environment. Thereby, promoting the acquisition of knowledge, skills and attitude in context prior contact with real patients in the ward. It is designed to provide young clinicians the opportunity to harness and master clinical skills procedures that would be used for further clinical practices and studies. In this centre, medical students are put through the rudiments of systematic and procedural

approach to knowledge acquisition and skills performance using a standardized check off, checklist and video models during the training sessions.

At the commencement of their training sessions, the standardized developed check off, check list and its corresponding video model is provided to individual trainee or learner to under study before real practice sessions sets. Medical facilitators and consultants across the different specialties in the Faculty of Clinical Sciences deliver lectures and take feedbacks from the participating students. At the end of each system examination lectures, students are requested to do self-practice using the provided instructional package.

This method of preparing young medical doctors for their future expectations and responsibility seems to charge them with the task of seeking perfection and autonomy that will further prove their level of proficiency and self-confidence by integrating peer tutoring practices among themselves during clinical training in the MacArthur Clinical Skills Laboratory.

What then is peer tutoring? Peer tutoring could be described as a system of instruction in which learners help each other and learn by teaching. It is regularly used by students who understand their cognitive potentials and intend to enhance their skills and knowledge as they practice tutoring in classroom among themselves providing instant feedback showing their level of understanding as well as proficiency attained. In a normal peer tutoring practice, a higher performing student is paired with a lower performing student but in this study, the type of peer tutoring referred here is co-peering, students are relatively equal with respect to their level of knowledge, skills and attitude to be learnt during the practice session. Some scholars described peer tutoring as a systematic peer mediated strategy utilized by students to increase motivation and achieve classroom goals. In addition, it provides students with interpersonal and intrapersonal skills during learning.

In attempt to attain skills mastery and proficiency in clinical training, the Faculty of Clinical Science, University of Port Harcourt Medical College recommended that each student who is to pass through the clinical skills laboratory must produce a video model of the skills learnt at the end of the training session in the skills laboratory without gender bias thereby fulfilling the International Society for Technology in Education (ISTE) Standards for educators and students. The ISTE standards prescribes the need for collaboration among peers and the ownership of learning goals, performance outcomes in both independent and group settings, educators were also demanded to facilitate learning with technology to support student achievement while the students is to seek feedback that informs and improve their practice, demonstrate learning in various ways, understand and build mutual respect while engaging in a positive, safe, legal and ethical behavior when using technology.

The implication of the above therefore requires each participating student during this training session to be gender sensitive and as well as modify behavior for the full actualization of both learning and behavioural outcomes.

### **Statement of the Problem**

All medical students are required to acquire some degree of proficiency as well as well carry out self-evaluation of their training during ICM session in the skills laboratory. In the presence of inadequate mannequins and subject to verify skills performance, students resort to using themselves as mannequins during practice sessions. Ironically it has been observed that the students often show sharp reaction when asked to practice and record skills performances as course mates during their training sessions in the skills laboratory without gender bias; Bernard

& Goodyear (1998) perceived gender as an important discourse during clinical supervision especially in multicultural settings. For Bernard and Goodyear complications such as power distribution, sexism, and gender matching may arise during supervision based on this premise, this study seeks to investigate the gender differences on medical students perception on peer tutoring learning strategy among the year four medical students who underwent training during the Introduction to Clinical Medicine (ICM) sessions in the MacArthur Clinical Skills Laboratory?

### **Aim and Objectives of the study**

The aim of this study is to investigate the gender differences on medical student's perception on peer tutoring learning strategy during their training of clinical skills in MacArthur Clinical Skills Laboratory (MCSL), University of Port Harcourt. Specifically, the study sought to;

1. determine the extent to which peer tutoring influences clinical skills training during introduction to clinical medicine sessions in MCSL
2. To ascertain the influence of gender on peer tutoring during practice sessions.

### **Research questions**

1. What is the perception of Medical Students' on using peer tutoring learning strategy during ICM sessions in MCSL?
2. To what extent do gender influence peer tutoring during skills training in MCSL?

### **Null hypotheses (@ $p=0.05$ level of significance)**

$H_{01}$ : There is no significant difference between male and female medical students' responses on

the perception on the influence of peer tutoring on clinical skills training during Introduction to Clinical Medicine.

### **METHODOLOGY**

The study adopted a descriptive design. It elicited opinions of the students at the end of their clinical skills training sessions in the MCSL.

The population of the study comprised of 98 Year 4 medical students of College of Clinical Sciences, University of Port Harcourt who offered Introduction to Clinical Medicine (ICM) Course during Part II MBSS 2017/2018 Session. 66 of these students were then randomly selected for the study.

A two sectioned researchers' developed instrument titled "Peer Tutoring and Clinical Skills Training in Clinical Skills Laboratory" (PTCST) was used to collect data. The response formats for the instrument were Strongly agreed (SA), Agreed (A), Disagreed (D), Strongly Disagreed (SD) and Undecided (U) for section A; and Very High Extent (VHE), High Extent (HE), Low Extent (LE), Very Low Extent (VLE) and Undecided (U) for section B. The weightings were (SA & VHE = 5), (A & HE = 4), (D & LE = 3), (SD & VLE = 2) and (U = 1). The criterion mean for these weightings is therefore 3.0 (that is  $5+4+3+2+1=3.0$ ).

Reliability coefficient of the instrument was 0.85 using Cronbach Alpha. Data was collected after exposing the students to clinical skills practical sessions for two weeks in MCSL.

The research questions were answered using mean and standard deviation and the null hypotheses were tested using independence sample t-test via SPSS Version 22

## RESULTS

**Research Question 1:** What is the perception of Medical Students' on using peer tutoring learning strategy during ICM sessions in MCSL?

**Table 1:** Analysis of Medical Students' responses on the perception of using peer tutoring learning strategy during ICM sessions in MCSL

|   | Items   | SA | A  | D  | SD | U | N  | Mean   | Standard deviation | Decision |
|---|---|----|----|----|----|---|----|--------|--------------------|----------|
| 1 | I understand the do-steps of clinical skills practice during practical sessions with course instructor                              | 12 | 38 | 7  | 2  | 7 | 66 | 3.6970 | 1.13639            | Agreed   |
| 2 | I am more comfortable and relaxed when I practice clinical skills do-steps with my classmates                                       | 32 | 33 | 1  | 0  | 0 | 66 | 4.4697 | .53262             | Agreed   |
| 3 | The concepts and do-steps is understandable and clearer when I practice do-steps with classmates                                    | 24 | 38 | 2  | 1  | 1 | 66 | 4.2576 | .72982             | Agreed   |
| 4 | I listen and respond appropriately with my classmates during practice sessions  | 27 | 32 | 5  | 2  |   | 66 | 4.2727 | .73475             | Agreed   |
| 5 | My proficiency level is verified through instant feedback from classmates   | 13 | 37 | 10 | 1  | 5 | 66 | 3.7879 | 1.03054            | Agreed   |
| 6 | Practicing clinical skills do-steps with peers build my intrapersonal skills (positive internal dialogue occurring within the mind) | 28 | 30 | 3  | 2  | 3 | 66 | 4.1818 | .99087             | Agreed   |
| 7 | Practicing clinical skills do-steps with peers leads to better retention  | 29 | 31 | 3  | 1  | 2 | 66 | 4.2727 | .86905             | Agreed   |
| 8 | I gain a better understanding of the do-steps by teaching it to my classmates   | 37 | 20 | 3  | 1  | 5 | 66 | 4.2576 | 1.14099            | Agreed   |
| 9 | My self-confidence is enhanced as I practice do-steps with classmates   | 31 | 32 | 2  | 1  |   | 66 | 4.4091 | .63190             | Agreed   |

Table 1 showed that the medical students agreed to all the items since their means are above the criterion mean of 3.00.

**Research Question 2:** To what extent do gender influence peer tutoring during skills training in MCSL?

**Table 2:** Analysis of Medical Students' responses on the extent of gender influence on peer tutoring during skills training in MCSL

|   | Items  | VHE | HE | LE | VLE | U | N  | Mean   | Standard deviation | Decision |
|---|--|-----|----|----|-----|---|----|--------|--------------------|----------|
| 1 | During practice sessions I simulate clinical skills do-steps freely on peers.                  | 13  | 45 | 5  |     | 3 | 66 | 3.9848 | .83191             | Agreed   |
| 2 | I give myself freely for practice during training sessions                                     | 12  | 33 | 15 | 3   | 3 | 66 | 3.7273 | .96946             | Agreed   |
| 3 | I can allow my peers to use me for practice depending on the type of skill to be perform       | 21  | 32 | 6  | 3   | 4 | 66 | 3.9545 | 1.07320            | Agreed   |
| 4 | I can allow myself to be used for clinical skills practice only in the presence of a chaperon. | 6   | 17 | 27 | 9   | 7 | 66 | 3.0909 | 1.09161            | Agreed   |

Table 2 showed that the medical students agreed to all the items since their means are above the criterion mean of 3.00.

**Ho 1:** There is no significant difference between male and female responses on their perception on the influence of peer tutoring on clinical skills training during introduction to clinical medicine

**Table 3a: Group Statistics**

|     | Gender | N  | Mean    | Std. Deviation | Std. Error Mean |
|-----|--------|----|---------|----------------|-----------------|
| Ho1 | Male   | 30 | 38.0333 | 4.75962        | .86898          |
|     | Female | 36 | 37.2500 | 4.10139        | .68357          |

**Table 3b Independent Samples Test**

|     |                             | Levene's Test for Equality of Variances |      | t-test for Equality of Means |        |                 |                 |                       |   |         |
|-----|-----------------------------|---|------|------------------------------|--------|-----------------|-----------------|-----------------------|---|---------|
|     |                             | F                                       | Sig. | t                            | df     | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |         |
|     |                             |   |      |                              |        |                 |                 |                       | Lower                                     | Upper   |
| Ho1 | Equal variances assumed     | 1.385                                   | .244 | .718                         | 64     | <b>.475</b>     | .78333          | 1.09064               | -1.39546                                  | 2.96213 |
|     | Equal variances not assumed |   |      | .709                         | 57.691 | .481            | .78333          | 1.10562               | -1.43006                                  | 2.99673 |

Sig. (2-tailed) value (0.475) > .05 at df of 64.

Decision: Null hypothesis = Accepted

## DISCUSSION OF FINDINGS

Table 1 result unveiled that the medical students agreed that;

- ❖ they understand the do-steps of clinical skills practice during practical sessions with course instructor;
- ❖ they are more comfortable and relaxed when they practice clinical skills do-steps with their classmates;
- ❖ the concepts and do-steps are understandable and clearer when they practice do-steps with classmates;
- ❖ they listen and respond appropriately with their classmates during practice sessions;
- ❖ their proficiency levels are verified through instant feedback from classmates;
- ❖ practicing clinical skills do-steps with peers build their intrapersonal skills (positive internal dialogue occurring within the mind),
- ❖ practicing clinical skills do-steps with peers leads to better retention,
- ❖ they gain better understanding of the do-steps by teaching it to their classmates, and
- ❖ their self-confidence is enhanced as they practice do-steps with classmates

This finding implies that even though clinical instructors help the medical students to understand the do-steps required to carry out each clinical skill, however during practical sessions in MCSL, the students preferred practicing with their peers via peer tutoring learning approach. The peer tutoring approach helps them to be more relaxed during the practical session because they can freely interact among themselves, get deeper understanding of the

clinical skills through instant constructive feedback, and also acquire necessary skills needed to master the skills.

From the result in Table 2, it can be seen that the medical students agreed that they can simulate clinical skills do-steps freely on their peers; they can give themselves freely for practice during training sessions; they can allow their peers to use them for practice depending on the type of skill to be perform; and they can allow themselves to be used for clinical skills practice only in the presence of a chaperon. This finding suggests that even though the medical students can use their peers or give themselves freely to their peers, for clinical skills practice during clinical sessions in MCSL; however, it is also dependent on the nature of clinical skills to be practiced and that must be in the presence of a chaperon. Thus, the medical students are sensitive to their gender difference and wished to maintain their dignity even during clinical skills practical session in MCSL.

Table 3a&b revealed that there is no significant difference between male and female medical students' responses on their perception on the influence of peer tutoring on clinical skills training during introduction to clinical medicine. Thus, the students, irrespective of their gender perceived peer tutoring learning strategy as been useful to their acquisition of clinical skills during ICM practical session in MCSL. This is in agreement with the findings of Agbarakwe 2017 in a study carried out to investigate the influence of gender on peer review practices among medical doctors who were involved in the development and production of instructional video models. The result of the findings was that gender did not significantly influence peer review practices among medical doctors in University of Port Harcourt Teaching Hospital (UPTH) with a calculated Chi-square value of 7.401, df (8),  $P= 0.494$  at ( $P>0.05$ ) level of significance. Ladyshewsky (2010) in Agbarakwe (2017) also supported the usefulness of peer tutoring as a learning strategy to enhance retention and reproduction of thoughts and skills among peers during skills training in MCSL. Ladyshewky states that peer learning enhances peer coaching and promotes proficient progress as feedback are used to explain, reinforce communication and formatively improved assessment. Another advantage of working in pair is the chance to observe each other.

## CONCLUSION

The students affirmed that though they understood the do-steps of clinical skills practice during practical sessions with course instructor; but they were more comfortable, relaxed and understood the concepts and clinical skills do-steps clearer when they practiced with their classmates. They also confirmed that practicing the clinical skills do-steps with classmates enhanced their proficiency and retention levels, and it helped them build self-confidence and intrapersonal skills. Moreover, during clinical skills practical sessions, the students offer themselves to be used as subjects for practice depending on the nature of clinical skills to be performed and in the presence of a chaperon.

Gender differences on medical students perceptions towards peer tutoring learning strategy during clinical skills training at MCSL was the main thrust of this study which seeks to fulfill the ISTE standards for medical educators and students in this digital era as well as prove the assertions by Bernard and Goodyear that gender is an important factor for consideration during clinical supervision .Statistically , the study showed that gender differences was not an influencing factor doing peer tutoring during clinical skills acquisition but in as much as a

chaperon was required from their responses, it is to some extent a determinant factor for the successful learning and practice sessions.

## RECOMMENDATION

1. Peer tutoring learning strategy should be adopted in medical education especially during practical sessions.
2. Students should be encouraged to make themselves available to be used as subjects of practice by their peers.
3. A chaperon should be made available for students during clinical skills practical sessions considering cross cultural issues.
4. Medical educators and students should be properly acquainted with the ISTE standards for technology integration in clinical education.
5. For the effective utilization of technology like the video camera used during the instructional and performance sessions, students need to understand ethical and safety issues as well as modify behavior that is befitting and acceptable to the medical profession.

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