

Role of Mentorship During Clinical Teaching at Medical Training Colleges in Kakamega County

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Abstract: Objective. The objective of the study was to identify the roles of mentorship during clinical teaching at medical training colleges in Kakamega county, Kenya. **Design.** The study was a mixed cross-sectional descriptive study. **Setting.** The study was carried out in Kakamega County Sample. Kenya Medical Training College – Kakamega campus and County General Hospital Kakamega in Central Kakamega District and Mukumu school of nursing and St Elizabeth Mukumu Hospital will be purposively sampled. Nurse mentors and clinical instructors were purposively sampled. The study employed systematic random sampling to select the sample of 303 nurse students in their second- and third-year Kenya Registered Community Health Nursing students from a randomized class list (n = 248) **Analysis.** Data were analyzed through descriptive statistics, chi-square tests of independence and logistic regression. **Main outcome measures.** Mentorship during clinical teaching

Results. From the results, many of the students perceived the mentorship as good (n=138,56%), while 44%(n=110) perceived the mentorship as poor. With regards to specific items,93.2% of the respondents reported that the nurse mentors supported students with difficulties during clinical teaching, 73.5% said that the nurse mentor's ratio was adequate, 64.3% said that adequate time was allocated to nurse mentors, 91.9% said that nurse mentors were capable of integrating theory and practice and 85% said that the teaching objectives were well known by the nurse mentors. **Bivariate analysis on socio-demographic factors that are associated with perceived mentorship among students shows that there was a borderline significant relationship between age and perceptions on mentorship in the study area (OR: 0.2; 95% CI: 0.7 – 1.5; p=0.06). The respondents aged 23 years and below were 80% less likely to perceive mentorship as good compared to respondents aged 24 years and above. Conclusion.** The study established that many of the students perceived the mentorship as good and important in clinical teaching. The study recommends Nursing faculty should conduct proper training workshops to enhance the communicative skills of students, professors, and hospital staff.

Keywords: Mentorship, Learning, Nursing students, Experiences, Education, Qualitative research, clinical course, Kakamega county, Kenya

Date of Submission: 12-09-2019

Date of Acceptance: 30-09-2019

I. Background

There is no global standard for nursing education; the World Health Organization (WHO) advocates for flexible nurse training combining mentorship, constructive feedback and evaluation (Reid et. al.,2013). There are fundamental differences in the composition of nursing educational programs, especially in clinical teaching (Alzayyatand Al-Gamal, 2014). However, quality clinical teaching for student nurses has been a perennial challenge for nursing programs; this is due to the short patient length of stays, high patient acuity, disparities in learning experiences, and the amount of time clinical instructors' use supervising skills (Education, 2014). In a pure educational setting, teachers may have limited roles, but the nurse mentor often plays many roles simultaneously, switching from one role to another during the same encounter (Hossien et. al., 2010). The large majority of nurse mentors around the world have received rigorous training in medical knowledge and skills but little to none in teaching. As primary nurses become ever busier in their own clinical practice, being effective nurse mentors becomes more challenging in the context of expanding clinical responsibilities and shrinking time for teaching (Prideaux et. al., 2000). This study reviewed the literature on clinical teaching methods, the role of nurse mentors, the attitude of student nurses towards clinical teaching and challenges students to face during clinical placement.

Ousey, (2009) states that the teaching ability and nursing competence of nurse mentors make students learn better when knowledge is presented and new interventions demonstrated and performed. Similarly mentoring can be seen as both a method and facilitative action such as in guiding, and developing the growth and expertise of a person's skills, knowledge, attitudes, and professional attributes (McKinley, 2004). According to Kay and Hinds, (2009) American context views mentoring as a way of developing a person's career, whereas

in Europe it is the form of supporting and encouraging a person to achieve her/his personal goals. Therefore, a human approach is a common principle in mentoring because one person invests time and personal knowledge in assisting another's personal growth (Murray, 2001; McKinley, 2004).

The personal developmental process in mentoring builds individual resources via role modelling and facilitation, like listening, guiding, counselling, advising, and being a critical friend (Clutterbuck, 2004). It also enables a person to identify her/his own potential (Murray, 2001). According to Gopee, (2011), mentorship context has been used by different personnel including nearly qualified nurses, new graduates and staff, under- and postgraduate students, nursing teachers, and leaders. Bray and Nettleton, (2007) reveal that the role of nurse mentors is important in nurse training. Similarly, when the same question was posed to the nurse mentors, their response was similar however; the nurse mentors also said that the role of modelling was important (Davidson and Rourke, 2012).

The student nurse learns a variety of new skills through mentorship programs, thus gains confidence in learning new material. In addition to increasing self-confidence and performance, mentorship improves professional development. (Dennison, 2010; Hunt and Ellison, 2010). Similarly, student nurses become encouraged when they are mentored by nurse mentors from the same faculty, who were once students and have qualified. This allows the student nurse an opportunity to explore the past experiences of the nurse mentors and learn how he or she handled equivalent situations (Dennison, 2010). Ousey (2009) states that student nurses are an integral part of the team during the mentorship and socialization process, thereby increasing feelings of satisfaction upon working within the unit. Therefore, placement of the student nurses in a conducive environment displays an ideal positive hands-on experience in applying theory (Sims-Godden's, Helton and Hope, 2010). In agreement with, Stewart, Pope and Hansen, (2010) accumulations of substantial learning experiences facilitated by peer mentors in both the classroom and during clinical placement help student nurses adapt to practice more seamlessly and confidently.

The study therefore, sought to fill existing knowledge gaps in the study area. Past studies on mentorship were done in different geographical regions and differently (Saarikoski et al., 2013). Therefore, the researcher found it necessary to conduct this study. The objective of the study was to identify the roles of mentorship during clinical teaching at medical training colleges in Kakamega county, Kenya.

II. Methods

The study was conducted in Kakamega county and ethics approval was obtained from Masinde Muliro University of Science and Technology ethics board. No further approval was needed since the project did not require access to patients or personal data.

Research Design

A research design is the scheme, outline or plan that is used to generate answers to research problems (Orodho, 2003). A Cross-sectional survey study design was used which integrated both qualitative and quantitative research for a better understanding of the problem. Data was gathered at a single point in time. This design also enabled testing of cause and effect relationships of the variables under study. The study employed a systematic way of gathering information (Mugenda and Mugenda, 2003). The information gathered evaluated clinical teaching at the nursing diploma training colleges at KMTC Kakamega and Mukumu School of nursing; and clinical teaching hospitals CGH Kakamega and St Elizabeth Mukumu.

Study setting

The study was conducted at two Medical Training colleges in Kakamega County and the clinical teaching hospitals, KMTC – Kakamega campus and County General Hospital Kakamega in Central Kakamega district, and Mukumu school of nursing and St Elizabeth Mukumu Hospital, Kakamega East district, Kakamega County in the Western region, Kenya. Kakamega County is one of the forty-seven counties in the Republic of Kenya. It borders Vihiga County to the South, Siaya County to the West, Bungoma County to the North and Nandi County to the East. The county covers an area of 3050.3 Km² (Kakamega CDP, 2013). The altitude of the county is between 1,240 meters and 2,000 meters above sea level.

Participants

A population refers to an entire group of persons or elements that have same characteristics which samples are taken for measurement (Tromp and Kombo, 2006). KMTC Kakamega had a student population of 1000 and Mukumu School of Nursing had a student population of 250. This study was conducted on second and third-year student nurses and clinical instructors of Medical Training colleges in Kakamega County – KMTC Kakamega campus, and Mukumu School of nursing. The target population comprised of second-year and third-year student nurses of Kakamega KMTC and Mukumu School of Nursing. Also targeted were clinical

instructors in the two institutions as well as Nurse Mentors in the Clinical placement areas both the Kakamega County General hospital and St Elizabeth Mukumu hospital.

Kenya Medical Training College – Kakamega campus and County General Hospital Kakamega in Central Kakamega District and Mukumu school of nursing and St Elizabeth Mukumu Hospital will be purposively sampled. Nurse mentors and clinical instructors were purposively sampled. The study employed systematic random sampling to select the sample of 303 nurse students in their second- and third-year Kenya Registered Community Health Nursing students from randomized class list. The Systematic random sampling refers to selecting a sample at equal intervals within the sample site. Every Nth name in the class lists of year two and three of nurse students were selected. Mugenda and Mugenda (2003) define sampling as a process of selecting the number of individuals to represent a larger group of subjects. The purpose of the sampling was to secure a representative group which enabled the researcher to gain information about the population. She then defined a sample as a smaller group obtained from the accessible population. This research drew a sample size using Yamane's formula. The sample size for non-teaching staff members was determined from the target population using the Yamane's while that of management was determined using Yamane's formula (Yamane, 1967).

Research instruments

Research instruments refer to the tools that were used to collect data (Kothari, 2003). In this study, structured questionnaires with closed and open-ended question items will be used. The closed-ended questions provided an easy way of coding, while the open-ended enabled the researcher to gather wide and free opinions from the participants. The closed-ended questions were used to collect quantitative data while the open-ended ones were used to collect qualitative data. The close-ended type of questionnaires was considered appropriate for the study because, according to Mugenda and Mugenda (2003), they facilitate and regulate data collection based on multiple choices from which respondents select. Furthermore, Kothari (2003) states that the question items in a close-ended questionnaire are in a form that is immediately analyzable on the basis of the multiple choices. The study used two sets of questionnaires; for nurse students, clinical instructors and an interview guide for Nurse Mentors. The questionnaire had 5-point Likert type scale of questions to get respondents express their opinion by rating points on the scale. The questionnaires were suitable because the respondents were literate, the information needed could be easily described in writing and as the population was large its time saving (Onen and Oso, 2009). Questionnaires were designed to capture ordinal, interval and ratio data to enable the use of the more powerful statistical technique. A pre-test was conducted in KMTC-Webuye campus, department of nursing which possess similar characteristics as the study area. Training of the research assistants was conducted before pre-test. These revealed discrepancies in the questionnaire and correction were done in order to convey the same meaning to the study subjects. Analysis of the questionnaires was done in order to assess the methods of analysis.

Data Analysis

Data analysis was done using the statistical program for social sciences (SPSS) version 25. Inferential and descriptive statistics were used to analyze data. Descriptive analysis of data was done using the mean, frequencies and percentages. In this study association between the study variables was assessed by a two-tailed probability value of $p < 0.05$ for significance. In order to examine the pattern of missing data, the researcher evaluated whether the data was missing completely at random (MCAR). The researcher utilized Little's MCAR test (Schlomer *et al.*, 2010) which employs a chi-square statistical analysis and assumes the null hypothesis, that missing data is missing completely due to randomness. In this case, failing to reject the null hypothesis indicates that the data was most likely not missing in a random way. Each question was coded and entered in SPSS. The findings were entered in the variable view of the Statistical Package for Social Sciences (SPSS) version 25.0 screen, each question at a time, starting with first to last questionnaire. The researcher conducted analyses of normality, for the outcome variable, prior to hypothesis testing by examining kurtosis and skewness of the data. In order to test and identify possible outliers in the data, graphical assessment visuals, including scatter and box plots were used. Elimination of observed outliers was based on a case by case basis, dependent on standard deviations, and on normality and homogeneity of variance assessments. Normality was assessed using examination of the histograms by seeing how they related or deviate against a normal bell curve distribution and observing the levels of kurtosis and skewness present.

Univariate analysis was used to describe the distribution of each of the variables in the study objective; appropriate descriptive analysis was used to generate frequency distributions, tables and other illustrations. Bivariate analysis was used to investigate the strength of the association and check differences between the outcome variable and other independent variables. Chi square test of independence at 0.05 level of significance was used to determine if there is a relationship between socio-demographics and perceived mentorship and multiple logistic regression analysis was used to scrutinize the strength of the association. Qualitative data

collected from FGDs was analyzed by thematic content analysis. This is a research tool used to determine the presence of certain words or concepts within texts or sets of texts

III. Results

248 questionnaires were correctly filled and returned which represented a response rate of eighty two percent. According to Mugenda and Mugenda (2003) a response rate of 50 percent is adequate, a response rate of 60 percent is good, and a response rate of 70 percent is very good. While we should not expect full response in studies where responding is voluntary, scholars utilizing questionnaires should aim for a high response rate (Baruch& Holtom, 2008). Cronbach’s alpha for the 11-items mentorship scale was $\alpha = .701$. Deleting select items would not increase the alpha.

Demographic Characteristics of students

The study asked the students to indicate their background characteristics based on the gender, age bracket, years of study and clinical area placement. The summary of their responses is given in Table 4.3

Table 4.3: Background characteristics of respondents

		n	%
Gender	male	76	30.6%
	female	172	69.4%
Age as per last birthday	18-23 years	147	59.3%
	24-28 years	101	40.7%
	above 28 years	0	0.0%
What is your year of study?	second	124	50.0%
	third	124	50.0%
Clinical area of placement	medical wards	79	31.9%
	surgical wards	26	10.5%
	obstetrics	39	15.7%
	gynaecology wards	10	4.0%
	paediatrics wards	19	7.7%
	psychiatry	18	7.3%
	OPD/casualty	9	3.6%
	MCH	48	19.4%

Findings in Table 4.3 gives a summary of the demographic characteristics of the students. With regard to their gender profiles, many were females (n=172, 69.4 %). This implied that majority of students in public institutions in Kakamega county are female as opposed to male. Distribution of age bracket showed that many (n=147, 59.3%) were aged 18-23 years. Results on year of study showed that there was equal distribution of second- and third-year students (n=124, 50%) were permanent employees. With regards to clinical area of placement, 31.9%(n=79) were placed in the medical wards.

Mentorship among students during clinical teaching instruction

The first research question of the study was to identify the roles of nurse mentors and clinical instructors during clinical teaching at medical training colleges in Kakamega county, Kenya. The students were asked to spell out the role of the nurse mentors in relation to clinical placement. Used the following abbreviations (SD=strongly disagree, D=disagree, A=agree and SA=strongly agree).

Table 1:The role of nurse mentors during clinical teaching instruction

Mentorship	SA		A		D		SD	
	N	%	N	%	N	%	N	%
S/he supports students with difficulties during clinical teaching	120	48.2	112	45.0	7	2.8	10	4.0
Nurse mentor ratio is adequate	55	22.1	128	51.4	52	20.9	14	5.6
There is adequate time allocated for Nurse mentors	64	25.7	96	38.6	72	28.9	17	6.8
The nurse mentor is capable of integrating the theory and practise of nursing	86	34.5	143	57.4	13	5.2	7	2.8
The objectives of teaching are well known to Nurse Mentors	84	33.7	127	51.0	28	11.2	10	4.0
He/she accepts criticism from students	29	11.6	64	25.7	69	27.7	87	34.9
He/she gives feedback when asked a question	90	36.1	141	56.6	13	5.2	5	2.0
He/she does follow-up for students	72	28.9	131	52.6	28	11.2	18	7.2
He/she is constructive in supervision of students	72	28.9	124	49.8	42	16.9	11	4.4
Nurse Mentors demonstrate adequate clinical competence	74	29.7	126	50.6	34	13.7	15	6.0
Nurse Mentor demonstrate confidence in her/his work	99	39.8	116	46.6	23	9.2	11	4.4

The study findings reveal that the majority of the nurse students were in agreement with the important roles of the nurse mentors during clinical teaching instruction. The response scored were: the nurse mentors supported students with difficulties during clinical teaching 93.2%, the nurse mentor's ratio was adequate 73.5%, the adequate time allocated to nurse mentors 64.3%, that nurse mentors were capable of integrating theory and practice 91.9%, the teaching objectives were well known by the nurse mentors 84.7%, the nurse mentor accepted criticism from the students 37.3%, nurse mentors did follow-ups for students 92.7%, the nurse mentors gave feedback to questions asked by the students 81.5%, the nurse mentors had constructive in supervision of students 78.7%, the nurse mentors demonstrate adequate clinical competence 80.3% and the nurse mentors demonstrate confidence in her/his work 86.4%.

Clinical instructors and nurse mentors' views on mentorship

When the clinical instructors were asked their opinion on mentorship, two themes emerged. The theme of "Role of teaching" and the theme of "Connecting theory and practice".

Role in clinical teaching

The findings revealed that clinical instructors reported that their core roles to students was clinical instructing students in the clinical are, demonstration and follow-up, guiding and mentoring students and supervising students. Some unique responses included

"My role is identifying one objective and prepare and facilitate teaching" KII 10

"My role is to teach the rest is up to the student" KII 12

Connecting theory and practice

With regards to the theme of connecting theory and practice during clinical teaching, clinical instructors reported that they usually observe and use patients to help in connecting, some said they practice what is taught, others said they revise previous block notes. Some unique responses include.

"I do literature review and comparison with the clinical client review" KII 6

"I use procedure manuals and demonstrations to students" KII 8

Nurse mentors' opinions on mentorship

When nurse mentors were asked their roles majority mentioned supervision, discipline, demonstration, guiding and counselling, and mentorship. With regards to specific skills many said administration and orientation of students and staff. It was made clear by the responses that the ratio for the nurse mentor to the nurse student is adequately distributed. The study established that the nurse mentors were capable of integrating theory and practice in clinical teaching and learning than they would in classrooms. The nurse mentors have more time with the nurse students during clinical teaching and learning and always do follow-ups to students that were so helpful in promoting learning.

A Nurse mentor said, *"there are similar factors that affect clinical teaching, which include physical resource, environment, time and attitude. However, the commitment by us and the good relationship with the nurse students enhance the clinical teaching."* KII7

Mentorship scores computation

Respondents answered a total of eleven closed ended questions. Each response was given a mark based on the level on the 5-point likert scale with the anchors being strongly disagree=1 to strongly agree=4 and vice versa for questions that were reverse coded. Scale scores were computed by adding responses to the eleven questions resulting in a minimum possible score of 11 and a maximum of 44. Respondents who scored below the mean score of 19.1 were classified as having perceived the mentorship as poor and those that scored above the mean score were classified as having perceived the mentorship as good.

- Good working conditions (above mean score of 19.1)
- Poor working conditions (Below mean score of 19.1)

From the results, many of the students perceived the mentorship as good (n=138,56%), while 44%(n=110) perceived the mentorship as poor (Figure 4.2)

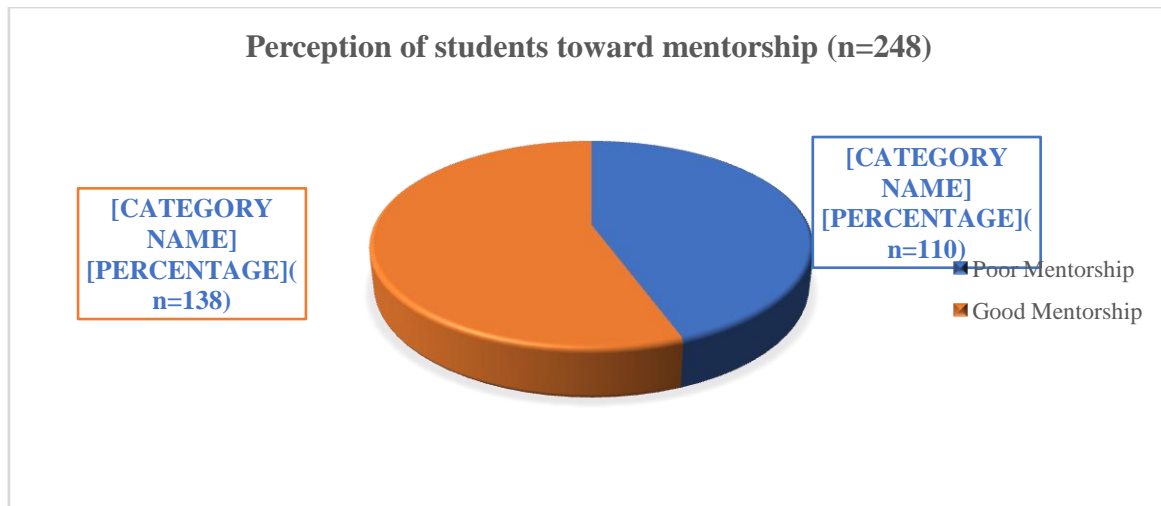


Figure 4. 1. Perception of students towards mentorship in clinical practice

Bivariate analysis of socio-demographic characteristics associated with perceived mentorship among nursing students

Bivariate analysis on socio-demographic factors that are associated with perceived mentorship among students shows that there was a borderline significant relationship between age and perceptions on mentorship in the study area (OR: 0.2; 95% CI: 0.7 – 1.5; p=0.06) as shown in Table 2. The respondents aged 23 years and below were 80% less likely to perceive mentorship as good compared to respondents aged 24 years and above. Males were one-point-three times more likely to perceive mentorship as good compared to women (OR: 1.3; 95% CI: 0.7 – 2.3; p=0.97). Similarly, respondents who were in their second year of study were 80% more likely to perceive mentorship as good in contrast to those in third year (OR: 1.8; 95%CI: 0.6 – 2.2; p=0.008).

Table 2: Socio demographic characteristics associated with perceived mentorship

	N	Perceived Mentorship		Overall OR	95% CI	p-value
		Good	Poor			
Age						
<=23	147	85.3(125)	14.7(22)	0.2	0.7 – 1.5	0.06
>24	101	93.2(94)	6.8(7)			
Gender						
Male	76	61.7(47)	38.2 (29)	1.3	0.7 – 2.3	0.97
Female	172	61.2 (105)	38.8(67)			
Year of study						
Second	124	73.5(91)	26.5 (33)	1.8	0.6 – 2.2	0.008
Third	124	54.4 (67)	45.6(57)			

IV. Discussion

The first objective was to identify the roles of nurse mentors and clinical instructors during clinical teaching at medical training colleges in Kakamega county. The current study noted that 93.2% of the students said that nurse mentors supported them with difficulties during clinical teaching. A previous study noted that 13% of the students did not meet their nurse mentors in Western European countries (Saarikoskiet. al., 2013). Mentoring play a major role in enhancing perception of the students towards clinical teaching. In Rwanda, the Mentoring and Enhanced Supervision at Health Centres program has bridged the gap between traditional didactic training and clinical teaching using locally trained nurse mentors (Anatole, et. al., 2013). The role of mentors has universally been accepted as an approach to strengthen students’ clinical learning (Henderson, Fox and Malko-Nyhan, 2006).

The current study also found that 92% of the students reported that nurse mentors were capable of integrating theory and practice. Consistent with this study is a study done in Malawi where nursing educators were expected to take students through blocks of theory and practice and clinical teaching is one of their core roles (Webster et al., 2010). It is important to note that positive and supportive clinical practice setting influences integration of theory and practice (Melender, Jonsen, and Hilli, 2013). In a study done by Sharif et al (2005) authors reviewed the students’ point of view of their clinical practices and anxiety, the gap between theory and practice, clinical supervision and professional role were the most important factors experienced by the students. In Iran, Madarshahian et al. (2012) reported that applying practice in clinical nursing is as effective as traditional teaching, in addition to improving knowledge, skills, and high-quality caring. Alavi and Abedi

(2006) in their study mentioned that contradiction between what has been taught and what would be experienced in practice is one of the important factors of clinical teaching. Obstacles for this practice have been discussed, including the poor understanding of the concept by nurses, distrust to its efficiency, and lack of knowledge on how to search for answers (American Medical Informatics Association, 2006). Studies agree that in order to learn professional skills, nursing students should acquire investigation skills especially from practical (Balakas & Sparks, 2010). The current study found that 37% of the students reported that the nurse mentor accepted criticism from the students. The relation between students and mentors is very important (Kristofferzon et. al., 2013). Crooty (2010) in his study titles as “nursing staff and nursing students: learning from each other” found that students believed that their relationship with the staff was important in their professional development. Contrary to this was a study in Finland that found students and mentors reported occasional difficulties with the language used during the competency assessment. (Helminen, Tossavainen, and Turunen, 2014). In another study Swedish students reported negative experiences that were related to feelings of abandonment and powerlessness when mentors were visible and the atmosphere at the ward was non-permissive (Jonsen, Melender, and Hilli, 2013). However, the role of mentors cannot be overemphasized (Sundler et. al., 2014). Not only is the need for faculty involvement in mentorship in nursing been reported but the need to increase their involvement has also been highlighted in literature (Gleeson, 2008). Different models of mentorship should be utilized to maximize teaching outcomes, in a study by Sundler et. al., (2014), students with the same mentors throughout the clinical placement were more positive concerning the supervisory relationship and the pedagogical atmosphere.

V. Conclusion & Recommendation

The study established that many of the students perceived the mentorship as good. The nursing mentors were qualified, competent, dedicated to their work, and supported students during clinical training. The study recommends Nursing faculty should conduct proper training workshops to enhance the communicative skills of students, professors and hospital's staff. During clinical courses, using appropriate educational methods, making proper communication, correct modeling, providing the necessary content, paying attention to implicit learning and planning and implementation of students' requirements must be considered.

Acknowledgments

We would like to express our gratitude to the respondents. And not to forget the extraordinary efforts of the field staff.

Ethical disclosures

Protection of human and animal subjects.

The authors declare that the procedures followed were in accordance with the regulations of the relevant research ethics committee and with those of the Code of Ethics of the Declaration of Helsinki.

Confidentiality of data.

The authors declare that they have followed the protocols of the university on the publication of the data.

Right to privacy and informed consent.

The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

Competing interest

The authors declare that they have no competing interests.

Authors & contributions

Nyabate Josephine Oribo, Dr Harun Chemjor and Dr Gladys Mengich conceived the paper, designed and performed the study. Micky Oloo contributed to data integrity, and analysis. All authors read and approved the final manuscript.

Funding

No financial support was provided.

Disclaimer

The findings and conclusions presented in this manuscript are those of the authors and do not necessarily reflect the official position of Masinde Muliro University of Science and Technology

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Nyabate Josephine Oribo. Role of Mentorship During Clinical Teaching at Medical Training Colleges in Kakamega County ".IOSR Journal of Nursing and Health Science (IOSR-JNHS), vol. 8, no.05 , 2019, pp. 70-77.