

# Student-Related Factors that Affect Effective Clinical Learner Support among Nursing Students in the Middle-Level Colleges in Nairobi County, Kenya

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**How to cite this paper:** Waswa, R. and Matiang'i, M. (2024) Student-Related Factors that Affect Effective Clinical Learner Support among Nursing Students in the Middle-Level Colleges in Nairobi County, Kenya. *Open Journal of Nursing*, 14, 555-568.  
<https://doi.org/10.4236/ojn.2024.1411039>

**Received:** July 26, 2024

**Accepted:** November 1, 2024

**Published:** November 4, 2024

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## Abstract

**Background:** Student nurses' clinical learning is a key requirement in the profession. However, the students often face many challenges in clinical sites that put a negative perception on their professional growth. Clinical learner support is the most challenging part because of several guidelines, policies, and requirements that must be followed during the training. To enhance effective clinical learner support, training needs to be designed to support problem-based learning, trainees' characteristics should portray positivity, and team-based coaching should focus on skills and results attainment. **Objectives:** The broad objective of the study sought to establish determinants of effective learner support for nursing students in middle-level colleges. The specific objectives were: To assess student-related factors, identify primary training institutions, other related placement site-related factors, and establish the students' perceptions of the existing clinical learner support systems. **Methodology:** A descriptive design was utilized. Qualitative and quantitative data collection methods were utilized. A Simple random method was used to sample 394 respondents from a total population of 3368 nursing students across 12 training institutions. The data was coded and analyzed using Excel and SPSS Version 28. The study findings are presented using tables, pie charts, bar graphs and histograms. The data was first presented in the form of descriptive in terms of percentages. The chi-square test of independence was then calculated at a p-value of  $< 0.05$ . Significant factors after cross-tabulation were entered into binary logistic regression analysis stepwise, followed by multivariate analysis to adjust for confounding factors. **Conclusions:** The learners achieved effective clinical learner support where  $n = 302$  out of 380, with 75% indicating effective learner support. It is recommended that qualitative and more quantitative studies should

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be carried out on postgraduate and other healthcare cadres to compare the results. Further study needs to be carried out on the students' attitude towards learner support.

## Keywords

Clinical Learning, Nursing, Nairobi

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## 1. Introduction

In nursing education, clinical learning carries a large proportion of the curriculum that is carried out in a complex environment. Therefore, it is very important to identify challenges faced by students in clinical areas that negatively impact their growth and development of their nursing skills [1]. Effective clinical learner support is a compulsory requirement for nursing students in their training. However, many students report most of the challenges in these areas since they have to follow several policies and requirements in clinical settings. Clinical placements in Tanzania often fail to provide adequate opportunities for effective learner support, connecting this to the shortage of nurse tutors in clinical areas [2].

In the Kenyan context, some minimal improvement has been shown in the public/county nurse training facilities following the devolution of health care services in the year 2013. These include enhancing learner support of the student nurses by having training designed to support problem-based learning, trainees' characteristics that portray positive characteristics, team-based coaching focus on results attainment and devolution of resources [3]. Despite some reasonable progress made towards promoting student nurses' clinical learner support by different countries, when it comes to capacity issues in the nursing training institutions documented globally in both public and private healthcare sectors, there is still a lot more expected towards achieving quality in the trainees [4].

Gender issues in the nursing profession whereby some communities link the profession to feminine and this leads to stigmatization of the male students who choose to pursue a career that is strictly linked with femininity, affecting the male gender students' clinical learning negatively [5].

Lack of finances and other social issues for nursing students affect effective clinical learning because these create psychological problems. Parent's economic status affects clinical practice because lack of money causes the inability to afford payment for placement site fees, cater for learning materials, transport and other personal needs, including school fees [2]. In a study by [6], it was found that other student-related factors that include age, previous learning experiences, anxiety that comes with making a mistake leading to patient demise or complications and conflicts with relatives make it difficult for the learner to transition from one stage to another.

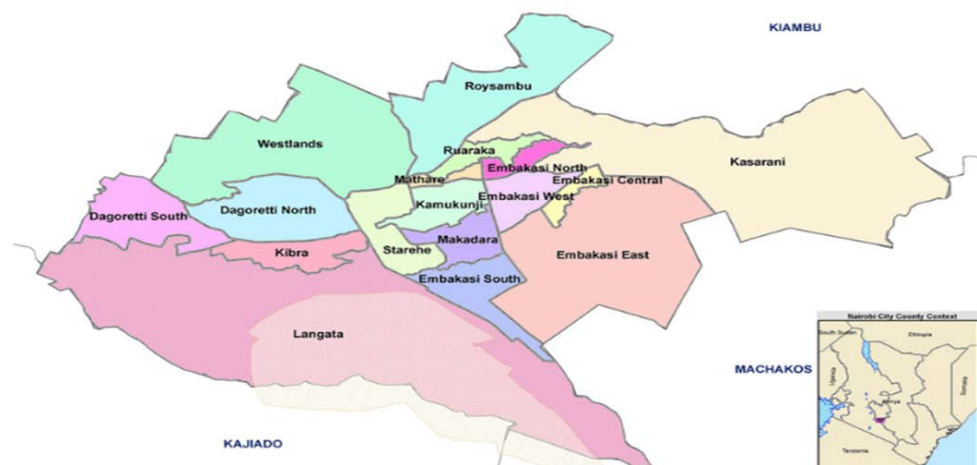
Challenges to effective clinical learner support among nursing students have

closely been linked to poor communication with clients/colleagues and other team members in the clinical areas [7]. In the study by [8] noted that students' attitudes are a hindrance to critical thinking, which is key to effective clinical learner support. Most of the students are resistant to competency-based or learner-centered methods but prefer the faculty to deliver the contents that make it easier for memorization and challenging in practice application.

It is, therefore, fundamental that the student-related factors are studied to determine how they affect effective clinical learner support among nursing students. The study was designed to determine the existing frequency, patterns, and background of student-related factors that affect effective clinical learner support among students in middle-level colleges in Nairobi County, Kenya.

## 2. Materials and Methodology

### 2.1. Area of Study



**Figure 1.** Map of Nairobi County, Kenya.

**Table 1.** Distribution of 12-middle-level nursing institutions.

No.	Name of the Nursing School	Sub-county
1	Catherine McAuley Nursing School	Starehe
2	Amref Nursing School	Langata
3	Pumwani School of Nursing	Kamukunji
4	Gertrude's Children's Hospital School of Nursing	Westlands
5	Nairobi Women's Hospital College	Dagoretti North
6	Mathare Mental and Teaching Nursing School	Kasarani
7	St. Francis Kasarani Nursing	
8	KNH Nursing School	
9	Kenya Medical Training College	Kibra
10	Armed Forces Nursing Training School	
11	Cicely McDonell College of Health Sciences	
12	Karen Medical Training College	

The gathered data for this study purposely targeted Nairobi County, Kenya. **Figure 1** is the map for the study area. Nairobi County was the preferred area of study because of its high population, which infers the study area needs quality clinical and nursing services. Secondly, the study area is the capital city of Kenya, so there is a need to determine the effectiveness of clinical learning for nurses. In Nairobi County, there are twelve (12) clusters of middle-level nursing training institutions. These institutions are spread across the seventeen sub-counties of Nairobi. The study area categorized the twelve clusters of middle-level nursing training institutions into the following seven sub-counties: Starehe, Langata, Kamukunji, Westlands, Dagorett North, Kasarani, and Kibra. The twelve middle-level nursing training institutions considered in this study are Catherine McAuley Nursing School, Amref Nursing School, Armed Forces Nursing School, Pumwani School of Nursing and Midwifery, Cicely McDonell College of Health Sciences, Karen Medical Training College, Gertrude's Children's Hospital School of Nursing, Nairobi Women's Hospital College, Mathare Mental and Teaching Nursing School, St. Francis Kasarani Nursing School, Kenya Medical Training College—Nairobi Campus, Kenyatta National Hospital Nursing School and Nairobi West College of Health Sciences. **Table 1** highlights the distribution of the twelve middle-level nursing training institutions based on sub-counties in Nairobi County.

## 2.2. Data Collection

The study employed a descriptive survey and Focus Group Discussion to collect data from the participants. A sample size of 394 participants was selected using simple random and stratified sampling techniques. The sample size was drawn from the twelve middle-level nursing training institutions based on Probability Proportional to Size (PPS). The distribution of the sample size for the study is presented in **Table 2**.

The sample size for this study was determined by [9] formula based on the target population size of 3368. Since the population size was known, the sample size was derived as follows:

$$n = \frac{N}{1 + N(e^2)}$$

where:  $n$  was the sample size to be determined;

$N$  is the population as given in the sample frame (3368);

$e$  is the sampling error (0.05).

$$n = \frac{3368}{1 + 3368(0.05^2)}$$

$$n = \frac{3368}{1 + 8.42}$$

$$n = 357.54$$

The sample size based on the known population gave  $n = 357.54$  participants. To cater for non-response, this sample size was adjusted by 10% non-response to

a sample size of  $357.54 \times 1.1 = 393.3$ , which was rounded up to the nearest person  $n = 394$ .

**Table 2.** Distribution of sample size.

Name of Institution	Number of Students	Sample proportion	Sample size by institution
<b>Cluster 1: Private institutions</b>			
Catherine McAuley Nursing School	217	6.4%	26
St. Francis Kasarani Nursing School	120	3.6%	14
Amref Nursing School	600	17.8%	70
Cicely McDonell College of Health Sciences	240	7.1%	28
Karen Medical Training College	110	3.2%	13
Gertrude's Children's Hospital School of Nursing	38	1.1%	4
Nairobi Women's Hospital College of Health Sciences	68	2.0%	8
<i>Sample frame 1—Private institution cluster</i>	<b>1393</b>	<b>41.4%</b>	<b>164</b>
<b>Cluster 2: Public institutions</b>			
Kenya Medical Training—Mathare Campus	360	10.7%	42
Kenya Medical Training College—Nairobi Campus	1200	35.6%	140
KNH Nursing School	280	8.3%	33
Armed Forces Nursing Training School	80	2.4%	9
Pumwani School Midwifery and Nursing	55	1.6%	6
<i>Sample frame 2—public institution cluster</i>	<b>1975</b>	<b>58.6%</b>	<b>230</b>
<b>Total</b>	<b>3368</b>		<b>394</b>

The study established eleven Focus Groups Discussions, and the survey tool was administered in all institutions in which more than 10 students were sampled. FGDs are composed of 8—10 participants each except for where the total sample size in an institution was less than this number and where all students sampled were engaged. **Table 3** shares the distribution of those FGDs among the targeted middle-level nursing training institutions.

**Table 3.** Distribution of survey participants and Focus Group Discussion.

Name of Institution	Sample size by institution	Survey participants	FGD
<b>Cluster 1: Private/Faith-Based Institutions</b>			
Catherine McAuley Nursing School	26	10	2 (8pax)
St. Francis Kasarani Nursing School	14	14	-
Amref Nursing School	70	50	2 (10pax)
Cicely McDonell College of Health Sciences	28	28	-
Karen Medical Training College	13	13	-
Gertrude's Children's Hospital School of Nursing	4	-	1 (4pax)
Nairobi Women's Hospital College of Health Sciences	8	-	1 (8pax)
<i>Sample frame 1—Private/Faith-based institution cluster</i>	<b>164</b>	<b>115</b>	<b>48</b>

## Continued

<b>Cluster 2: Public Institutions</b>			
Kenya Medical Training Institute—Mathare Campus	42	34	1 (8pax)
Kenya Medical Training College—Nairobi Campus	140	124	2 (8pax)
KNH Nursing School	33	33	-
Armed Forces Nursing Training School	9	-	1 (9pax)
Pumwani School Midwifery and Nursing	6	-	1 (6pax)
<i>Sample frame 2—public institution cluster</i>	<i>230</i>	<i>191</i>	<i>11 FGD</i>

### 2.3. Data Analysis

The data gathered from the participants was cleaned and entered into Excel and SPSS software based on the responses of each respondent. Variables of data entered into the SPSS software are gender, marital status, age, level of study, religion, student decision to pursue nursing, skills lab simulations affect the quality of clinical support, assigned preceptors in the clinical area, students are allowed to make mistakes in the clinical area, students are always supposed to work under supervision, meeting of the training costs, family structure, motivation for a student to pursue a nursing career, and means of transport to the clinical area.

Data on student-related factors affecting effective clinical learner support were subjected to analysis using SPSS, data analysis software. Chi-square analysis was performed to determine the degree of several associations considered in this study at a significance level of  $p = 0.01$ .

## 3. Results

### 3.1. Demographics

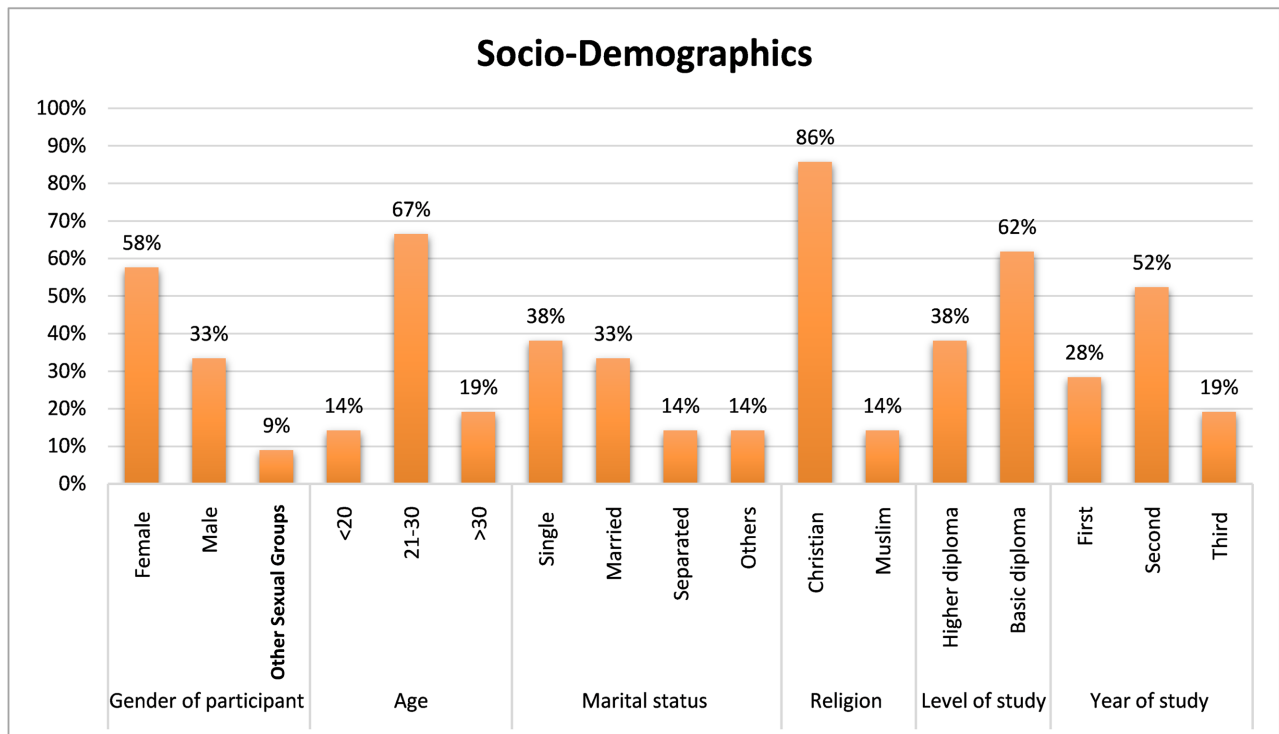
The response rate for the study was 98%, with 380 respondents successfully participating out of the study sample size of 394. **Table 4** and **Figure 2** present the social-demographics of the participants in the study, and based on the analysis, the majority of the participants were female, Christian, 21 —30 years old, second year of study, and had basic diplomas.

**Table 4.** Socio-demographics characteristics of the participants.

Category	Variable	Frequency	Percentage
Gender of participant	Female	219	58%
	Male	127	33%
	Other Sexual Groups	34	9%
Age	<20	54	14%
	21 —30	253	67%
	>30	73	19%
Marital status	Single	145	38%
	Married	127	33%
	Separated	54	14%
	Others	54	14%

## Continued

Religion	Christian	326	86%
	Muslim	54	14%
Level of study	Higher diploma	145	38%
	Basic diploma	235	62%
Year of study	First	108	28%
	Second	199	52%
	Third	73	19%



**Figure 2.** Socio-demographics.

On cross-tabulation of demographic results with effective clinical learner support, it was found that the gender of the participant was significantly associated with effective support. The female gender was more likely to learn effectively than the male and other sexual groups. All the other variables were not significant, as indicated in **Table 5**.

**Table 5.** Association degree between socio-demographics and level of effective clinical learning.

Variable	Category	Level of effective clinical learning		df	P value & Chi-square
		Moderate	High		
Sex of the participant	Female	34	185	2	<b>P = 0.006</b> $\chi^2 = 10.40$
	Male	38	89		
	Other Sexual Groups	6	28		

**Continued**

Age	<20	10	44	2	P = 0.352 $\chi^2 = 10.40$
	21-30	57	196		
	>30	11	62		
Marital status	Single	35	110	3	P = 0.453 $\chi^2 = 2.08$
	Married	21	106		
	Separated	10	44		
	Other	12	42		
Religion	Christian	66	260	1	P = 0.739 $\chi^2 = 0.111$
	Muslim	12	42		
Level of study	Higher diploma	35	110	1	P = 0.171 $\chi^2 = 1.875$
	Basic diploma	43	192		
Year of study	First	20	88	2	P = 0.352 $\chi^2 = 10.40$
	Second	39	160		
	Third	19	54		

### 3.2. Student-Related Factors that Determine Effective Clinical Learner Support

All the students reported that they had chosen nursing as their career of choice. None were reported to have been influenced by family, friends or parents. However, 19.2% (n = 73) had consulted their parents for them to make an informed decision, with 80.8% (n = 307) made a personal choice. The findings indicated that the majority of students' (66.6%, n = 253) clinical learner support was affected by skills lab simulations, they did not perfect the skill before proceeding to the clinical area, therefore, felt incompetent to learn the skills on real patients. However, in the clinical area, 81.1% (n = 308) reported that they had been allocated clinical mentors. Despite the allocation of the clinical mentors, some students had never seen or met their clinical mentors.

Since the clinical area is a learning site, 76.1% (n = 289) of the students reported having made mistakes while handling the patients. It was reported that the majority (85.8%, n = 326) of the students were working under supervision from a qualified nurse. During the clinical placement, the clinical site fee was catered for by students. Relatively, some students paid for the clinical area on their own, some were paid for by their parents and others by their guardians at 33.4% (n = 127), 33.4% (n = 127) and 33.2% (n = 126), respectively. The study found that the majority of the students (85.8%, n = 326) came from monogamous families.

The students reported being motivated to pursue the nursing profession so that they could work abroad, while others were motivated by the fact that after training, they would get a ready job market for themselves. The findings presented in **Table 6** indicated that the nursing career pays well and has an employment guarantee, as indicated by 33.2% (n = 126) and 33.4% (n = 127), respectively. On the means of transport to the clinical area, the majority of the students (57.1%, n = 217) reported



being dropped at the clinical site by the college bus, while others were either using public means (23.9%,  $n = 91$ ) and motorbikes (18.9%,  $n = 72$ ), respectively.

**Table 6.** Student-related factors.

Variable	Category	Frequency	Percentage
Do you consider nursing as your career of choice	Yes	380	100
What informed your decision to do nursing	Parents decided	73	19.2
	Personal choice	307	80.8
Skills lab simulations affect the learner support	Yes	253	66.6
	No	127	33.4
Students are assigned mentors/ preceptors while in the clinical area	Yes	308	81.1
	No	72	18.9
Students are allowed to make mistakes in clinical practice	Yes	289	76.1
	No	91	23.9
Students always work under supervision	Yes	326	85.8
	No	54	14.2
Who meets the training cost at the clinical area	Individual student	127	33.4
	Parents	127	33.4
	Guardians	126	33.2
Family structure	Monogamous	326	85.6
	Polygamous	54	14.2
What motivates the student to pursue nursing	Better pay	126	33.2
	To work abroad	54	14.2
	To help people	73	19.2
	Job guaranteed	127	33.4
Means of transport to clinical area	College bus	217	57.1
	Public means	91	23.9
	Motorbikes	72	18.9

On calculation of Chi-square test of independence, it was found that quality of skills lab simulations, students working under supervision, means of transport to clinical area site were significantly associated with effective clinical learner support at  $\chi^2 (1, N = 380) = 14.68, p < 0.001, \chi^2 (1, N = 380) = 22.07, p < 0.001, \chi^2 (2, N = 380) = 8.14, p = 0.017$  respectively. The other factors were not statistically significant, as shown in **Table 7**.

The significant factors: quality of skills lab simulations, students working under supervision, and means of transport to the clinical area after cross-tabulation were entered into a binary logistic regression, and the results are indicated in **Table 8**.

**Table 7.** Primary institution-related factors.

Variable	Category	Level of learner support		df	P value & Chi-square
		Moderate	High		
What informed student decision to do nursing	Parents	16	57	1	P = 0.743 $\chi^2 = 0.11$
	Personal choice	62	25		
Skills lab simulations affect the quality of clinical support	No	41	89	1	<b>P &lt; 0.001*</b> <b><math>\chi^2 = 14.68</math></b>
	Yes	37	213		
Assigned preceptors in the clinical area	No	16	56	1	P = 0.692 $\chi^2 = 0.16$
	Yes	62	246		
Students are allowed to make mistakes in the clinical area	No	23	68	1	P = 0.198 $\chi^2 = 0.165$
	Yes	55	234		
Students are always supposed to work under supervision	No	24	30	1	<b>P &lt; 0.001*</b> <b><math>\chi^2 = 22.07</math></b>
	Yes	54	272		
Who meets the training costs	Individual	21	106	2	P = 0.299 $\chi^2 = 2.42$
	Parents	31	96		
	Guardians	26	100		
Family structure	Monogamous	68	258	1	P = 0.693 $\chi^2 = 0.16$
	Polygamous	10	44		
What motivates a student to do the nursing profession	Better pay	28	98	3	P = 0.399 $\chi^2 = 2.95$
	To work abroad	10			
	To help people	19	54		
	Employment guaranteed	21	106		
Means of transport to clinical area	College bus	37	181	2	<b>P = 0.017*</b> <b><math>\chi^2 = 8.14</math></b>
	Public matatu	28	62		
	Motorbike	13	59		

**Table 8.** Placement-related factors.

Variable	Category	B	Wald	df	Adjusted odds ratio AOR	Lower boundary	Upper boundary
Gender	Female	1.774	7.90	1	5.89	1.71	20.29
	Male	1.935	5.49	1	6.92	1.37	34.90
	Other Sexual Groups	Reference category					
Quality of skills lab simulation affects clinical area learning	No	0.895	2.55	1	2.44	0.817	7.32
	Yes	Reference category					
Students always need supervision while working in the clinical area	No	2.47	28.92	1	11.89	4.82	29.32
	Yes	Reference category					
Means of transport to clinical area	College bus	-0.200	25.92	1	.82	.39	1.72
	Public means	0.082	0.04	1	1.09	.47	2.51
	Motorbike	Reference category					

From the above results, only the gender of the student, quality of skills lab simulation, and students always working under supervision were significant and were entered into multivariate logistic regression to adjust for confounding factors. After adjusting for confounding factors, only the gender of the student and the student always working under supervision were found to determine effective clinical learner support. The students who were supervised while practicing were 11.89 times more likely to learn effectively compared to those who were not supervised. The female gender was 5.89 times more likely to be supported in clinical areas than the male gender. During group discussion, a group member reported the following

*“while working in the ward the patients are used to calling the nurse ladies ‘sister’ they fear calling the male nurse students, they only call them ‘daktari’ this mentality makes even the male nurses to feel like nursing is for ladies”.*

*(Participant 4, group 2)*

This was supported by another participant in another group discussion who reported that

*“...nursing is a ladies profession....according to the uniform nurses should be wearing nurse caps which cannot be worn by male nurses...”*

*(Participant 2, group 1)*

## 4. Discussion

The study findings indicated that being supervised during their clinical practices improved their clinical learning. All the students reported that they had made personal choices to join the nursing profession, unlike in the previous study, where the students did not make individual choices and hence had challenges in clinical learning support. In the previous study, it was reported that it was important to carry out the interviews and select suitable candidates for nursing training. This selection should be utilized to examine the suitability of the nursing students during clinical learning and identify challenges that need to be worked on [10]. In another study, it was found that nursing students who had their nursing career chosen for by parents and their financial supporters had challenges in getting support in the clinical areas because of a lack of motivation [11].

In the current study, the female gender was associated with effective clinical learner support, this is congruent with the results previously reported by [5], who found that the nursing profession has suffered greatly from public stereotyping and being strictly linked with femininity and non-masculinity. In some countries, the male students who choose nursing as their career end up being stigmatized in the area of practice, which they term as feminine, hence affecting the male gender students' clinical learning negatively [5]. In another study, it was found that gender tailoring by allocating students and mentors to the same gender category proved to increase learning experiences [8].

Socio-economic issues of nursing students affect effective clinical learner support and create psychological problems as well as social climate of the school is an

important factor in enabling students' effective learner support. Majority of nursing students agree that parent's economic status affects clinical practice. Lack of money causes the inability to afford learning materials and other personal needs [2]. However, in the current study, socio-economic status of the parents or guardians was assessed and did not significantly affect the student's clinical learning. During the students' placement, the current study found that most of the parents paid placement fees together with the college fees, and then it became the responsibility of the college to pay the students for the clinical site fee. Now that the students were not involved directly with the payments, they were not psychologically tortured about the payments.

The current study also found that the students who were always supervised for their practice became more competent compared to those not supervised. During supervision, the mentor can correct the mentee and this improves their skills. Unlike where the students are not supervised, they learn through the trial and error method, and in this case, patient care is compromised, and it may take longer for the student to learn the right practices. Students are required to practice under supervision as this ensures both patient safety and effective clinical learning [12]. In another study, it was reported that the students who worked hand in hand with the mentors supervising them always became competent in the nursing practice [13].

## 5. Conclusions

The demographic characteristics for the study indicated that the majority of the students had a mean age of 23.49, with the majority aged between 20 to 30 years old. Among the students' characteristics that were assessed, including gender, level of training, year of study and religion, only the gender of the student was found to significantly affect effective clinical learner support.

Chi-square analysis was done to determine the significant association between effective clinical learner support and the following factors: what the student considered to choose a nursing career, what informed their decision, how skills lab simulations affect their clinical learner support received from the mentors, level of supervision, training costs and who caters for the costs, their family structure and what motivates them to do nursing. Out of all these factors, only supervision of the students while practicing in the clinical area was found to significantly affect the effective clinical learner support. The students who were supervised gained more competencies compared to those who were not supervised.

This recommends sensitization through the community leaders, nurses, and senior secondary schools career day that either gender can practice as a nurse to mitigate the gender stigma that affects the morale of nursing students during clinical placements. Secondly, all the clinical practice site supervisors, clinical instructors, and faculty should ensure proper supervision for effective clinical learner support.

Further study needs to be conducted on students' attitudes toward clinical

learner support and other healthcare provision cadres to determine if the study will give the same results.

## Acknowledgements

Special thanks to the students of the 12 middle-level nursing institutions in Nairobi County who volunteered information for the study. Thanks to my supervisors and the entire team of AMREF International University, Department of Public Health, for the technical and moral support.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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