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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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Abstract
Introduction
Clinical learning is an integral program for nursing students as they get an opportunity to interact with patients and clinical site. However, the nursing students often face many challenges in clinical sites that elicit negative perception to their professional growth. There is a need to examine the student-related factors that affect clinical learner support and determine the fundamental factors that need to be addressed to promote effective clinical learner support.
Methodology
The study adopted descriptive survey with a sample size of 394 participants. FGD were eleven and 306 questionnaires were the instruments used to collect data. The sample size was drawn from 12 middle level nursing institutions in Nairobi County. The data was analyzed using the Excel, SPSS version 28 and NVivo version 10 and Chi square.
Conclusion
Response rate for the study was 98%. Chi-square analysis was conducted and the results indicated 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 □2(1, N=380) = 14.68, p<.001, □2(1, N=380) = 22.07, p<.001, □2(2, N=380) = 8.14, p=.017 respectively. The study also concluded that gender, training costs, adequate supervision is fundamental for effective clinical learner support.

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I. 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 impacts negatively on their growth and development of their nursing skills (Jamshidi et al., 2016 p. 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 setting. According to Gemuhay et al., (2019, p.4), clinical placements in Tanzania often fail to provide adequate opportunity for effective learner support, connecting this to the shortage of nurse tutors in clinical areas.

In the Kenyan context, some minimal improvement has been shown in the public/county nurse training facilities following devolution of health care services in the year 2013. These includes enhancing learner support of the student nurses by having training design to support problem based learning, trainees' characteristics that portray positive characteristics, team based couching focus on results attainment and devolution of resources (Chelagat et al., 2019). 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 (Maloney et al., 2013).

According to Mervat and Youssef, (2018) 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 the career that is strictly linked with femininity, affecting the male gender students' clinical learning negatively.

Lack of finances and other social issues about nursing students affect effective clinical learning because this create psychological problems. Parent's economic status affects clinical practice because lack of money causes inability to afford payment for placement sites fees, cater for learning materials, transport and other personal needs to include school fees (Gemuhay et al., 2019). In a study by Chia-Shan Wunet al., (2021), it was found out that other student related factors that includes age, previous learning experiences, anxiety that comes

with making a mistake leading to patient demise or complications and conflicts with relatives makes it difficult for the learner to transit from one stage to another.

Challenges to effective clinical learner support among nursing students has closely been linked to poor communication with clients/ colleagues and other team members in the clinical areas (Cohen et al., 2019). Negarandeh, et al., (2019) in their study noted that students' attitudes as 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 method of but prefer the faculty to deliver the contents that makes 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 the effective clinical learner support among students in the middle level colleges in Nairobi County, Kenya.

II. Materials and Methodology

Area of study

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, study area being the capital city of Kenya there is 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 Mc-Donell College of Health Sciences, Karen Medical Training College, Gertrude's Children 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.

Figure 1: *Map of Nairobi County, Kenya*

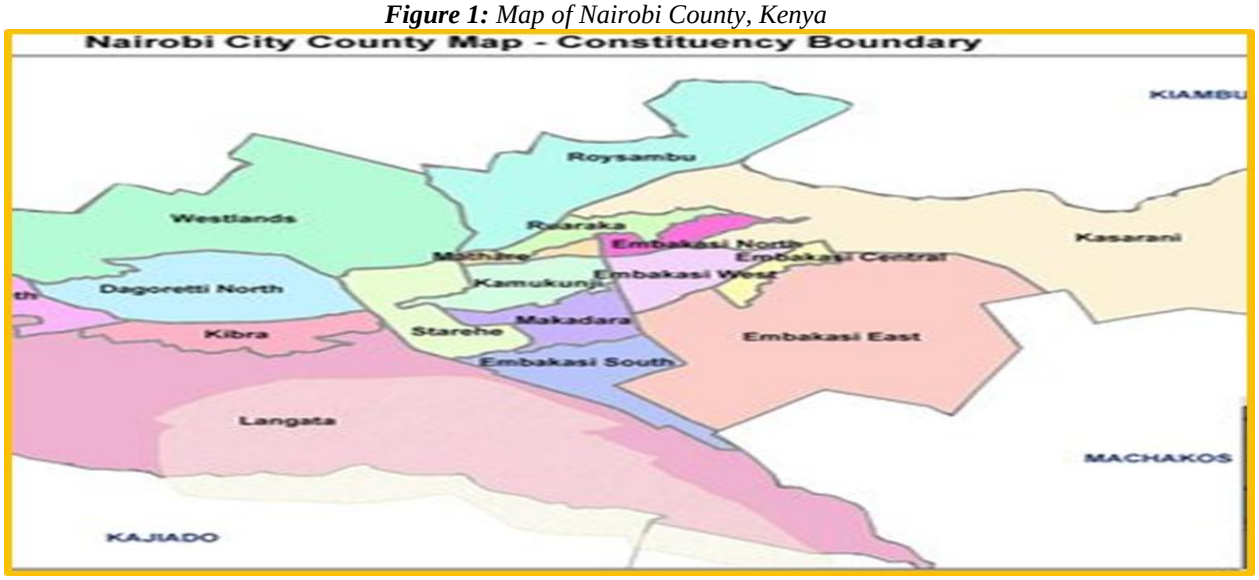


Table 1: *Distribution of 12-middle-level nursing institutions*

No.	Name of the Nursing School	Subcounty
1	Catherine McAuley Nursing School	Starehe
2	Amref Nursing School,	Langata
3	Pumwani School of Nursing,	Kamukunji
4	Gertrude's Children 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 Mc-Donell College of Health Sciences	
12	Karen Medical Training College	

Data collection

The study employed a descriptive survey and Focus Group Discussion to collect data from the participants. A sample size of 394 participants were selected using simple random and stratified sampling technique. 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 the Yamane (1967) formula based on the target population size of 3, 368. Since the population size was known, the sample size was derived as follows:

$$n = \frac{N}{1 + N(e2)}$$

Where: n was the sample size to be determined

N is the Population as given in the sample frame (3,368)

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*1.1=393.3, which was rounded up to the nearest person n=394

Name of Institution	Number of Students	Sample proportion	Sample size by institution
Cluster 1: Private institutions			
Catherine McAuley nursing school- Mater Misericordiae Hospital	**217**	**6.4%**	**26**
St. Francis Kasarani nursing school	**120**	**3.6%**	**14**
Amref nursing school	**600**	**17.8%**	**70**
Cicely Mc-Donell college of health sciences-The Nairobi Hospital	**240**	**7.1%**	**28**
Karen Medical Training College	**110**	**3.2%**	**13**
Gertrude's children hospital school of nursing	**38**	**1.1%**	**4**
Nairobi Women's hospital college	**68**	**2.0%**	**8**
Sample frame 1 – Private institution cluster	***1,393***	***41.4%***	***164***
Cluster 2: Public institutions			
Mathari mental and teaching nursing school	**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 of midwifery	**55**	**1.6%**	**6**
Sample frame 2 – public institution cluster	***1,975***	***58.6%***	***230***
Total	**3,368**		**394**

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 composed of 8-10 participants each except for where the total sample size in an institution was less than this number where all students sampled were engaged. Table 3 shares the distribution of those FGD among the targeted middle-level nursing training institutions.

Name of Institution	Sample size by institution	Survey participants	FGD
Cluster 1: Private/ Faith Based Institutions			
Catherine McAuley Nursing School- Mater Misericordiae Hospital	**26**	**10**	**2 (8pax)**
St. Francis Kasarani Nursing School	**14**	**14**	**-**
Amref Nursing School	**70**	**50**	**2 (10pax)**
Cicely Mc-Donell College of Health Sciences	**28**	**28**	**-**
Karen Medical Training College	**13**	**13**	**-**

Gertrude's Children Hospital School of Nursing	**4**	-	**1 (4pax)**
Nairobi Women's Hospital College	**8**	-	**1 (8pax)**
Sample frame 1 – Private/ Faith based institution cluster	***164***	***115***	***48***
Cluster 2: Public Institutions			
Mathari Mental Teaching Nursing School	**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 of Midwifery	**6**	-	**1 (6pax)**
Sample frame 2 – public institution cluster	***230***	***191***	***11 FGD***

Table 2: *Distribution of survey participants and Focus Group Discussion*

Data Analysis

The gathered data from the participants was cleaned and entered into the Excel, SPSS software based on the response 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 quality of clinical support, assigned preceptors in 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 nursing career, and means of transport to clinical area.

Data on student-related factors affecting effective clinical learner support were subjected for 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 p= 0.01.

III. Results

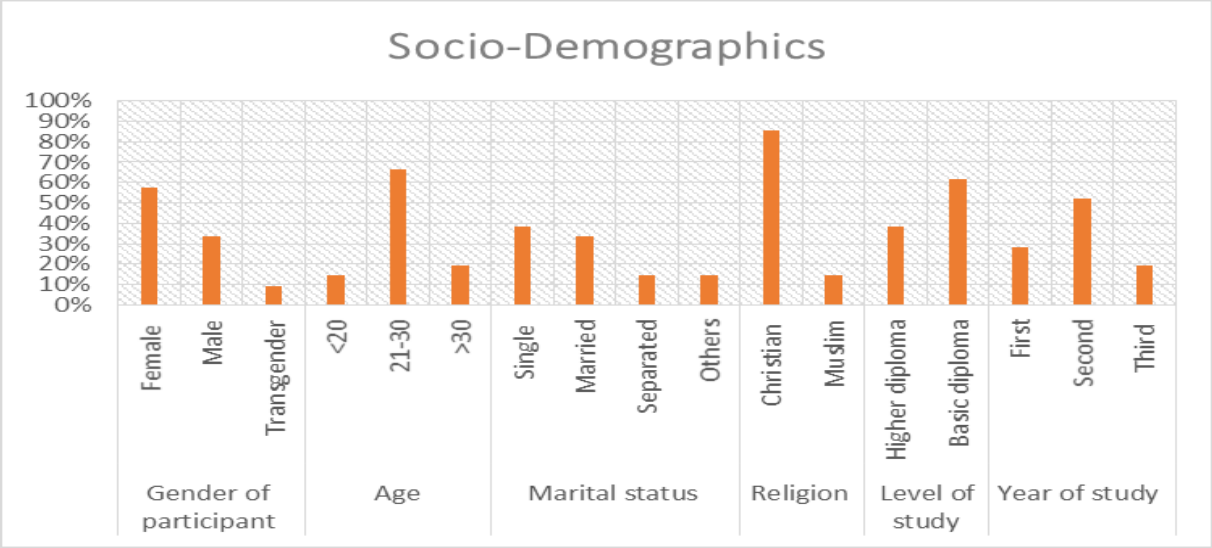
Demographics

Response rate for the study was 98%, with 380 respondents successfully participated out of the study sample size of 394. Table 4 and figure 2 presents the social-demographics of the participants in the study and based on the analysis, majority of the participants were female, Christian, 21-30 year old, second year of study, and had basic diploma.

Table 3: *Socio-demographics characteristics of the participants*

Category	Variable	Frequency	Percentage
Gender of participant	Female	219	58%
	Male	127	33%
	Transgender	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%
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 gender of the participant was significantly associated with effective support. The female gender was more likely to learn effectively than the male and transgender. All the other variables were not significant as indicated in table 5.

Table 4: *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	**P=.006** χ^2=10.40
	Male	38	89		
	Transgender	6	28		
Age	<20	10	44	2	P=.352 χ^2=10.40
	21-30	57	196		
	>30	11	62		
Marital status	Single	35	110	3	P=.453 χ^2=2.
	Married	21	106		
	Separated	10	44		
	Other	12	42		
Religion	Christian	66	260	1	P=.739 χ^2=.111
	Muslim	12	42		
Level of study	Higher diploma	35	110	1	P=.171 χ^2=1.875
	Basic diploma	43	192		
Year of study	First	20	88	2	=.352 χ^2=10.40
	Second	39	160		
	Third	19	54		

Student Related Factors that Determine Effective Clinical Learner Support

All the students reported that they had chosen nursing as their career of choice. None 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) making 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 nor perfect the skill before proceeding to 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 clinical area is a learning site, 76.1% (n=289) of the students reported to have made mistakes while handling the patients. It was reported that majority (85.8%, n=326) of the students were working under supervision from a qualified nurse. During the clinical placement, clinical site fee was catered for by students. Relatively, some students paid for 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 out that majority of the students (85.8%, n=326) came from monogamous families.

The students reported to be motivated to pursue nursing profession so that they can work abroad while others were motivated by the fact that after training, they will get a ready job market for them. The findings presented in table 6 indicated that nursing career pays well and has employment guarantee as indicated by 33.2% (n=126) and 33.4% (n=127) respectively. On the means of transport to clinical area, majority of the students (57.1%, n=217) reported to be dropped in 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 5: *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 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 $\chi^2(1, N=380) = 14.68, p<.001$, $\chi^2(1, N=380) = 22.07, p<.001$, $\chi^2(2, N=380) = 8.14, p=.017$ respectively. The other factors were not statistically significant as shown in table 7

Table 6: *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=.743 χ^2=.11
	Personal choice	62	25		
Skills lab simulations affect quality of clinical support	No	41	89	1	**P<.001*** **χ^2=14.68**
	Yes	37	213		
Assigned preceptors in clinical area	No	16	56	1	P=.692 χ^2=.16
	Yes	62	246		
Students are allowed to make mistakes in the clinical area	No	23	68	1	P=.198 χ^2=.165
	Yes	55	234		
Students are always supposed to work under supervision	No	24	30	1	**P<.001*** **χ^2=22.07**
	Yes	54	272		
Who meets the training costs	Individual	21	106		

	Parents	31	96	2	P=.299
	Guardians	26	100		χ^2=2.42
Family structure	Monogamous	68	258		P=.693
	Polygamous	10	44	1	χ^2=.16
What motivates a student to do nursing profession	Better pay	28	98		
	To work abroad	10		3	P=.399
	To help people	19	54		χ^2=2.95
	Employment guaranteed	21	106		
Means of transport to clinical area	College bus	37	181		**P=.017***
				2	**χ^2=8.14**
	Public matatu	28	62		
	Motorbike	13	59		

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

Table 7: *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
	Transgender	Reference category					
Quality of skills lab simulation affect clinical area learning	No	.895	2.55	1	2.44	.817	7.32
	Yes	Reference category					
Students always need supervision while working in 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	-.200	25.92	1	.82	.39	1.72
	Public means	.082	.04	1	1.09	.47	2.51
	Motorbike	Reference category					

From the above results, only gender of the student, quality of skills lab simulation and students to always work under supervision were significant and were entered into multivariate logistic regression to adjust for confounding factors. After adjusting for confounding factors only gender of the student and 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 area 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)

IV. 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 nursing profession unlike in previous study where the students did not make individual choices hence had challenges in clinical learning support. In the previous study it was reported it was important to carry out the interviews and select the suitable candidates for the nursing training. This selection should be utilized to examine the suitability of the nursing

students during the clinical learning to identify challenges that need to be worked on (Patterson et al., 2019). In another study it was found that nursing students who had their nursing career being chosen for by parents and their financial supporters had challenges in getting supported in the clinical areas because of lack of motivation (Black, 2019).

In the current study the female gender was associated with effective clinical learner support, this is congruent with the results previously reported by Mervat and Youssef who found that the nursing profession has suffered greatly from public stereotyping and for 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 (Mervat & Youssef, 2018). In another study it was found that gender tailoring of allocating students and mentors with the same gender category proved to increase learning experiences (Negarandeh, et.al., 2019).

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 inability to afford learning materials and other personal needs (Gemuhay et. al. 2019). However, in the current study socio-economic status of the parents or guardians was assessed and was not significantly affecting the students clinical learning. During the students placement, the current study found that the most of the parents paid placement fee together with college fee, then it became the responsibility of the college to pay for 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 supervised always 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 trial and error method and in this case patient care is compromised and may take long for the student to learn the right practices. According to Laugaland (2021), the students require to be practising under supervision as this ensure both patient safety and effective clinical learning. In another study it was reported that the student who worked hand in hand with the mentors supervising them always they became competent in the nursing practice (Dyar et al., 2020)

V. Conclusion

The demographic characteristics for the study indicated that majority of the students had a mean age of 23.49 with majority aged between 20 to 30 years old. Among the students' characteristics which 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 significance association between effective clinical learner support and the following factors; what the student considered to choose 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 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 that that sensitization through the community leaders, nurses and senior secondary schools career day that either gender can practice as a nurse to mitigate on 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' attitude on clinical learner support and other healthcare provision cadres to determine if the study will give the same results.

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