

# An Assessment of Factors Influencing Clinical Learning among Diploma Nursing Students at Moi Teaching and Referral Hospital Eldoret, Kenya

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**How to cite this paper:** Robert, S.N., Mutinda, A.K., Machira, G. and Kavulavu, B.M. (2025) An Assessment of Factors Influencing Clinical Learning among Diploma Nursing Students at Moi Teaching and Referral Hospital Eldoret, Kenya. *Open Journal of Nursing*, 15, 569-591.

<https://doi.org/10.4236/ojn.2025.158042>

**Received:** June 14, 2025

**Accepted:** August 5, 2025

**Published:** August 8, 2025

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## Abstract

Whereas clinical learning is a vital aspect in nursing education, enabling students to gain practical skills and experience under supervision, several factors can promote or hinder its effectiveness. This study assessed factors influencing clinical learning among diploma nursing students at Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya. This mixed-methods cross-sectional study combined a quantitative survey of 304 nursing students and 4 qualitative focus groups of 6 - 8 participants. Quantitative data were analyzed using SPSS version 27 for descriptive, bivariate, and multivariate statistics, while qualitative data underwent thematic analysis. Results indicated that 48.03% of students strongly agreed they effectively applied theoretical knowledge during placements ( $\bar{x} = 4.27$ ,  $SD = 0.95$ ). Confidence in managing complex cases was moderate ( $\bar{x} = 3.99$ ,  $SD = 0.93$ ), while anxiety negatively impacted 22.04% of students ( $\bar{x} = 2.90$ ,  $SD = 1.37$ ). Institutional challenges such as inadequate supervision (37.83% disagreement,  $\bar{x} = 2.37$ ) and resource shortages (36.51% disagreement,  $\bar{x} = 2.43$ ) significantly hindered learning outcomes ( $\chi^2 = 66.000$ ,  $p < 0.001$ ). Regression analysis identified key predictors: student-related factors ( $B = 0.124$ ,  $p = 0.023$ ), training institution factors ( $B = -0.148$ ,  $p = 0.003$ ), and clinical factors ( $B = -0.112$ ,  $p = 0.034$ ), explaining 12.5% variance ( $R^2 = 12.5\%$ ). Thematic findings emphasized supportive preceptorship, adequate resources, and alignment between theory and practice. These insights highlight the need for enhanced mentorship, resource investment, and improved institutional practices to optimize clinical learning and graduate competencies.

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## Keywords

Clinical Learning, Nursing Education, Supervision, Resource Availability, Student Confidence, Theory-Practice Gap, Kenya

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## 1. Introduction

Clinical placements are a cornerstone of nursing education, offering students an opportunity to apply theoretical knowledge and develop critical skills in real-world settings. However, effective clinical learning is influenced by various factors, including supportive environments, positive interpersonal relationships, and student engagement. Conversely, barriers such as insufficient supervision, limited learning opportunities, and negative staff attitudes can impede the learning process [1]. Infrastructure limitations, including inadequate supplies and staffing, further challenge nursing students in clinical settings [2]. Strategies such as fostering student motivation and resilience have been suggested to enhance learning experiences [3]. Collaboration between academic institutions and healthcare facilities has also been identified as essential in bridging the gap between theoretical instruction and practical application, enabling nursing students to translate classroom knowledge into competent patient care [4]. These findings highlight the multidimensional nature of factors impacting clinical nursing education and underscore the importance of addressing them to improve learning outcomes.

The integration of theoretical knowledge with practical skills is central to effective nurse training. While theoretical learning provides a foundational understanding of nursing concepts, clinical practice is essential for developing the skills necessary to meet real-world healthcare demands [5]. Without practical application, theoretical knowledge is insufficient to prepare students for professional roles [6]. Clinical learning enables students to transition from novices to competent practitioners, guided by experienced mentors [7] [8]. However, the gap between classroom knowledge and clinical practice remains a significant challenge in nursing education worldwide [9] [10]. In Kenya, nursing schools like Moi Teaching and Referral Hospital College of Health Sciences (MTRH-CHS) and the Kenya Medical Training College (KMTTC) face these challenges, compounded by limited resources and gaps in mentorship programs [11]. As nursing education is increasingly considered the “heart of the profession” [10], addressing these challenges is imperative to ensure students’ successful transition into professional practice.

The persistent theory-practice gap undermines nursing students’ confidence and preparedness to manage real-world patient care. Studies highlight that the gap stems from traditional teaching methods, limited integration of evidence-based practices, and poor coordination between academic institutions and clinical settings [12] [13]. In clinical settings, students often face stressful environments, unclear role expectations, and insufficient mentorship, which exacerbate the gap [4]. Observational learning, as proposed by Bandura’s social learning theory, plays a

crucial role in bridging this divide, allowing students to model and imitate experienced nurses' practices [14]. Additionally, recent studies emphasize the importance of supportive preceptorship models and structured integration of theoretical and practical training [5] [15]. Addressing the theory-practice gap requires targeted interventions, including enhanced mentorship programs, improved supervision, and resource allocation.

This study aimed to explore the factors influencing clinical learning among diploma nursing students on clinical placement at Moi Teaching and Referral Hospital (MTRH). It sought to examine student-related, training institution-related, and clinical setting-related factors that affect clinical education at the institution. Understanding these influences is essential for developing strategies to address existing challenges, enhance mentorship, and align theoretical and practical training. By addressing these gaps, the study intended to contribute to improving clinical education, strengthening nursing graduates' competencies, and ensuring high-quality patient care.

## **2. Methods**

### **2.1. Research Design**

This study was conducted using a mixed-methods explanatory sequential design in August 2024. The quantitative phase preceded the qualitative phase, allowing the initial quantitative findings to inform the qualitative exploration [16]. This approach facilitated a comprehensive understanding of the research problem by combining numerical data with rich, descriptive insights [16].

### **2.2. Study Area and Target Population**

The research was conducted at MTRH in Eldoret, Kenya. This national referral hospital serves as a primary clinical training site for diploma nursing students from MTRH-CHS and the KMTC Eldoret Campus (KMTC-EC). The target population included a total of 676 students. Of these, the accessible population meeting the eligibility criteria for the study was 304 students, second- and third-year students (102 from MTRH-CHS, and 202 from KMTC-EC) who were placed at MTRH for clinical attachments.

### **2.3. Sampling and Eligibility Criteria**

Given the relatively small and well-defined accessible population of 304 eligible diploma nursing students, a census sampling method was deemed most appropriate. This approach was chosen as it maximizes on the representativeness of the sample and eliminates selection bias [17] [18]. All eligible students—those in their second or third year and undergoing clinical placements at MTRH—were included. Students unwilling to provide informed consent were excluded. This approach maximized data reliability and eliminated selection bias.

### **2.4. Data Collection**

Data collection employed two primary tools: a structured questionnaire and a

semi-structured focus group discussion (FGD) guide. The questionnaire consisted of demographic items and 5-point Likert-scale questions addressing the study's variables of interest. For qualitative data, focus group discussions (FGDs) were conducted with four groups of 6 - 8 students each, two for each institution. The FGDs explored experiences and perceptions of the preceptorship model in clinical learning.

Prior to official data collection, a pilot test of the data collection tools was done using a sample population of 33 students in a neighboring hospital of similar level. Reliability was assessed using Cronbach's Alpha to measure internal consistency, for which the questionnaire demonstrated high reliability with a Cronbach's Alpha value of 0.850. The standardized item analysis yielded a slightly lower but still strong value of 0.840 across all the items in the questionnaire. These results indicate that the instrument was reliable and consistent for collecting data on factors affecting clinical learning among diploma nursing students.

## **2.5. Data Management and Analysis**

Quantitative data were coded and entered into Excel for cleaning and then analyzed using SPSS version 27. Descriptive statistics summarized demographic data and response patterns while inferential statistics including chi-square tests, correlation, and multiple linear regression were used to model relationships between variables and clinical learning performance. For the inferential statistics, composite scores for "student performance", SRF (student-related factors), TIR (training institution-related factors), and CSR (clinical setting-related factors) were calculated by averaging the individual Likert-scale item responses. Thus, for the composite scores, higher values indicate more positive perceptions of the respective factors, and lower values denote more negative perceptions. Qualitative data were transcribed to text from the audio recordings and analyzed thematically.

## **2.6. Ethical Considerations**

Ethical approval was secured from Kenya Methodist University followed by a research license from the National Commission for Science, Technology, and Innovation (NACOSTI). Participants were first informed about the study's objectives, procedures, and voluntary nature before being asked to voluntarily consent in writing. Confidentiality was ensured through unique alphanumeric identifiers and secure storage of data.

## **3. Results**

### **3.1. Demographics of Study Participants**

The study sample consisted of a total of 304 respondents, which was 100% response rate. In terms of age distribution, the majority of participants were between 20 - 24 years, accounting for 229 (76.8%) of the total sample, followed by 52 (17.4%) who were in the 25 - 29 age bracket, and 17 (5.7%) who were aged 15 - 19 years. Regarding gender, female participants made up 184 (60.5%) of the respond-

ents, while 120 (39.5%) were male. As for the institutions of study, students from the KMTC-EC formed the larger group, with 202 (66.4%) participants, while 102 (33.6%) were from MTRH-CHS. This demographic distribution reflects a youthful cohort predominantly in the early stages of their professional training, with a higher representation of females, and a significant portion attending KMTC (**Table 1**).

**Table 1.** Demographic characteristics of respondents.

Variable	Particulars	Frequency (n)	Percentage (%)
Age	15 - 19	17	5.70
	20 - 24	229	76.85
	25 - 29	52	17.45
Sex	Female	184	60.53
	Male	120	39.47
Institution	KMTC	202	66.45
	MTRH CHS	102	33.55

### 3.2. Self-Perceived Performance in Clinical Placements

Self-perceived performance in clinical placements revealed several notable trends. A significant portion of respondents, 146 (48.03%), strongly agreed that they effectively applied nursing knowledge during clinical placements, with a mean score of 4.27 (SD = 0.95). Similarly, 148 (48.68%) strongly agreed that their clinical reasoning abilities enabled effective patient assessment and care planning, reflecting a high mean of 4.26 (SD = 0.90). However, in managing complex patient cases, a smaller percentage, 99 (32.57%), strongly agreed, indicating slightly lower confidence in this area, with a mean of 3.99 (SD = 0.93). Notably, the ability to integrate evidence-based knowledge showed more neutral responses, with 54 (17.76%) neither agreeing nor disagreeing and a mean of 3.97 (SD = 0.99). Overall, the students reported high confidence in their clinical skills, but areas such as managing complex cases and integrating evidence-based care showed room for improvement (**Table 2**).

**Table 2.** Likert scale response on self-perceived performance in clinical placements.

Statement	Opinion	Frequency (n [%])	Mean	SD
I effectively apply nursing knowledge learned in class during clinical placements	Strongly Disagree	13 (4.28)	4.270	0.951
	Disagree	4 (1.32)		
	Neutral	17 (5.59)		
	Agree	124 (40.79)		
	Strongly Agree	146 (48.03)		

## Continued

I can proficiently demonstrate most of the clinical skills required with minimal supervision	Strongly Disagree	8 (2.63)	4.253	0.947
	Disagree	14 (4.61)		
	Neutral	17 (5.59)		
	Agree	119 (39.14)		
	Strongly Agree	146 (48.03)		
I am able to integrate evidence-based knowledge into clinical care decisions	Strongly Disagree	9 (2.96)	3.967	0.998
	Disagree	16 (5.26)		
	Neutral	54 (17.76)		
	Agree	122 (40.13)		
	Strongly Agree	103 (33.88)		
My clinical reasoning abilities enable me to effectively assess patients and plan appropriate care	Strongly Disagree	4 (1.32)	4.257	0.901
	Disagree	12 (3.95)		
	Neutral	34 (11.18)		
	Agree	106 (34.87)		
	Strongly Agree	148 (48.68)		
I am confident in my ability to manage complex patient cases during clinical placements	Strongly Disagree	7 (2.30)	3.993	0.933
	Disagree	11 (3.62)		
	Neutral	58 (19.08)		
	Agree	129 (42.43)		
	Strongly Agree	99 (32.57)		
I have strong psycho-motor skills in giving patient care during clinicals	Strongly Disagree	7 (2.30)	4.039	0.984
	Disagree	18 (5.92)		
	Neutral	45 (14.80)		
	Agree	120 (39.47)		
	Strongly Agree	114 (37.50)		
My communication and interpersonal skills with patients are highly effective during placements	Strongly Disagree	14 (4.61)	4.217	1.024
	Disagree	9 (2.96)		
	Neutral	22 (7.24)		
	Agree	111 (36.51)		
	Strongly Agree	148 (48.68)		
I am able to meet the clinical learning objectives successfully by the end of my rotation	Strongly Disagree	4 (1.32)	4.480	0.836
	Disagree	8 (2.63)		
	Neutral	20 (6.58)		
	Agree	78 (25.66)		
	Strongly Agree	194 (63.82)		
My training has empowered me to practice safely as a student nurse in the clinical environment	Strongly Disagree	5 (1.64)	4.418	0.808
	Disagree	6 (1.97)		
	Neutral	14 (4.61)		
	Agree	111 (36.51)		
	Strongly Agree	168 (55.26)		

## Continued

	Strongly Disagree	6 (1.97)	4.322	0.864
Overall, I rate my performance in clinical placements so far as very good	Disagree	5 (1.64)		
	Neutral	29 (9.54)		
	Agree	109 (35.86)		
	Strongly Agree	155 (50.99)		

### 3.3. Student-Related (SR) Factors

High motivation was reported by 99 (32.57%, mean = 3.65, SD = 1.27,  $\chi^2 = 45.502$ ,  $p = 0.000$ ). Confidence in abilities was high among 132 (43.42%) agreeing and 74 (24.34%) strongly agreeing (mean = 3.75, SD = 1.05,  $\chi^2 = 78.739$ ,  $p = 0.000$ ). Anxiety negatively impacted 67 (22.04%) respondents (mean = 2.90, SD = 1.37). Financial constraints presented mixed responses, with 59 (19.41%) strongly agreeing and 58 (19.08%) strongly disagreeing (mean = 3.06, SD = 1.41,  $\chi^2 = 41.379$ ,  $p = 0.000$ ). Integration of theory into practice was notable, with 135 (44.41%) strongly agreeing (mean = 4.03, SD = 1.16,  $\chi^2 = 105.968$ ,  $p = 0.000$ ). Communication difficulties and lack of self-directedness affected 41 (13.49%) and 31 (10.20%) respondents respectively (Table 3).

**Table 3.** Likert scale on student-related (SR) factors.

Statement	Opinion	Frequency (%)	Mean	SD	X <sup>2</sup>	p-value
I am highly motivated during my clinical placements	Strongly Disagree	27 (8.88)	3.651	1.270	45.502	0.000
	Disagree	35 (11.51)				
	Neutral	49 (16.12)				
	Agree	99 (32.57)				
	Strongly Agree	94 (30.92)				
I have high anxiety levels during clinical placements which negatively impacts my performance	Strongly Disagree	67 (22.04)	2.901	1.373	20.169	0.064
	Disagree	55 (18.09)				
	Neutral	69 (22.70)				
	Agree	67 (22.04)				
	Strongly Agree	46 (15.13)				
I have high levels of confidence in my abilities during clinical placements	Strongly Disagree	13 (4.28)	3.750	1.051	78.739	0.000
	Disagree	26 (8.55)				
	Neutral	59 (19.41)				
	Agree	132 (43.42)				
	Strongly Agree	74 (24.34)				
I feel I have low self-esteem which negatively impacts my skills acquisition in the clinical setting	Strongly Disagree	108 (35.53)	2.306	1.254	25.109	0.014
	Disagree	79 (25.99)				
	Neutral	47 (15.46)				
	Agree	56 (18.42)				
	Strongly Agree	14 (4.61)				

**Continued**

Financial constraints negatively affect my ability to maximize learning in clinical placements	Strongly Disagree	58 (19.08)	3.063	1.407	41.379	0.000
	Disagree	58 (19.08)				
	Neutral	54 (17.76)				
	Agree	75 (24.67)				
	Strongly Agree	59 (19.41)				
I am able to integrate theory learned in class during clinical placements	Strongly Disagree	17 (5.59)	4.026	1.163	105.968	0.000
	Disagree	23 (7.57)				
	Neutral	30 (9.87)				
	Agree	99 (32.57)				
	Strongly Agree	135 (44.41)				
Personal problems and worries distract me during my clinical placement time	Strongly Disagree	61 (20.07)	2.875	1.349	53.787	0.000
	Disagree	65 (21.38)				
	Neutral	78 (25.66)				
	Agree	51 (16.78)				
	Strongly Agree	49 (16.12)				
I struggle with certain skills and procedures which negatively impacts my learning.	Strongly Disagree	63 (20.72)	2.819	1.321	33.372	0.001
	Disagree	71 (23.36)				
	Neutral	65 (21.38)				
	Agree	68 (22.37)				
	Strongly Agree	37 (12.17)				
My communication skills make it difficult to engage with clinical staff and patients.	Strongly Disagree	131 (43.09)	2.200	1.368	51.353	0.000
	Disagree	80 (26.32)				
	Neutral	23 (7.57)				
	Agree	41 (13.49)				
	Strongly Agree	29 (9.54)				
I lack self-directedness and independence in my learning approach during clinical.	Strongly Disagree	150 (49.34)	2.026	1.302	40.224	0.000
	Disagree	75 (24.67)				
	Neutral	24 (7.89)				
	Agree	31 (10.20)				
	Strongly Agree	24 (7.89)				

**3.4. Training Institution Related (TIR) Factors**

The analysis of training institution-related factors highlighted critical gaps, including improper supervision (mean = 2.37, SD = 1.37,  $\chi^2 = 70.332$ ,  $p = 0.000$ ), insufficient learning resources (mean = 2.43, SD = 1.32,  $\chi^2 = 66.000$ ,  $p = 0.000$ ), and inadequate curriculum coverage of clinical skills (mean = 2.41, SD = 1.29,  $\chi^2 = 77.212$ ,  $p = 0.000$ ). Limited opportunities for feedback (mean = 2.48, SD = 1.35,  $\chi^2 = 66.957$ ,  $p = 0.000$ ) and ineffective communication between training institu-

tions and clinical sites (mean = 2.32, SD = 1.29,  $\chi^2 = 47.252$ ,  $p = 0.000$ ) were also significant (**Table 4**).

**Table 4.** Likert scale on training institution-related (TIR) factors.

Statement	Opinion	Frequency (%)	Mean	SD	Chi-square Value	p-value
There is shortage of qualified nursing instructors to facilitate my learning in clinical placements	Strongly Disagree	86 (28.29)	2.704	1.462	29.241	0.004
	Disagree	73 (24.01)				
	Neutral	41 (13.49)				
	Agree	53 (17.43)				
	Strongly Agree	51 (16.78)				
The instructors use poor teaching methods that do not prepare me adequately for clinics	Strongly Disagree	111 (36.51)	2.470	1.453	28.626	0.004
	Disagree	72 (23.68)				
	Neutral	26 (8.55)				
	Agree	57 (18.75)				
	Strongly Agree	38 (12.50)				
There is improper supervision by my instructors during clinical placement	Strongly Disagree	115 (37.83)	2.365	1.367	70.332	0.000
	Disagree	70 (23.03)				
	Neutral	38 (12.50)				
	Agree	55 (18.09)				
	Strongly Agree	26 (8.55)				
There are insufficient learning resources (skills labs, simulation equipment etc) provided to support my clinical skills acquisition	Strongly Disagree	94 (30.92)	2.428	1.323	66.000	0.000
	Disagree	96 (31.58)				
	Neutral	28 (9.21)				
	Agree	62 (20.39)				
	Strongly Agree	24 (7.89)				
There is lack of practical rehearsal opportunities in simulation labs/skills labs before going to actual clinical setting	Strongly Disagree	96 (31.58)	2.477	1.352	42.109	0.000
	Disagree	85 (27.96)				
	Neutral	30 (9.87)				
	Agree	68 (22.37)				
	Strongly Agree	25 (8.22)				
The training curriculum does not adequately cover all the skills required during clinical placements	Strongly Disagree	91 (29.93)	2.405	1.286	77.212	0.000
	Disagree	99 (32.57)				
	Neutral	37 (12.17)				
	Agree	54 (17.76)				
	Strongly Agree	23 (7.57)				
There are too few opportunities for instructors to provide feedback on my performance during clinical placements	Strongly Disagree	97 (31.91)	2.484	1.352	66.957	0.000
	Disagree	76 (25.00)				
	Neutral	47 (15.46)				
	Agree	55 (18.09)				
	Strongly Agree	29 (9.54)				

**Continued**

There is lack of constructive feedback from my instructors on areas of weakness to improve my clinical practice	Strongly Disagree	92 (30.26)	2.431	1.296	55.116	0.000
	Disagree	91 (29.93)				
	Neutral	42 (13.82)				
	Agree	56 (18.42)				
	Strongly Agree	23 (7.57)				
Communication and information sharing between my training institution and the clinical placement sites is ineffective	Strongly Disagree	98 (32.24)	2.319	1.287	47.252	0.000
	Disagree	104 (34.21)				
	Neutral	36 (11.84)				
	Agree	39 (12.83)				
	Strongly Agree	27 (8.88)				
There is lack of training on use of technological equipment I encounter during clinical placements	Strongly Disagree	102 (33.55)	2.447	1.399	36.264	0.000
	Disagree	83 (27.30)				
	Neutral	38 (12.50)				
	Agree	43 (14.14)				
	Strongly Agree	38 (12.50)				

**3.5. Clinical Setting-Related (CSR) Factors**

The analysis of clinical setting-related factors revealed key challenges. Lack of cooperation between clinical staff and students was noted, with 47 (15.46%) agreeing and 27 (8.88%) strongly agreeing (mean = 2.61, SD = 1.37,  $\chi^2 = 64.820$ ,  $p = 0.000$ ). Inadequate personal protective equipment was reported, with 68 (22.37%) agreeing and 33 (10.86%) strongly agreeing (mean = 3.02, SD = 1.45,  $\chi^2 = 53.259$ ,  $p = 0.000$ ). Traumatic experiences were experienced or witnessed by 72 (23.68%) agreeing and 61 (20.07%) strongly agreeing (mean = 2.34, SD = 1.16,  $\chi^2 = 24.396$ ,  $p = 0.018$ ). Lack of structured orientation programs was highlighted by 38 (12.50%) agreeing and 16 (5.26%) strongly agreeing (mean = 2.31, SD = 1.20,  $\chi^2 = 43.860$ ,  $p = 0.000$ ). Limited opportunities to apply knowledge and develop skills were identified, with 49 (16.12%) agreeing and 14 (4.61%) strongly agreeing (mean = 2.84, SD = 1.38,  $\chi^2 = 103.513$ ,  $p = 0.000$ ) (Table 5).

**Table 5.** Likert scale on clinical setting-related (CSR) factors.

Statement	Opinion	Frequency (%)	Mean	SD	$\chi^2$	p-value
There is a lack of cooperation between clinical staff and students during my placement	Strongly Disagree	103 (33.88)	2.609	1.372	64.820	0.000
	Disagree	77 (25.33)				
	Neutral	50 (16.45)				
	Agree	47 (15.46)				
	Strongly Agree	27 (8.88)				
The clinical placement sites lack adequate personal protective equipment for students	Strongly Disagree	82 (26.97)	3.023	1.445	53.259	0.000
	Disagree	89 (29.28)				
	Neutral	32 (10.53)				
	Agree	68 (22.37)				
	Strongly Agree	33 (10.86)				

**Continued**

I have witnessed or undergone traumatic experiences at the clinical placement sites	Strongly Disagree	65 (21.38)	2.339	1.155	24.396	0.018
	Disagree	57 (18.75)				
	Neutral	49 (16.12)				
	Agree	72 (23.68)				
	Strongly Agree	61 (20.07)				
There is lack of structured programs to orient students at each new clinical placement site	Strongly Disagree	82 (26.97)	2.309	1.204	43.860	0.000
	Disagree	107 (35.20)				
	Neutral	61 (20.07)				
	Agree	38 (12.50)				
	Strongly Agree	16 (5.26)				
There are too few opportunities facilitated at the sites to apply my knowledge and develop clinical skills	Strongly Disagree	96 (31.58)	2.839	1.378	103.513	0.000
	Disagree	95 (31.25)				
	Neutral	50 (16.45)				
	Agree	49 (16.12)				
	Strongly Agree	14 (4.61)				
The number of students placed clinically at any one site exceeds capacity of staff to adequately supervise learning	Strongly Disagree	63 (20.72)	2.674	1.265	45.581	0.000
	Disagree	81 (26.64)				
	Neutral	48 (15.79)				
	Agree	66 (21.71)				
	Strongly Agree	46 (15.13)				
There is lack of inter-professional education between students of different cadres at the clinical sites	Strongly Disagree	66 (21.71)	2.319	1.256	47.188	0.000
	Disagree	81 (26.64)				
	Neutral	72 (23.68)				
	Agree	56 (18.42)				
	Strongly Agree	29 (9.54)				
The staff have unwelcoming attitudes towards students hindering my engagement at clinical sites	Strongly Disagree	99 (32.57)	2.563	1.314	38.338	0.000
	Disagree	95 (31.25)				
	Neutral	45 (14.80)				
	Agree	44 (14.47)				
	Strongly Agree	21 (6.91)				
There are communication barriers between students and clinical staff due to hierarchy/intimidation	Strongly Disagree	79 (25.99)	2.434	1.236	33.082	0.001
	Disagree	88 (28.95)				
	Neutral	56 (18.42)				
	Agree	49 (16.12)				
	Strongly Agree	32 (10.53)				
There is lack of consistent preceptorship by specific clinical staff members during placements	Strongly Disagree	83 (27.30)	2.609	1.372	60.209	0.000
	Disagree	97 (31.91)				
	Neutral	53 (17.43)				
	Agree	51 (16.78)				
	Strongly Agree	20 (6.58)				

### 3.6. Association between Predictors and Student Performance

Composite scores were created for each of the major variables by averaging responses within each category to simplify analysis. These scores were used as predictors in correlation and regression analysis to assess their relationship with student performance. Correlation analysis showed that TIR had a low but significant negative correlation with performance ( $r = -0.31$ ,  $p < 0.0001$ ), suggesting that factors such as poor supervision and inadequate feedback are linked to lower outcomes. Similarly, CSR exhibited a negative correlation with performance ( $r = -0.29$ ,  $p < 0.0001$ ), highlighting the impact of inadequate resources and lack of cooperation in clinical settings. Student-related factors showed no significant correlation with performance ( $r = -0.004$ ,  $p = 0.937$ ), indicating minimal influence on outcomes (Table 6).

**Table 6.** Correlational analysis.

Factor	Pearson's correlation coefficient.	P-value
Student-related factors (SRF)	-0.00451	0.9376
Training institution-related (TIR)	-0.31422	0.0000
Clinical setting-related factors (CSR)	-0.28979	0.0000

**Table 7.** Multiple linear regression; Model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.353 <sup>a</sup>	0.125	0.116	0.57492

<sup>a</sup>Predictors: (Constant), Clinical setting-related factors, Student-related factors, Training institution-related factors.

**Table 8.** Regression coefficients.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig. (p)	
	B	Std. Error	Beta			
(Constant)	4.502	0.167		26.974	0.000	
1	SRF	0.124	0.054	0.135	2.285	0.023
	TIR	-0.148	0.049	-0.240	-3.018	0.003
	CSR	-0.112	0.053	-0.165	-2.133	0.034

<sup>a</sup>Dependent Variable: Student Performance; <sup>b</sup>Predictors: (Constant), Student-related factors (SRF), Training institution-related factors (TIR), Clinical setting-related factors (CSR).

The multiple linear regression analysis revealed that student factors, clinical setting-related factors, and training institution-related factors (TIR) collectively explained 12.5% of the variance in student performance ( $R^2 = 0.125$ , adjusted  $R^2 = 0.116$ ) (Table 7). The model was statistically significant ( $F = 13.424$ ,  $p < 0.001$ ). All factors were shown to be statistically significant: SRF positively influenced per-

formance ( $B = 0.124$ ,  $t = 2.285$ ,  $p = 0.023$ ), while TIR ( $B = -0.148$ ,  $t = -3.018$ ,  $p = 0.003$ ) and CSR ( $B = -0.112$ ,  $t = -2.133$ ,  $p = 0.034$ ) had significant negative effects (Table 8).

### 3.7. Main Themes from the FGDs

The main themes identified in the qualitative data revolved around clinical environment challenges, student confidence and attitudes, and institutional support. Key themes included the alignment of theory and practice, where students reported that theoretical knowledge aligned with clinical experiences, but resources like equipment and staff were often lacking. Nurses' attitudes significantly impacted learning, with both positive and negative effects on student engagement. Confidence-building through hands-on experience was crucial, though anxiety and self-esteem issues hindered some students. Additionally, the inconsistency in tutor availability and feedback was a major concern, with students feeling unsupported at times. These themes highlight the complex interplay of factors shaping students' clinical learning experiences. These are summarized in Table 9.

**Table 9.** Factors impacting clinical learning experiences among nursing students from the FGDs.

Main Theme	Sub-Theme	Description	Sample Quote
Clinical Setting-Related Factors	Clinical theory-practice alignment	Alignment between theoretical knowledge and clinical practice.	"The approach is fair, what we are taught is what we come across in the clinical area." (Student C, FGD 1)
	Nurses fill teaching gap	Nurses' role in teaching and filling gaps in clinical education.	"We haven't reached a point where the school has had to help with clinical weaknesses; the nurses teach us where we don't know." (Student A, FGD 1)
	Resource availability impacts growth	Availability of clinical resources like equipment, staff, and supplies.	"The hospital needs more resources and staff to teach us. The school has done its best theoretically." (Student D, FGD 1)
	Improvised learning due to resources	Students' adaptation to resource shortages by improvising procedures.	"Due to lack of sterile equipment, we sometimes have to improvise procedures." (Student A, FGD 1)
	Exposure to many patients	Opportunities to interact with a wide variety of patients, enhancing learning experiences.	"The approach in MTRH has been good, we get exposed to many conditions and patients." (Student A, FGD 2)
	Shouting and lack of support	Negative interactions, like shouting or lack of support during procedures, impact learning.	"Shouting is a big challenge, and they don't help us when we are wrong in a procedure." (Student C, FGD 2)
	Nurses expect prior knowledge	Expectation from nurses that students should already know procedures before clinical exposure.	"The problem is that nurses expect us to know procedures even if it's our first time." (Student A, FGD 2)
	Understaffing affecting supervision	Staff shortages leading to reduced supervision and guidance for students.	"Understaffing is a challenge, with few nurses supervising many students in wards." (Student A, FGD 3)

**Continued**

	Attitudes demoralize learning	Negative attitudes from nurses, including high standards and criticism, that affect students' motivation.	"Nurses' high standards demoralize students." (Student B, FGD 4)
Student-Related Factors	Positive learning experience	Student self-perception of learning and gaining new skills during placements.	"I've learnt a lot, like the procedures that I couldn't have done before." (Student C, FGD 1)
	Confidence building	Growth in confidence through hands-on practice and constructive feedback.	"Confidence has increased with more hands-on experience, especially in procedures like administering medication." (Student C, FGD 3)
	Self-directed learning	Emphasis on students taking responsibility for their own learning and development during clinical placements.	"Students should take clinical rotations seriously and be self-directed in learning." (Student A, FGD 3)
	Lack of self-esteem and anxiety	Anxiety and low self-esteem hindering students' ability to perform in clinical settings.	"Some nurses' attitudes lower our self-esteem, especially when we're harassed for making mistakes." (Student F, FGD 4)
Training Institution-Related Factors	Tutor attitude impacts learning	The variability of tutors' attitudes and their effect on the learning process.	"It depends on the tutor. You may find one who's good, or another with an attitude, so it depends on the tutor." (Student A, FGD 1)
	Lack of follow-up on weaknesses	Limited follow-up by tutors on students' weaknesses after assessments.	"There is little follow-up from tutors regarding our weaknesses, except on assessment days." (Student C, FGD 4)
	Lack of communication with the school	Limited communication between the clinical setting and the educational institution regarding student progress.	"The school should follow up on students and provide a suggestion box for us to air our grievances." (Student C, FGD 2)
Clinical Setting-Related Factors	Preceptors too busy to teach	Preceptors' workload limiting their availability to teach students.	"Preceptors are often busy and do not have time to teach, especially when there are too many patients." (Student B, FGD 4)
	Learning through independent tasks	Learning by taking initiative and performing tasks independently, even when unsupported.	"Nurses sometimes leave us to administer drugs alone, but this helps us learn and build skills." (Student C, FGD 3)
	Nurses' attitudes affect learning	The impact of nurses' attitudes, both positive and negative, on the students' learning experience.	"Nurses sometimes have a bad attitude and expect you to know everything from class." (Student E, FGD 3)
	Workload affects learning opportunities	The relationship between the number of patients and learning time, highlighting how heavy workloads reduce learning.	"When there are fewer patients, we have more time to learn." (Student C, FGD 3)

## 4. Discussion

### 4.1. Student-Related Factors and Clinical Performance

The findings highlighted the complex role of student-related factors such as motivation, confidence, anxiety, and self-esteem in shaping clinical performance. Motivation emerged as a key determinant of student engagement, consistent with

previous research emphasizing its role in fostering clinical competency. Motivated students tend to exhibit proactive learning behaviors, allowing them to integrate theoretical knowledge into practice more effectively [19] [20]. Confidence was also identified as an essential factor, with students reporting that repeated practice and constructive supervision helped them gain self-assurance in clinical skills [21] [22]. This aligns with studies showing that hands-on exposure and preceptorship enhance confidence, enabling students to overcome initial apprehensions and perform tasks independently [23].

Conversely, anxiety was found to negatively influence student engagement and performance [24]-[26]. Previous research corroborates that anxiety can impair cognitive functioning and hinder decision-making, creating barriers to effective learning in clinical environments [27]. Unfavorable interactions with clinical staff, such as being reprimanded in front of patients, further exacerbated anxiety, making students hesitant to seek help or ask questions [24] [25]. This finding is consistent with studies suggesting that anxiety can lead to avoidance behaviors, which restrict learning opportunities and erode confidence over time [28]. Addressing these challenges requires creating supportive clinical environments that reduce stressors and foster psychological safety [29].

Self-esteem emerged as another critical factor, with students reporting that their ability to acquire skills was influenced by their confidence in their competencies [29] [30]. The literature emphasizes that high self-esteem is integral to success in clinical settings, as it promotes autonomy and professional development [24] [25]. Students who develop self-efficacy through practice and constructive feedback are better equipped to face the challenges of clinical placements [31] [32]. However, self-esteem can vary based on cultural and individual factors, necessitating tailored interventions to bolster confidence in students who may be struggling [33] [34].

Resilience, while not explicitly measured, emerged as a sub-theme in the qualitative data. Students who adapted to stressful environments and overcame initial fears demonstrated better performance over time [35] [36]. Resilience has been identified in the literature as a critical trait for nursing students, helping them navigate the demands of clinical practice and develop adaptive coping mechanisms [37] [38]. These findings underscore the importance of fostering resilience through structured support programs and experiential learning opportunities [36] [39]. Interestingly, the absence of a statistically significant relationship between student-related factors and performance suggests that external variables, such as institutional and clinical environment support, may play a more dominant role in determining outcomes. This aligns with studies emphasizing the importance of addressing systemic barriers alongside individual factors to optimize clinical learning [7] [13].

These findings must also be interpreted within the socio-cultural context of the country wherein the study happened. Literature shows that cultural factors significantly influence nursing students' clinical learning experiences in Kenya and

other African countries and therefore might have influenced these results too [34] [40]. In Kenya, young people are naturally raised to respect authority and honor hierarchical structures, and this can impact students' ability to speak up about patient safety issues and their learning within the care settings they are exposed to [34] [40]. Also, the collectivist cultures typical of many Kenyan communities may affect professional socialization and adaptation to clinical environments [40].

Gender dynamics play a key role in how learning happens. Male and female students experience different barriers to effective clinical learning [7]. Kenya's society has evolved from a past where males received an upper hand in education; thus these may also have a hand in the findings herein. Similarly, social support, including mentoring and supervision, is crucial for culturally diverse nursing students' success [41] [42]. Gladly, Kenyan nursing systems are increasingly embracing mentorship approaches to ensure learners grasp skills excellently. This is a cultural factor too, because Kenyan communities are primarily closely knit and even skill acquisition happens in community settings. Finally, language barriers and heavy cultural expectations can interfere with professional responsibilities [43]. Improving clinical supervision, orientation, and creating welcoming environments are recommended to address the unique learning needs of culturally diverse nursing students [42] [43].

#### **4.2. Training Institution-Related Factors and Clinical Performance**

Training institution-related factors, such as supervision, feedback, and teaching methods, significantly influenced clinical performance [32] [44]. Inadequate supervision emerged as a critical barrier, consistent with research indicating that effective supervision is essential for bridging the gap between theory and practice [1] [13]. Without proper guidance, students often feel uncertain about applying their theoretical knowledge in real-world settings, limiting their ability to develop essential nursing competencies [45] [46]. Preceptors play a pivotal role in shaping student experiences, but the qualitative data revealed frustrations over inconsistent supervision and a lack of constructive feedback [47]. This finding aligns with studies emphasizing the need for active and supportive mentorship to enhance learning outcomes [32].

Feedback mechanisms were also found to be critically wanting, with many students reporting that preceptors focused solely on mistakes rather than providing balanced feedback. Effective feedback is essential for fostering reflection and continuous improvement, yet its absence can demoralize students and hinder their progress [48]. Constructive feedback not only helps students identify areas of improvement but also reinforces positive behaviors, fostering motivation and professional growth. Resource shortages further compounded the challenges faced by students, consistent with findings from LMICs, where inadequate infrastructure often limits the quality of clinical education [49]. The lack of simulation labs, sterile equipment, and other essential resources forced students to improvise, compromising both learning quality and safety. Resource constraints not only impede

skill development but also expose students to risks, underscoring the need for institutional investments in clinical training infrastructure [50] [51]. The findings highlight the systemic nature of these challenges, suggesting that addressing training institution-related factors requires a multi-faceted approach [52]. Improved supervision, regular feedback, and well-resourced learning environments are critical for ensuring that students receive the support they need to succeed in clinical settings [52].

### **4.3. Clinical Setting-Related Factors and Clinical Performance**

The present study's findings reveal significant deficiencies in clinical setting-related factors that fundamentally compromised nursing students' clinical performance and learning outcomes [53] [54]. Staff cooperation emerged as a critical determinant, with participants consistently reporting poor collaboration between clinical personnel and students, creating unwelcoming environments that inhibited active learning engagement [13] [55]. This finding corroborates established literature demonstrating that inadequate staff-student relationships create systematic barriers to clinical education effectiveness [7]. The observed disconnect between educational institutions and clinical sites represents a structural failure in clinical education delivery, where students experience reduced opportunities for skill acquisition due to their reluctance to engage with unsupportive clinical staff [56]. This phenomenon reflects broader institutional challenges in maintaining effective partnerships between academic and clinical settings, ultimately undermining the quality of nursing education and necessitating enhanced faculty-practice relationships and comprehensive orientation programs [53].

Resource inadequacy, particularly the shortage of personal protective equipment (PPE), constituted another significant barrier to optimal clinical performance and contributed to academic distress among nursing students [54]. The data revealed that insufficient PPE not only restricted students' participation in essential clinical procedures but also generated heightened anxiety levels that further compromised their learning capacity, reflecting the challenging and stressful nature of clinical education [53]. This finding assumes particular significance in light of global health crises, where PPE shortages have been documented to substantially impact healthcare training programs [13] [55]. The relationship between resource availability and student engagement demonstrates a clear correlation between material support and educational outcomes, with resource shortages creating inconsistencies between theoretical knowledge and practical application that adversely affect the clinical learning environment [13] [55].

The exposure to traumatic experiences without adequate institutional support emerged as a particularly concerning finding, with students reporting significant psychological distress from witnessing challenging clinical events that contributed to anxiety and depression [54]. This finding aligns with literature indicating that unprocessed traumatic exposure in clinical settings can precipitate long-term mental health complications, including anxiety disorders and professional burn-

out [57]. The absence of structured support mechanisms, including counseling services and systematic debriefing protocols, represents a critical gap in clinical education frameworks that fails to address the need for resilience training and supportive campus climate essential for student well-being [58]. These findings collectively indicate that clinical setting-related factors operate as interconnected systems that either facilitate or impede student learning, emphasizing the necessity for comprehensive institutional reforms incorporating effective communication strategies, coping mechanisms such as debriefing sessions, and family support systems to optimize clinical education outcomes and help students navigate their clinical placements successfully [56].

#### 4.4. Study Limitations

This study has several limitations that should be considered when interpreting the findings. First, the reliance on self-reported data introduces the potential for response bias, as participants may have provided socially desirable answers or inaccurately assessed their own clinical learning experiences. Additionally, the study's single-site design, conducted at Moi Teaching and Referral Hospital, limits the generalizability of the findings to other clinical settings or regions. The cross-sectional nature of the study further restricts the ability to draw conclusions about causality or changes over time. Finally, the modest  $R^2$  value of 12.5% indicates that while the identified factors explain a portion of the variance in clinical learning outcomes, other unexamined variables likely contribute to the complex nature of the learning process. These limitations suggest that further research with a more diverse sample and longitudinal design is needed to gain a deeper understanding of the factors influencing clinical learning among nursing students.

#### 5. Conclusion

This study highlights the multifaceted challenges affecting clinical learning among diploma nursing students. While student-related factors such as motivation and confidence positively influence performance, external barriers related to training institutions and clinical settings play a more significant role in shaping outcomes. Inadequate supervision, resource shortages, and poor collaboration emerged as critical barriers, underscoring the need for systemic reforms to create conducive learning environments.

#### 6. Recommendations

- 1) Supervision and Feedback:** Implementing structured supervision and mentorship programs to ensure consistent preceptor engagement and provide training on effective feedback delivery.
- 2) Resource Allocation:** Investing in well-equipped simulation labs, PPE, and other essential resources to enhance the quality of clinical training.
- 3) Collaboration:** Strengthening communication and coordination between educational institutions and clinical sites to improve cooperation and create sup-

portive environments.

**4) Student Support Programs:** Establishing initiatives to address student anxiety and resilience, providing psychological support and fostering adaptive coping mechanisms.

**5) Further Research:** Conducting longitudinal studies to explore the long-term impact of clinical learning experiences on student performance and professional development.

## Funding Information

The authors received no funding for this study.

## Conflicts of Interest

The authors declare that there are no conflicts of interest.

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