Nursing and midwifery students' experiences and perception of their clinical learning environment in Malawi: A mixed method study

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Research article

Keywords: Nursing and midwifery students, perceptions, experiences, clinical learning environment, CLEI tool.

Posted Date: May 27th, 2020

DOI: https://doi.org/10.21203/rs.2.21534/v2

Version of Record: A version of this preprint was published on September 14th, 2020. See the published version at https://doi.org/10.1186/s12912-020-00480-4.

Abstract

Background The clinical learning environment is an important part of the nursing and midwifery training as it helps students to integrate theory into clinical practice. However, not all clinical learning environments foster positive learning. The aim of this study was to assess the experiences and perception of the clinical learning environment by nursing and midwifery students of in Malawi.

Methods A mixed-methods approach was used to collect data from nursing and midwifery students. Quantitative data were collected using a Clinical Learning Environment Inventory, while focus group discussions were used to collect qualitative data. The interview guide had questions about clinical learning, supervision, assessment, communication and resources. The Clinical Learning Environment Inventory has six subscales of satisfaction, involvement, individualisation, innovation, task orientation and personalisation. Quantitative data were analysed by independent t-test and multivariate linear regression and qualitative data were thematically analysed.

Results A total of 126 participants completed the questionnaire and 30 students participated in the focus group discussions. Satisfaction subscale had the highest mean score (M = 26.93, SD = 4.82) while individualisation had the lowest mean score (M = 18.01, SD =3.50). Multiple linear regression analysis showed a statistically significant association between satisfaction with clinical learning environment and personalization (β = 0.50, p = < 0.001), and task orientation (β =0.16 p= < 0.05). Teaching and learning resources, hostile environment, poor relationship with a qualified staff, absence of clinical supervisors, and lack of resources were some of the challenges faced by students in their clinical learning environment.

Conclusion Although satisfaction with clinical learning environment had the highest scores, nursing and midwifery students encountered multifaceted challenges such as lack of resources, poor relationship with staff and a lack of support from clinical teachers that impacted negatively on their clinical learning experiences. Training institutions and hospitals need to work together to find a means of providing resources to students during clinical placement.

Background

The clinical learning environment for nursing and midwifery students affect their learning behaviours and attainment of clinical competence [1-3]. The clinical learning environment can enable students to bridge the theory-practice gap and obtain the critical skills necessary for clinical decision making [3]. Students spend approximately three times the amount of hours in clinical environments than the time spent in the classroom [4, 5]. According to Flott and Linden [6], the clinical learning environment includes four attribute characteristics that impact student learning: the physical space; psychosocial and interaction factors; organisational culture; and teaching and learning components.

The physical space encompasses the physical environment and resources that impact on students' learning [7] including equipment, facilities, learning tools and standard procedures [2]. While teaching

hospitals need to have good facilities, equipment, and learning tools to improve the clinical learning experience of nursing and midwifery students, many hospitals in Malawi and other sub-Saharan Africa countries lack such resources [8, 9]. The problem of the lack of equipment is not specific to Africa alone. Evidence from high-income countries shows that nursing students also face a similar challenge. For example, authors of a qualitative study conducted in Norway among undergraduate nursing students identified lack of equipment, and unfamiliar, old and outdated equipment as challenges faced by students related to the physical learning environment [2]. According to Haraldseid [2] the lack of resources forced students to improvise, which resulted in providing sub-optimal care to patients. The clinical learning environment, therefore, should be well resourced and organised to enhance acquisition of knowledge, skills and attitudes.

The psychosocial and interaction factors entail communication, behaviours and attitudes displayed by a qualified healthcare worker, clinical instructors and students that influence clinical learning [10]. Students have identified lack of clearly stipulated expectations in the clinical learning environment as one of the significant challenges that are faced during their clinical practicum [2]. Furthermore, the authors of a study conducted in Iran reported that clinical instructors created an environment of fear that resulted in students losing motivation to perform procedures in the ward [11]. Also, in the same study students reported that some clinical instructors were verbally abusive, which created a hostile environment that made it difficult to ask questions relevant to their clinical learning [11]. On the other hand, authors of another study conducted in Iran reported that avoiding yelling and use of harsh words to students in clinical areas enhanced students' learning experience [12]. Organisation culture is another important component of the clinical learning environment. It is related to the healthcare managers' perception of nursing education, organisational policies related to students scope of practice and emphasis on the provision of quality care to students [10, 13]. Nursing managers have the responsibility to guide and give adequate time to qualified nurses to support students [14]. The nursing managers need to promote a culture of learning and teaching through equipping staff with knowledge and skills to support students; staff to partner with students on a shift a, and allocating reasonable workload to qualified nurses to allow time to teach students [14].

The teaching and learning components involve the process and effectiveness of teaching, supervising and evaluating students in the clinical area by their clinical instructors. Literature shows that students acquire clinical competencies most effectively in the clinical environments where they participate in care provision and work alongside healthcare staff that support and encourage learning [15, 16]. The process of how the required competencies are acquired needs close monitoring to make sure that the clinical learning program fits the purpose. Nursing students are evaluated in clinical learning environments where skills and knowledge are applied to patient care [6]. Nonetheless, qualitative findings from two studies conducted in South Africa and Tanzania on nursing students experiences of clinical supervision during clinical placement, demonstrated that students lacked adequate clinical supervision because the clinical facilitators were not visiting or spent less amount of time at the facilities to supervise students [17, 18].

Like other resource-limited countries, Malawi has a critical shortage of nurses. For example, the current nurses to population ratio is 3.4 : 10,000 [19], which is a third of WHO's standard recommendation [19]. Nursing and midwifery institutions in Malawi have responded to the critical shortage of nursing by increasing the enrollment number of students. However, this has come at the cost of depleting the already limited resources in the teaching hospitals. Nurses in Malawi report lacking resources, feeling exhausted and failing to support students because of their high workloads [19]. Despite nurses in hospitals in Malawi feeling ill-equipped to support students adequately, little is understood about the experiences of the students' nurses and midwives on the quality of the clinical learning environment. Therefore, this study was undertaken to assess the quality of the clinical learning environment for nursing and midwifery students in Malawi. The specific research questions were: 1. What are the nursing students' experiences and perception of their clinical learning environment; 2. What are the psychosocial characteristics of the clinical learning environment that are associated with satisfaction with the clinical learning environment.

Methods

Study design

This study used a mixed-methods approach. Quantitative and qualitative data were collected concurrently, analysed separately, and the results were compared [20]. While the quantitative part of the study helped to establish the student nurses' levels of satisfaction with their clinical environment, on the other hand, the qualitative component provided a rich account of the students' experiences with their clinical learning environment. The design was chosen with the aim of validating the findings of one method with the findings of the other as a means of obtaining comprehensive and credible evidence of the research problem(Bryman, 2006; Creswell, 2007; O'Cathain, Murphy, & Nicholl, 2010). Creswell [21] refers to this validation of findings from the two methods as confirmation or corroboration. The comparison or integration of the findings is normally done in the discussion section of the study [21]. This design is recommended because it is efficient, as qualitative and quantitative data can be collected at the same time [21, 22].

Study sites, study population and recruitment criteria

Study participants were recruited from three nursing and midwifery institutions in the Northern part of Malawi. These were the only institutions in the region that were training generic Nursing and Midwifery students at the time of data collection. Participants were recruited in the study if they:1) were within their 2nd to the fourth year of study; 2) had a minimum of one clinical placement over the duration of their study, and 3) were from a nursing and midwifery institution from the Northern Region of Malawi. Nursing students in their first year of study were excluded because they had limited clinical experience. During the period of data collection for this study, students were in various hospitals in Malawi for their clinical placement.

Sampling

Conventional convenient sampling was used to recruit students to the study [23]. A total of 133 potential participants were approached to participate in the study. Of these, 126 students consented to participate in the survey representing a response rate of 94.7%. Seven students did not return the signed consent forms. Out of the 126 students, 30 students consented to take part in the focus group discussion. There were three focus groups, one from each of the three participating training institutions comprising of 10 students in each group.

Procedure

Survey

The research team representatives met the facilities' management to ask for permission and support to conduct the study at their hospitals. After obtaining the permission to conduct the study, potential participants were approached during break time or after their shift to brief them about the study. The participants were informed about the aims, outcomes, benefits, risks and procedure of the study. Research team member assured participants of their confidentiality, privacy, and rights to withdraw from the study at any point without any negative impact on their training. Research packages, including information sheet and consent, were then given to the students. A self-administered questionnaire was given to those who consented to participate in the study. The questionnaire took approximately 10 to 15 minutes to complete. Although researchers were given rooms within the hospitals to use for the project, students completed the questionnaires at their chosen place and time of comfort.

Focus group discussions

The procedure for collecting interview data followed the same process as in survey data collection. Two members of the research team conducted each focus group discussion. After consenting to participate in the study, one focus group discussion per hospital was conducted in a quiet room within the hospital premise. A focus group discussion guide was used to ensure that the topics around experiences and perception of clinical learning environments were discussed uniformly. All interviews were recorded, and each interviewing member recorded field notes which were discussed afterwards during routine project meetings. The interviews took between 45 to 80 minutes to complete.

Study measures

Survey questionnaire

Data was collected using a self-administered questionnaire, which had two sections; sociodemographic characteristics of participants and the clinical learning environment inventory (CLEI).

Sociodemographic characteristics of patients

The sociodemographic characteristics of the participant's section of the questionnaire collected information such as age, year of study, a programme of study, and duration of the clinical placement.

Clinical Learning Environment Inventory (CLEI)

A Clinical Learning Environment Inventory (CLEI) [24] was used to collect quantitative data. CLEI has two types of questionnaires: 'the actual form' and the 'preferred form'. The Actual Form is used to assess students' perception of the real clinical learning environment, while the 'Preferred form' is used to assess students' perception of the characteristics of the desired clinical learning environment. The Actual Form was used in our study. The questionnaire comprises of 42 items that are grouped into six subscales of seven items each. The subscales are: 1) Satisfaction- students enjoyment with the clinical placement; 2) Involvement- students involvement in hospital activities; 3) Individualisation- extent to which students are allowed to make decisions in the clinical area; 4) Innovation - clinical teacher innovative teaching strategies; 5) Task orientation - organisation and clarity of ward activities; and 6) Personalisation- students opportunities to interact with clinical teacher and concern for students welfare. The responses to each item are rated on the 4-point Likert scale: 1= Strongly agree, 2 = Agree, 3= Disagree, and 4= Strongly disagree. The scale has been validated and has good reliability (Cronbach's alpha =0.73-0.84) [24, 25]. The instrument has been previously used in Malawi and other developing countries. [26-28]. Higher scores after total summation indicate a high level of satisfaction with the clinical placement.

Focus group interview guide

A structured interview guide was used to collect qualitative data during the focus group interviews. The interview guide contained open-ended questions about students learning experiences, expectations, working relationships, teaching methods and challenges faced during the most recent clinical placement (see Appendix 1). The interview guide was developed by the research team guided by the review of the literature. Expert opinion was sought to validate the interview guide.

Pilot Study

The instruments for data collection were subjected to piloting with 10 nursing students from a nursing institution, which was not part of the study sites for our study. This was done to ensure that the instruments were applicable to Malawian socio-cultural setting. The piloted data was analysed and where necessary changes were made to some of the data collection tools for the main part of the study.

Data analysis

Quantitative data

Descriptive analysis was used to describe the general characteristics of participants. The mean scores of CLEI and its subscales were analysed by independent t-test and ANOVA, while multiple linear regression was conducted to assess the relationship between nursing students' satisfaction with the clinical learning environment and the psychosocial characteristics of CLEI. P-value was significant at 0.05. The Statistical Package for the Social Sciences (SPSS) version 23 was used to analyse the data.

Qualitative data

For qualitative data, all the focus group discussion were conducted in English because it is an official language in Malawi, and that students use English as their mode of communication during the entire nursing training. All the interviews were captured using a digital voice recorder, transcribed and checked for accuracy. Field notes were taken immediately following each focus group discussion. Braun and Clark's six phases of thematic analysis were used to analyse the data [29]. The six phases are data familiarisation, generation of initial codes and collating data according to the codes, searching for themes, reviewing themes, defining and naming themes, and producing a report. Two researchers independently read and the re-read the transcripts to identify the codes. The identified code were organised in a table. The research team verified the codes and grouped the codes according to their commonalities during their regular meetings. The group of codes were then assessed further by the research team to identify themes. The emerging themes were then named and identified as main or subthemes. Credibility and trustworthiness were ensured through piloting the interview guide, member checks of the transcribed data, and use of field notes.

Results

Survey

General characteristics of participants

Three-quarters of the participants were within the age group between 20-25 years old. The proportion of females was slightly higher than males (54% compared to 46%). More than three quarters of the participants were nurse-midwife technician students pursuing a college diploma in Nursing and Midwifery. More than half of the participants (57%) were in the third year of study (see Table 1).

Table 1: General characteristics of the study participants (N=126)

Variable	n (%)
Age	
≤20	4 (3)
20-25	96 (76)
≥25	26 (21)
Sex	
Female	68 (54)
Male	58 (46)
Program of study	
BSc Nursing & Midwifery	15 (12)
Nurse Midwife Technician	111 (88)
Year of study	
Second	39 (31)
Third	72 (57)
Fourth	14 (11)
Missing	1 (1)
Clinical placement	
Central hospital	44 (35)
District hospital	54 (43)
Others	25 (20)
Missing	3 (2)
Recent clinical Placement*	
Medical	10 (8)
Surgical	13 (10)
Labour and delivery	29 (23)
Postnatal	10 (8)
Antenatal	11 (9)
Paediatric	32 (25)
Family planning	3 (2)
Under 5 clinic	2 (2)
Theatre	7(6)
Missing	9 (7)
Length of current clinical placement	
<3weeks	14 (11)
3-8weeks	77 (61)
>8weeks	31 (25)
Missing	4 (3)

The scores among the participants ranged from 97 to 164 (Mean [M] 131, Standard deviation [SD] = 13.28). Satisfaction subscale had the highest mean score (M = 26.93, SD = 4.82), followed by Personalisation (M= 23.27, SD=4.02) while Individualisation had the lowest mean score (M = 18.01, SD =3.50) (see Table 2). There was no significant difference between the total score of subscales score with age, gender, students study program and students' institution.

We used Satisfaction subscale as the outcome measure, with the other subscales as explanatory variables. Students' satisfaction with the clinical learning environment was positively correlated with all the other subscales. Pearson correlation coefficient ranged from 0.20 (Individualisation subscale, p = < 0.05) to 0.54 (Personalisation subscale, p = < 0.001) See Table 3.

Table 2: Mean scores of Total and subscales of CLEI Actual form (N=126)

CLEI Scale	Mean ± SD	Range	Minimum	Maximum
CLEI total scale	131.29 ± 13.28	67	97	164
Satisfaction	26.93 ± 4.82	25	9	34
Personalization	23.27 ± 4.02	20	12	32
Student involvement	22.67 ± 3.04	22	12	34
Task orientation	21.73 ± 3.52	18	13	31
Innovation	18.68 ± 2.89	16	12	28
Individualization	18.01 ± 3.50	20	7	27

Table 3: Correlation between satisfaction subscale and other subscales of the CLEI Actual form

CLEI Subscales	R	p value
Personalization	0.54	0.000
Student involvement	0.23	0.005
Task orientation	0.30	0.000
Innovation	0.27	0.001
Individualization	0.20	0.014

Authors of clinical learning environment research who have used Fraser's social-psychological conceptual framework [30] have found a relationship between satisfaction subscale scale and other CLEI subscales [31-33]. We, therefore, conducted multiple linear regression analysis to assess the association between satisfaction with clinical learning as a dependent variable and other psychosocial characteristics of CLEI (subscales) as independent variables. The findings of the multivariate analysis showed statistically significant association between Satisfaction with clinical learning environment and Personalization (β = 0.50, p = < 0.001) and Task orientation (β =0.16 p= < 0.05). The two variables retained in the model explain 31% of the variability of the student satisfaction with their clinical learning environment (See Table 4).

Table 4: Multiple linear regression with Satisfaction as a dependent variable and other subscales of the Actual CLEI scale as independent variables

Independent variables	Beta (95% confidence interval)	p Value	R^2	F
Personalization	0.50 (0.41-0.78)	0.000	0.31	28.35
Task orientation	0.16 (0.12-0.43)	0.038		

Focus group discussion

Three focus groups were conducted with 30 nursing students (one focus group per training institution). Each focus group had 10 participants. Participants in the focus group discussion were conveniently drawn from those who responded to the survey questionnaire. Three main themes emerged for the data. These included: 1) Clinical teaching and supervision; 2) Working relationship and support; and 3) Teaching and learning resources.

Clinical teaching and supervision

There was a great discussion related to lack of clinical teaching and supervision among participants. This discussion mainly focused on the following areas 1) student accompaniment in the clinical area, 2) assessment and feedback, and 3) integration of theory into practice.

Student accompaniment in the clinical area

Students in this study indicated that they were left alone in the clinical area most of the times, without any guidance and supervision. Many participants in all the three focus groups reported that they wished

their lecturers and their clinical instructors accompanied them to the clinical area and stayed with them for the first week to orient them to the ward routines. One student reported:

"I think teachers must be around for a week or so when we are just beginning the clinical allocation to orient us. Let's say we are doing labour and delivery for 4 weeks, if they can come twice during the allocation that can be better than not coming at all".

Some students indicated that the presence of a clinical instructor or lecturer facilitated their learning as they were free to ask questions and learn different skills, which was not the case when they were with unfamiliar nurses in the ward. One student narrated:

"My expectation is that the lecturers should be visiting us frequently…. we are used to our lecturers and we feel free to ask them questions. In the ward, you are unsure of how the qualified staff will react to your question because you are new and unfamiliar."

Although many students preferred their lecturers to accompany them to the clinical areas, some students reported that in certain clinical placements, staff were adequately prepared and welcoming to students despite having a huge workload. This is illustrated in the following comment:

"Qualified staff working in the ward were willing to help us to learn through these conditions. But though trying, they had a lot of work to do but were committed to teach and help us with some problems."

While some students reported having support from the qualified nurses, there were others who experienced an unwelcoming and unattractive learning environment, where ward staff expected them to do the work of a qualified nurse in the ward.

"The qualified staff in the ward, most of the time think that if students are in the second, third or fourth year, they know everything, forgetting that we are not there to do their work but to learn….they just leave us to work unsupervised."

Students had expectations in the ward and one of them was that qualified nurses would supervise and give them feedback whenever they were doing any procedure on a patient. Some students reported that the District Health Officers and the District medical officers were helpful to them as they were teaching them how to manage patients of different conditions.

Clinical Assessment and feedback

There was also a big discussion around clinical assessment and feedback in the clinical area. Majority of students complained that clinical assessments were not done in time and feedback was not given to students sometimes. Some students gave accounts of delayed assessments as narrated by one participant:

You find that most of the clinical assessments that were supposed to be done in first year are carried over to the third year, which puts pressure on us as we would have to do so many clinical assessments within

a short period.

A few students complained that sometimes clinical assessments were not done until they finished their clinical placement.

Arrangements would be made to have the assessment at a different hospital where they would often be assessed on different things from what they had learnt in their initial clinical placement.

Integration of theory into practice

Students reported that it was difficult for them to integrate theory into practice in the clinical area because the majority of the qualified staff were using short cuts to perform procedures. Students stated that the only time they practised what they learnt in class was when their clinical supervisor was with them. This is illustrated in the following comments:

"It becomes a problem to integrate what we learnt in class and what we meet in the ward. During classes, we leant procedures comprehensively, but when we go to the clinical areas, we sort of cut corners unless the clinical supervisor is around'

Students narrated that the first weeks of their clinical placement, they tried to do what they learnt in class but with the passage of time, they also joined the qualified nurses in using shortcuts to perform procedures. Most of the students reported that huge workload was the reason behind qualified nurses' use of shortcuts during procedures in the clinical area. One student reported:

"When a lecturer is there, you do a comprehensive sort of history taking aligning with what you learnt in the class, but when you are with qualified nurses….. maybe its due to high workloads, they cut corners and you learn nothing."

Working relationship and support

Several students reported that their clinical experiences were negatively impacted by the poor relationship with some clinical staff. Students recalled some experiences when qualified clinical staff shouted at them in the presence of patients and fellow students. One student reported:

"When a student is wrong, the qualified nurse would shout at you in the presence of patients and in front of everyone else. It was making my day bad and contributed to not meeting your objectives because I was stressed up or pissed off, so it wasn't okay"

Students stated that they would have loved if qualified staff would politely correct them when they make mistakes during procedures. Moreover, some students narrated that as a result of qualified staff's poor communication skills, they were uncomfortable to perform procedures in the presence of clinical staff for fear of being shouted at if they make any mistake.

"Sometimes, it happens that you are doing a procedure in the ward and as a student, you may fail or not do it properly. You find that staff members criticise you you right there that you were not supposed to do that. This flattens my morale and we are not comfortable doing procedures with them. We would love to be criticised in private if there is a problem and not in the presence of all patients because they lose trust in you."

Additionally, while some students reported a good relationship with counterparts from other institutions, several students were not comfortable with having high numbers of nursing students from different institutions in the same ward, which resulted into fighting over patients as one student explained:

"In the ward, you can have students from Mzuzu University, Ekwendeni College of Nursing and, St Johns College of Nursing. All of you would want to pick and care for patients as your case studies for assessments. We end up fighting over patients instead of assisting them"

Teaching and learning resources

Many students reported a lack of an adequate number of qualified staff in the clinical area was affecting their clinical learning and experience. Many students explained that as a result of the shortage of staff in the ward, most of them found themselves working without supervision to cover the shortage in the ward rather than learning to gain clinical skills.; One student reported: **"***We have a shortage of resources….we are failing to achieve things because of lack of mentors in the clinical area"* Another student reported:

"I expect to have enough resources in each and every department and adequate staff…we have observed that they are trying to cover shortage with us students, they forget that students are there to learn"

Material resources

Apart from human resources, students also reported lacking resources to help them attain their clinical competencies. Students reported that they lacked clinical equipment and protective gear. One participant said: *"When it comes to real practice, you find that most of the equipment or accessories that you learned in class are not available in the ward.*"

Students reported that most of the procedure they learned in class were developed in Western Countries, and the challenge of implementing the procedures in the clinical area in Malawi was related to lack of equipment. As a result, students reported improvising, which affected the quality of their clinical learning.

"I said sometimes it is difficult because what you learn is from Western Countries and here in Malawi we do not have the resources in the ward, so we end up improvising, which is a challenge."

Discussion

The aim of this study was to assess nursing students' experiences and perception of their clinical learning environment and to establish psychosocial characteristics of CLEI that are associated with

satisfaction with the clinical learning environment. The results of the survey show that satisfaction followed by personalisation subscales had the highest mean scores, while innovation and individualisation had the lowest scores. In addition, scores on the satisfaction subscale were significantly higher in students who valued personalisation and task orientation. Regarding the qualitative findings, students reported that their clinical supervisors were most of the time not available to accompany or teach them in the clinical area. Assessments and feedback to students were also not done in time. Students also had difficulties in integrating theory into practice because of the lack of resources as well as qualified staff not following protocols when performing procedures. Majority of students reported that they wished healthcare workers communicated to them properly, but that was not the case, as most of the times they were shouted at for not doing procedures properly. Furthermore, lack of human and material resources affected students to achieve their clinical competencies.

This study has demonstrated that satisfaction of the clinical learning environment by the nursing students had the highest mean score. These findings are in agreement with results from a previous Australian study, where respondents demonstrated satisfaction with clinical placements [34]. Contrary to the findings of our study, authors of a Norwegian study found that personalisation sub-scale had the highest mean score [32]. In this study, students' satisfaction with the clinical learning environment was positively correlated with all the other subscales. This demonstrates that satisfaction with clinical learning environment is dependent on multiple factors. Moreover, personalisation and task involvement were the main subscales, which contributed to satisfaction with the clinical learning environment in multiple linear regression. Evidence shows that students enjoy their clinical placement if they have opportunities to interact with the clinical instructor and have their concerns for their welfare considered in the clinical practice [31]. Having proper support in the clinical setting is essential for students considering that the Malawi Nursing and Midwifery education standards mandate students to spend 60% in the clinical setting and 40% in theory [35].

Although the results of the survey showed that the majority of students were satisfied with their clinical learning environment. Most students in the focus groups were dissatisfied with the level of support in clinical teaching and supervision. They cited lack of proper guidance guidance and continuous supervision by lecturers and qualified members of staff. This divergent finding could be explained by the differences in the two methodologies used in this study. In qualitative, the participants were given freedom to explain and had an in-depth discussion, unlike the quantitative where the CLEI tool restricted participants to describe their feelings. The qualitative findings are similar to results reported in study by Castledine [36], in which, level of support student nurse/midwives received from clinical staff and teaching institutions was inadequate. Lack of support in clinical teaching and supervision affects students' learning experience in the clinical setting because students value familiarity, acceptance, trust, support, respect and recognition of their contribution to patient care in the clinical area [36]. Support from the lecturers and tutors during clinical practice helps to allay fears and anxieties, provide guidance and encouragement to acquire the requisite knowledge, skills and attitudes fit for practice which in turn helps the students to provide high-quality patient care. During the first clinical placement, students are very anxious due to unfamiliarity of caring for patients and fear of making mistakes.

Additionally, the study results have also demonstrated the challenges that students face in integrating theory into practice due to inadequate support from the lecturers and qualified members of staff, which in turn affects their clinical assessments. Evidence from the literature support this finding, which has also been of concern in nursing education for years [37]. Conflicting practices between the ideal nursing taught in the classroom and that of the clinical setting result in students being confused, stressed and anxious if they are not well taught and supervised [38, 39]. This, therefore, has implication for the academic institutions and teaching hospitals in Malawi to identify means and come up with better means of supporting students in the ward. The academic institution should consider allocating more clinical supervisory hours for lecturers. At the same time, the hospitals should promote professional integrity in qualified nurses to provide standard nursing care in alignment with institutional policies and guidelines and play as role models to students.

The results of our study also show that students were not happy with how the clinical assessments and feedback from the lecturers and qualified staff were conducted during clinical practice. Learning in clinical practice takes place if students understand the right and wrong actions. Clinical nurse educator's role is to enhance learning through the provision of learning opportunities, supporting, guiding and conducting fair and timely evaluations. This builds on the similar finding by Sharif & Masoumi [39], where nursing students felt unsatisfied with their clinical assessments and evaluations because they were done by nursing staff who were believed to lack knowledge and experience in assessments and feedback. Feedback helps the students to gain confidence by knowing their strengths and weaknesses in terms of progress [40]. Several studies have illustrated measures to try and close the theory-practice gap through reflection and problem based learning under the guidance and support of lecturers and clinical staff that help them to develop their critical thinking and problem-solving skills in clinical practice. Students, therefore, need to be adequately taught, supervised and encouraged to link theory learnt in class with the realities of nursing practice [41].

Results of this study also revealed that students experienced a negative working relationship with clinical staff. These results conquer with a study by Papastarouu and colleagues [31] who reported that the perceived barriers by students in practice settings where they anticipated hostility and difficulties communicating with staff. Good interpersonal relationship, communication and support between staff and students create a conducive environment which is essential for student learning in the clinical setting. Such behaviours reduce anxiety and foster socialisation process, confidence and self-esteem, thus promoting clinical learning [42].

Some students reported that they were doing routine tasks and sometimes non-nursing duties while others reported a variety of learning opportunities which facilitated their learning. These learning opportunities were compromised by workload and overcrowding of students. Heller and colleagues[43] suggested that students have to be given opportunities to practice different tasks to gain confidence, become perfect and learn from the mistakes. As much as this suggestion is ideal, the number of students in nursing colleges has increased such that the students are not given adequate opportunities to learn. The overcrowding of students in the clinical setting affects peer support which could lead to conflicts,

tension, competitions for opportunities and lack of fulfilment of some requisite competencies, which in turn compromise the care given to patients during clinical practice [44]. Teaching hospitals and nursing institutions should work together and devise plans and strategies that can allow a reasonable number of students to undertake their practicals at a specific period. This strategy could not only reduce congestion of students in the hospital but also provide more opportunities for skills development through comprehensive learning from both qualified nurses and their lecturers.

The study results revealed that both human and material resources were inadequate for the clinical learning experience of the nursing/midwifery students. Teaching and learning resources are critical in nursing and midwifery education. To provide high-quality nursing care to patients, student nurses need to learn theoretical knowledge as well as practical skills. Lack of both time and material resources to facilitate learning can lead to students feeling unsupported. Literature suggests that nurse educators are expected to accompany student nurses to the clinical area. Still, the shortage of academic staff confines them to classroom teaching depriving human resource for clinical teaching and supervision, thus compromises the level and quality of support needed for students [45]. Lack of guidance and supervision may lead to nursing students learning incorrect procedures, become incompetent and lose interest in the nursing profession as they feel frustrated [46].

Quinn [47] states that professional nurses are responsible for teaching, supervising, guiding, counselling, assessing and evaluating student nurses in the clinical area. The results of this study revealed that professional nurses in the clinical setting were busy with their administrative roles and that of patient care, unlike the teaching role of students. Similar results were reported by Troskie colleagues [48] where multidimensional roles of unit managers, especially staff shortages, caused patient care to take priority over clinical teaching of student nurses. The nurse-midwife institutions in partnership with the clinical practice facilities are responsible for preparation of student nurse-midwives to cope with the complexity and nature of clinical practice by ensuring that both human and material resources are available and adequate for the clinical learning experience of student nurses in order to become competent practitioners [49].

Limitations

This study was conducted in three training institutions in the Northern Malawi only. As such, it may not be representative of the experiences of all the nursing and midwifery students in Malawi. Also, the small sample size in this study may affect the generalizability of the findings. Our study only used the ‘Actual Form’ of CLEI to assess students’ perception of the real clinical learning environment, and not the ‘Preferred form’ to assess their perception of the characteristics of the desired clinical learning environment. This may be considered as one of the limitations of our study. A comparison of students’ perceived and preferred clinical learning environment would complement the explanation on the divergent of our mixed study finding (CLEI vs focus group). Therefore, the findings of the study should be interpreted with caution. Limitations of our study propose the need for conducting a larger study, using

both ‘Actual Form and Preferred Form’ of CLEI that can be generalised and give a more substantial direction.

Conclusion

The findings of this study show that although students described their clinical learning environment as satisfactory using CLEI, the focus discussion revealed that students had many challenges that impacted their clinical learning. Hostile environment, poor relationship with the qualified nurses, absence of lecturers and lack of resources were some of the factors that affected students’ clinical learning experience. The findings of this study, therefore, indicate that work to improve all aspects of the learning environment is needed. For example, training institutions need to have a clear plan of clinical supervision of students in the clinical area to ensure that a clinical supervisor is available to teach and assess students. Qualified staff also need training on how they can better support students in the clinical area despite their high workload. Hospitals and training institutions also need to plan for the availability of essential equipment in the clinical area to help students gain the required clinical skills. Despite the limitations highlighted in this study, complementing the CLEI tool with focus group discussion is a strength to this paper.

Abbreviations

ANOVA: Analysis of Variance

CLEI: Clinical Learning Environment Inventory

M: Mean

NHSRC: National Health Research Committee

SPSS: Statistical Package for the Social Sciences

SD: Standard Deviation

WHO: World Health Organisation

Declarations

Availability of Data and Materials

The data and all supporting materials used in our manuscript are freely available to any scientist wishing to use them without breaching.

Ethics approval and consent to participate

Ethical clearance to conduct the study was obtained from the Malawi National Health Research Committee (NHSRC). Permission was sought from all institutions where the study was conducted. All participants granted a written informed consent to participate in the study.

Consent for publication

Consent to publish was obtained from the National Sciences Research Committee (NHSRC) and the institutions where the students were learning.

Competing interest

No conflict of interest has been declared by the authors.

Funding

This research received funding from Norwegian Church Aid. Project number MWI-05/013.

The role of funders in this research was capacity building.

Author contribution

Proposal writing: BCM, FWK, MZ, AK & FL

Data collection: BCM, FWK, MZ, AK & FL

Data analysis: BCM, FWK, MZ, AK & FL

Manuscript writing: BCM, FWK, MZ & AK

Mentorship & supervision of the entire work: TB, BT, AK, & MS

All the authors contributed adequately towards the completion of this study. Their carrier background played important roles.

All authors have read and approved the manuscript

Acknowledgement

Sincere thanks goes to all the students who accepted to participate in the study. We also thank the authority of the institution where the participating students were learning for granting us access to students.

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Appendix 1

Appendix 1. Interview guide for focus group discussions with students

1. Describe the clinical learning experiences in the recent clinical setting that you have been?

2. What is your experience in integrating theory to practice during that clinical placement?
3. What are your expectations of learning in the clinical placements-

    - from teachers
    - from nurses
    - from environment
    - from clinical management

4. Describe teaching approaches used during your clinical placement.
5. Describe the working relationship in the clinical learning environment.
6. Explain how clinical environment is effectively meeting your objectives.
7. What challenges (if any) do you experience in the clinical placement?