Original Article

Evaluating Nursing Students' Satisfaction with Clinical Learning Environment: A Mixed Method Design

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Abstract

Background: Clinical learning experience is an essential component of nursing curriculum and important aspect of nursing education which ensure that knowledge, skills and competence acquired theoretically are integrated and applied into clinical practice. Assessing students' clinical learning environment is therefore vital towards ensuring effective learning experience within the clinical settings.

Objectives: This study examined nursing students' perception about clinical learning environment, evaluated satisfaction with the clinical learning environment and identified factors associated with satisfaction in a University Teaching Hospital, southwest Nigeria.

Methodology: Study employed sequential explanatory mixed method design; Chan's Actual Clinical Learning Environment Inventory (Chan, 1999) was adopted to examine students' satisfaction with clinical learning environment among 178 nursing students. Focus Group Discussion explored perception about clinical learning environment among 40 nursing students purposively selected. Independent t-test and logistic regression analysis examined influence of probable predictors of students' satisfaction, p<0.05 was significant, qualitative responses were analyzed thematically.

Results: Quantitative data from 175 nursing students revealed that the overall perception about clinical learning environment was similar across total scale of the clinical learning inventory. There was significantly higher mean score on tax orientation sub-scale (p=0.01), 62.3% of the nursing students were satisfied with clinical learning environment, 37.7% were dissatisfied. Perception about task orientation significantly influenced satisfaction with clinical learning environment (p=0.001), logistic regression analysis reveals no significant association between demographic characteristics and satisfaction with clinical learning environment, qualitative responses resulted into six main themes.

Conclusion: The overall perception about clinical learning environment among nursing students was similar across total scale of the Clinical learning Environment Inventory. Perception about task orientation significantly influenced satisfaction with clinical learning environment. Functional clinical setting should ensure well organized, clear, specific roles for students for effective learning activities.

Keywords: Nursing students; Satisfaction; Clinical Learning Environment; Nigeria

Introduction

Clinical learning placement is an essential component of health professionals' training including the nursing curriculum because the clinical learning experience enables clinical trainees and student to transform theoretical knowledge acquired in the course of study into effective clinical practices (Adam et al., 2021). Generally, Clinical Learning Environment (CLE) consists of all components of clinical setting that contribute to effective clinical experience of learners and students. Such learning environment include the clinical settings, patients, health professionals such as nurses, midwives, clinical instructors/preceptors, doctors, physiotherapists, infrastructure and equipment in the clinical areas, all of which provide insight into functioning and opportunities for effective learning and supervision of students (Papastavrou et al., 2016).

Regarding nursing education, clinical learning environment is described as learning atmosphere where nursing students apply theoretical knowledge acquired into clinical practice by conducting actual or simulated patients' care in order to acquire necessary skills and competence, attitude and decision making abilities required to achieve minimum expertice to practice (Flott & Linden, 2015). Such environment is characterized by educational and instructional atmosphere of the clinical environment, leadership style of the ward managers, the nursing atmosphere, the supervisory relationships between student nurses, clinical nursing staff, nurse educators, nurse instructors and preceptors (Rodriguez-garcia et al., 2021), providing essential and exceptional learning framework for different categories of nursing and midwifery students thereby contributing and facilitating the integration of theoretical knowledge from the classroom setting to clinical practices necessary for the actual life professional practices (Saifan et al., 2021).

Furthermore, a positively structured clinical learning environment is characterized by non-hierarchical learning milieu, team spirit, supportive, openness and respect for students,

learner-centered focusing on student learning needs rather than merely health care service delivery, allowing learners to be motivated, feel involved in clinical activities and fostering good inter-personal relationships with other team members; an atmosphere where nursing students are thought the foundational skills for clinical practices (Flott & Linden, 2015).

Additionally, a favourable clinical learning environment is characterized by individualization, innovation, involvement, personalization, task orientation and satisfactory to the learner and trainee which are essential domains of Chan's Clinical Learning Environment Inventory (CLEI) (6). In such an environment, students and learners can develop competence, self-confidence, good interpersonal communication and problem-solving skills, which are capable of enhancing satisfactory clinical rotation experience (Saifan et al., 2021).

The above features of effective learning environment is exemplified by Benner's 'Novice to Expert Framework for Nursing in which Benner opined that effective educational foundation enhances acquisition of behavioral, cognitive and social skills through learning experience (Benner, 1982). Benner built on the Dreyfus and Dreyfus model of skill acquisition to further develop the Novice to Expert Framework for Nursing and applied this to the nursing profession by outlining the five stages of clinical competency, namely: novice, advanced beginner, competent, proficient, and expert (Landers et al., 2020). Benner concluded that acquiring knowledge and skills in applied disciplines such as nursing and midwifery involved application of knowledge gained into clinical experience (Benner, 1982; Landers et al., 2020).

Overview of clinical learning experience for nursing education and training in Nigeria

Clinical learning experience is an essential component of nursing curriculum and important aspect of nursing education which ensure that knowledge, skills and competence acquired theoretically are integrated and applied into clinical practice (Phillips et al., 2019).

In Nigeria, the nursing education and training could be acquired either through university degree program or through schools of nursing and midwifery (diploma) program. Undertaking nursing education and training in the University or school of Nursing (diploma) program entails teaching and learning courses such as Foundation of Nursing, Human Anatomy, Physiology, Biochemistry, medical-Surgical Nursing and other related courses in addition to routine placements for clinical experience. Major obligatory specialties for clinical placement include medical unit, surgical unit, the maternity unit, mental health unit, primary health care (community health) unit, paediatrics and other sub-specialties.

In spite documented evidence demonstrating the importance of clinical learning environment to nursing and midwifery training, ineffective communication, inadequate readiness and inappropriate emotional responses among clinical staff are some of challenges confronting clinical learning environment and trainees' satisfaction which remain major source of anxiety and stress among nursing students globally (Jamshidi et al., 2016). These are in addition to inadequate teaching and learning support for nursing and midwifery students, theory-practice gap, poor interpersonal relationships between students and nursing staff in the ward have also been reported in many training institutions by Jamshidi et al. (Jamshidi et al., 2016).

Assessment of the clinical setting as learning environment and students' satisfaction have been considered global best practice and vital step towards ensuring effective and functional learning encounter in order to optimize learning activities within the clinical settings (Papastavrou et al., 2016). Studies have suggested that perceived learning satisfaction influences level of learners' participation and that a high level of satisfaction can motivate learners to learn effectively and optimize learning activities (Al-anazi et al., 2019). Students' learning satisfaction with learning environment could therefore be considered vital requisite towards improving learning involvements and could predict learning outcomes (Adam et al., 2021; Antohe et al., 2016; Atakro & Gross, 2016; Papastavrou et al., 2016; Rodriguez-garcia et al., 2021; Woo & Li, 2020). Consequently, studies have been undertaken to investigate nursing students' satisfaction with clinical learning environment in developed and developing countries (Adam et al., 2021; Antohe et al., 2016; Atakro & Gross, 2016; Papastavrou et al., 2016; Rodriguez-garcia et al., 2021; Woo & Li, 2020), a dearth of information however remain regarding perception and satisfaction of nursing students with clinical learning environment in this study area; hence this study aimed at examining nursing students' perception about clinical learning environment; evaluate students' perceived level of satisfaction with the clinical learning environment and identifying factors associated with nursing students' satisfaction with clinical learning environment in a University Teaching Hospital in southwest Nigeria. These were with a view to providing appropriate recommendations for effective and functional clinical learning environment for nursing and midwifery education in Nigeria.

Method

Study design: Study employed sequential explanatory mixed method design using quantitative and qualitative data collection methods.

Study Setting: Study was conducted among nursing students on clinical posting at the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, South-west Nigeria between August and September, 2022. The Obafemi Awolowo University Teaching Hospitals Complex was established in 1967 by the Federal Government of Nigeria one of the first generation Teaching Hospitals in the country to provide qualitative health care services to the sub region. The hospital priotizes integrated healthcare delivery system based on a pyramidal structure comprising primary care at the base while secondary and tertiary health care services are designed to enhance physical, mental and socio-economic wellbeing of Nigerians through preventive, promotive, diagnostic, restorative and rehabilitative services.

The Teaching Hospitals Complex has 6 main units for operational effectiveness namely: Ife hospital unit (IHU), Wesley Guild hospital, Ilesa, Dental centrer, Ile-Ife, Urban comprehensive health centrer, Eleyele, Ile-Ife, multipurpose health centrer, Ilesa and rural comprehensive health centrer, Imesi-Ile, all in southwestern region in Nigeria. Nursing students from School of Nursing training program and University undergraduates undertake routine clinical posting at the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife. This study was carried out at the Ife hospital unit of the teaching hospital.

Study participants: Nursing students undertaking clinical posting at the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun state, Southwest Nigeria.

Inclusion and exclusion criteria: Nursing students with minimum of 2 years clinical posting experience were included in this study while other categories of nursing students were excluded.

Variables

The primary outcome variables in this study was 'nursing students' perception about clinical learning environment' while the secondary outcome variable was 'satisfaction with clinical learning environment'. Independent variables included selected demographic characteristics of nursing students.

Sample size estimation: The sample size was calculated using the Cochrane formula for sample size estimation (Cochrane, 1977): $n=Z^2pq/d^2$, where n is the desired sample size, Z is the standard normal deviate at 95% confidence level (at 95% confidence level, Z=1.96), p=88.0%, being the level of satisfaction of nurses students about clinical learning environment (Neupane et al., 2018), q=1–p, q=1–0.88=0.12, d is the degree of accuracy, taken as 0.05. This resulted in n=162, with 10% non-response rate, estimated sample = 178.

Sampling technique for quantitative study: Eligible nursing students were selected through a two-stage sampling technique: Stage one involved purposive selection of Surgical, Medical, Paediatrics, Maternity and Mental Health units of the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Nigeria (these are the units where nursing students are deployed for clinical posting). In the second stage, nursing students in the selected units with minimum of 2 years clinical posting experience were purposively selected. Selection of eligible students continued daily until the estimated sample size was attained.

Research instrument for quantitative study: A self-administered questionnaire was employed for quantitative data collection. Section A of the questionnaire contain socio-demographic characteristics of the students, section B was adopted Chan's Actual Clinical Learning Environment Inventory, CLEI (5). Chan's CLEI is organized into 6 subscales or domains, each of the 6 domains contain 7 items giving a total of 42 items. Chan's CLEI domains are namely; personalization which connotes opportunities for an individual nursing student to interact with the clinician or assigned clinical supervisor with regards to the student's personal concerns and welfare; individualization which signifies the extent to which nursing students are allowed to take decisions in the clinical environment including how differently the students relate and are treated base on their ability or interest; innovation which assess the extent to which the clinician or clinical supervisor plans new and interesting clinical experiences, learning activities, teaching techniques, and job allocations in the clinical area; involvement which emphasizes the extent to which nursing students contribute actively in the clinical environment or ward; task orientation which refers to the extent to which clinical of ward activities are well organized; satisfaction which refers to the extent to which nursing students enjoy or are satisfied with the clinical placement. Each of the 42 items in Chan's CLEI are structured positively or negatively while responses are scored on a 5-point Likert scale.

Validity and reliability of quantitative instrument: This study adopted Chan's Actual Clinical Learning Environment Inventory, CLEI (Benner, 1982); a standardized instrument whose validity and reliability have

been established (Saifan et al., 2021), (Bjork et al., 2014), (Carlson & Idvall, 2014).

Quantitative data analysis and scoring: Qualitative data was processed and analyzed using IBM Statistical Product and Service Solutions (SPSS) software version 25. Analysis was done at univariate, bivariate and multivariate levels. P-value of less than 0.05 was considered significant.

Nursing students' perception about clinical learning environment was evaluated by summing up total score for the 42 items on the six sub-scales of Chan's CLEI. Options of the 5-point Likert scale on the positively structured items were scored 4 (Strongly agree), 3 (Agree), 2 (Disagree), 1 (Strongly disagree) respectively while the fifth option 'indifferent' was introduced in this study and was scored 'zero'. The negatively structured items were scored in the reverse order. The mean score was determined while independent t test statistic was employed to examine differences in mean scores among nursing students. Nursing students' satisfaction with clinical learning environment was evaluated by summing up total scores for the 7 items on the satisfaction sub-scale (5, 20). Total scores of the 'satisfaction domain' ranged between 0 and 28 points. Total scores 21 to 28 points were categorized as 'satisfied' while scores below 21 points were categorized as 'dissatisfied'. Binary Logistic regression analysis was employed to examine the association between nursing students' satisfaction and their demographic characteristics. Qualitative responses were analyzed thematically. Data were coded and categorized while significant themes were identified, interpreted and used to validate quantitative findings.

Sample size and sampling technique for qualitative study: Focus Group Discussion sessions were held among purposively selected nursing students with 2 years and 3 years clinical experiences respectively with each session of the FGD involving 8 discussants. FGD sessions continued until there was data saturation culminating into 4 sessions for each category of students.

Research instrument for qualitative study: Focus Group Discussion guide with 7 main items structured based on the six domains of the Chan's clinical learning inventory was used to collect qualitative responses. The FGD explored students' perception about clinical learning environment.

Qualitative rigor: To ensure rigor and trustworthiness of the qualitative aspect of this study, the following strategies were applied:

Credibility: Credibility is vital to ensuring that findings authentically represent participants' views and experiences. The following strategies were implemented to enhance credibility:

• Member Checking: After preliminary data collection, discussants were encouraged to review and validate key findings. Their feedback helped confirm that the interpretations accurately reflected their experiences and perspectives, ensuring the authenticity of the analysis.

• Adequate Engagement Time: Adequate time was spent engaging discussants to establish rapport and ensure a deep understanding of their perceptions about the clinical learning environment. This ensured thorough responses and provided rich context for the study.

• Peer Debriefing: Throughout the research process, regular meetings with research team members were held to discuss emerging themes and interpretations. This helped to ensure that the analysis remained grounded in participants' narratives

Transferability: Transferability of findings was ensured so that findings may be applicable to similar contexts. This was ensured as follows:

• Thick Description: A comprehensive account of the research context, participants' demographic characteristics, and the level of clinical training were taken into consideration during group discussions.

• Contextualization: Findings were framed within the specific educational and clinical training context of a teaching hospital setting.

Dependability: The following strategies were implemented to ensure that the study's procedures were well-documented and replicable:

- Clear Documentation: All procedures, including participant recruitment, group discussion protocols, data collection processes, and data analysis methods, were thoroughly documented.

- Research Diary: A research diary was maintained throughout the study to document observations, decisions, and reflections. This diary provided an audit trail that allows for a detailed review of the study's procedures, ensuring consistency and reliability in the research process.

- Inquiry Audit: All research team members and research peers reviewed the data collection and analysis methods to ensure that the study adhered to consistent and rigorous procedures. This audit process enhanced the dependability of the findings.

Confirmability: The following strategies were employed to enhance confirmability and reduce researcher bias:

- Audit Trail: A systematic coding process was employed to document how themes and categories emerged from the raw data. This audit trail ensured that team members can trace how the study's conclusions were derived, providing transparency in the research process.

- Reflexivity: Reflexive practices were maintained throughout the study, including the researcher's personal reflections on how background, assumptions, and experiences might influence the research process.

- Member Checking: Focus group discussants were asked to validate key interpretations of the data, ensuring that findings accurately reflect their perspectives rather than researchers' biases.

- Triangulation of Perspectives: Responses and interpretations were reviewed by research team members. This ensured that the findings were grounded in participants' responses and not influenced by the researcher's personal views.

Procedure for data collection: The aim of study was explained to the nursing students and informed consent to participate was obtained. Information regarding demographic characteristics of nursing students were obtained using relevant section of the questionnaire while perception about clinical learning environment was elicited using the Chan's Clinical Learning Environment Inventory.

Ethical Statement: Ethical clearance was obtained from Ethics and Research Committee of the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun state, Nigeria with ethical clearance number ERC/2022/06/14. Verbal and written consents were obtained from students prior to data collection and students were assured of confidentiality of responses, allowed to withdraw from the study at any time, without any adverse effect on their learning.

Results

Responses from 175 nursing students were considered in the final analysis giving a response rate of 98.3%. Quantitative findings showed that 29.2% of the nursing students were less than 20 years old, 65.1% were aged 20-29 years old, 5.7% were aged 30-39 years old while the mean age of the nursing students was 22 years ±4 SD. Finding also showed that 85.1% of the nursing students were females, 14.9% were males, 50.3% of the nursing students were University undergraduates, 49.7% attend school of nursing (Diploma in Nursing program), 51.4% had two years clinic learning experience while 48.6% had three years clinic learning experience (Table1).

Study also observed no significant difference in the overall perception of the clinical learning environment among nursing students as demonstrated by the mean scores on the total scale of the CLEI (Table2). Nursing students undertaking school of nursing (Diploma) training program however had significantly higher mean score (21.75) than University undergraduates (20.86) on the tax orientation sub-scale (p=0.01). There are no significant differences between the mean scores on the other subscales (Table3).

Study also revealed that 62.3% of the nursing students were satisfied with clinical learning environment while 37.7% were dissatisfied (Figure1).

Regarding factors associated with nursing students' satisfaction with clinical learning

environment, findings revealed that nursing students who were satisfied with clinical learning environment had significantly higher mean score (22.12) on tax orientation sub-scale than the mean score of nursing students who were dissatisfied with clinical learning environment (19.95), (p=0.001). There were no significant difference between nursing students' satisfaction with clinical learning environment and mean scores on other subscales of the CLEI (Table4).

Furthermore, bivariate analysis showed no significant association between selected demographic variables of nursing students and satisfaction with clinical learning environment (Table5).

Similarly, binary logistic regression analysis reveals no significant association between nursing students' satisfaction with clinical learning environment and demographic characteristics (Table6).

Analysis of qualitative responses identified six themes namely: perception about personalization within the clinical learning environment; perception about individualization; Innovation, involvement, task orientation and satisfaction.

In describing their experiences about clinical placement, discussants generally opined that the clinical experiences have enabled them to practicalise and transform theoretical knowledge into real life situations within the clinical setting. Below are responses on discussants' perception about clinical placement:

> '...clinical postings are avenues to learn, to gain clinical exposures, participate and demonstrate knowledge acquired about patients' care in the classrooms into real clinical settings. We have rotated through different wards within the hospital, learn how to relate with patients, senior nursing staff, colleagues ,doctors, health attendants and other health professionals in the hospital'. (a student with 3-year clinical experience)

Perception about personalization with the clinical learning environment

FGD participants were asked to express their thought about opportunities for individual nursing student to interact with the clinical supervisor/preceptor regarding student's welfare and personal concerns. Discussants opined that interaction between nursing students, patients and staff nurse depends on the attitude of students and the temperament of the staff nurse on duty. In expressing their opinion on the above theme, below are some excerpts:

> '....I think level of interaction between students, patients, staff nurses and other health workers in the ward depend on individuals. For example, in my own case, I have been able to carry out some procedures in the ward, use some equipment, relate well with patients, nursing staff and other members of the health team. (a nursing student with 3-year clinical experience).

Similar view was expressed by a discussant with 2-year clinical experience as stated below:

> '…We have been able to observe, participate, make suggestions on issues in the ward and our concerns and challenges taken into consideration in some cases on decision making within the ward while in other cases little or no considerations are given to students' convenience and comfort'.

Perception about individualization within the clinical learning environment

FGD discussants expressed divergent views about the extent to which they are allowed to take decisions in the clinical environment, how staff nurses and students relate within the clinical setting. In expressing their thought how students are allowed to take during clinical postings, a student with 3-year clinical experience retorted as follows:

> '...The senior nurses in the ward sometimes teach us what we don't know, monitor the assignments given to us, allow us to take decisions but must

do so under supervision, In fact, I enjoyed most part of the clinical postings'...

A discussant with 2-year clinical experience however expressed a divergent view as follows:

'...the staff nurse in one of our clinical posting was very friendly gave extensive orientation for us about the ward, answered our questions and made us comfortable. The situation was different in our next posting where the nurse on duty was somehow hostile with little or no opportunity to ask and clarify issues. I like to describe the clinical environment as too official.

Perception about Innovation within the clinical environment

Regarding the extent to which the clinician or clinical supervisor plans new, interesting clinical experiences, encourage learning activities, teaching techniques and job allocations in the clinical area, discussants also expressed divergent thought about their experiences on how senior staff nurses encourages students to participate in ward activities.

'...the situation depends on which ward and the staff nurses on duty. For example, during preparation for ward round in one of the wards, the senior staff nurse on duty delegates activities for students, encourages us to participate actively, ask questions and clarify issues. We were always encouraged to undertake assigned roles diligently as much as possible where as in some other wards the senior nurses do not tolerate laziness and lateness to work which some students are in the habit of doing'. (a student with 2-year clinical experience).

'...I have a different experience in different wards. In some ward, the staff nurse usually abuse the students, are mostly inpatient, abuse the student in front of the patient, when students make

mistake. I think the staff nurses should be more patient with students and be ready to teach because students are the ward to learn. Sometimes, students are left without being given any attention or be taught, only to be assigned duties. Sometimes, students' roster in the wards are altered or changed without prior the student's prior notification especially on weekends'...

Perception about students' involvement in clinical   activities

FGD discussants were encouraged to express their thought about the extent to which nursing students contribute in the clinical environment or ward. Responses showed that most students are often given responsibilities to undertake in the ward for which they are often supervised. Below are excerpts reflecting students' opinion:

'... There are several jobs available in the ward especially now that there are staff shortages in the wards such that little times are available to teach or to ask questions from staff nurses'... (a student with 2-year clinical experience)

Perception about task orientation

Students were asked to express their opinion on the extent to which ward activities are well planned and well organized, specific roles given to students and opportunity available to undertake responsibilities. Discussants opined that most clinical areas are organized but lack some basic functioning equipment which usually affect the effectiveness of nursing staff while the extent to which student nurses are allowed to undertake procedures sometimes depends on number of staff nurses on duty, the work load and state of health of patients. A student with 3-year clinical experience retorted as follows:

'…The extent to which students undertake responsibilities depends on the types of wards, types of procedure, the number of staff nurses on duty and the enthusiasm of the student. In some wards, students are assigned duties

with little or no supervision especially in wards where there are no enough staff nurses. Care of very sick patients may not be entrusted into the care of students while use of ventilators or taking vital signs of very sick patients are reserved for staff nurses'… (a student with 3-year clinical experience)

Perception about satisfaction with clinical learning environment

Discussants were asked to express their views on their satisfaction with the extent to which nursing students enjoy or are satisfied with the clinical placement. Discussants generally described satisfaction as average while willingness to learn, availability of necessary equipment required for patients' care, attitude of student and staff determine satisfaction with the clinical environment. In supporting the above submission, below are some excerpts:

> *'...lack of necessary equipment such as sphygmomanometer, suctioning machines and so on in some of the wards make patients care difficult. This is in addition to shortage of staff nurses in most wards which increases work*

load in the ward. A diligent student, willing to learn and able to have access to necessary equipment will enjoy the clinical posting'... (a student nurse with 3-year clinical experience)

FGD discussants were asked to give suggestions on how the clinical environment could be more satisfactory. Discussants generally suggested improved interactions between the different health professionals such as doctors, nurses and other health workers in order to improve service delivery in the hospital. Below are some of the suggestion:

> *'...I think there should be better interaction between all health professionals such as doctors and nurses and every other members of the health team. Nurses should be professional and guided by ethical conduct while on duty. Correction of student should be done politely while more equipment should be provided in the wards. Students should be given specific roles and good performance should be appreciated'*... (a student with 3 year clinical experience).

Table1: Demographic Characteristics of Nursing Students N=175

Variables	Frequency	%
Age at last birthday (years)		
Mean= 22 ±4		
Less than 20	51	29.2
20-29	114	65.1
30-39	10	5.7
Sex		
Male	26	14.9
Female	149	85.1
Marital status		
Married	24	13.7
Single	151	86.3
Current clinical learning placement		

Medical-Surgical section	96	54.9
Maternity	44	25.1
Mental health	13	7.4
Primary health care	22	12.6
Mode of study/training		
School of Nursing (Diploma) training	87	49.7
University undergraduate training	88	50.3
Year of clinical experience		
Two years	90	51.4
Three years	85	48.6

Table 2: Mean scores of Clinical Learning Environment Inventory by years of Clinical Experience

N=175

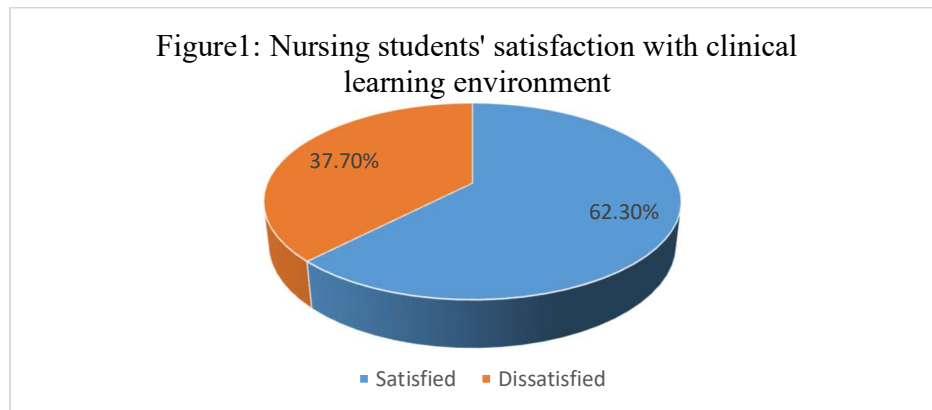| Clinical Learning Environment Inventory domains	All nursing students Mean (SE)	Nursing students with 2 years clinical experience Mean (SE)	Nursing students with 3 years clinical experience Mean (SE)	P value
Total CLEI scale	119.53 (0.61)	119.01 (0.75)	120.07 (0.97)	0.38
Individualization	17.84 (0.15)	17.64 (0.19)	18.05 (0.24)	0.18
Innovation	18.97 (0.17)	19.11 (0.23)	18.82 (0.26)	0.40
Involvement	18.97 (0.17)	19.11 (0.23)	18.82 (0.26)	0.40
Personalization	19.68 (0.18)	19.61 (0.27)	19.75 (0.25)	0.70
Task orientation	21.30 (0.17)	21.06 (0.21)	21.56 (0.26)	0.13
Satisfaction	21.45 (0.19)	21.39 (0.29)	21.52 (0.25)	0.74

SE = standard error of the mean, P represent p value of independent t-test for mean scores between nursing students with 2 and 3 years clinical experience.

Table 3: Mean Scores of Clinical Learning Environment Inventory by Mode of Study/Training

N=175

Clinical Learning Environment Inventory domains	All nursing students Mean (SE)	Nursing students in School of Nursing (Diploma) training Mean (SE)	Nursing students in University undergraduate training Mean (SE)	P value
Total CLEI scale	119.53 (0.61)	120.37 (0.88)	118.69 (0.83)	0.17
Individualization	17.84 (0.15)	17.98 (0.22)	17.70 (0.21)	0.37
Innovation	18.97 (0.17)	19.08 (0.24)	18.86 (0.24)	0.53
Involvement	18.97 (0.17)	19.08(0.24)	18.86 (0.24)	0.53

Personalization	19.68 (0.18)	19.74 (0.28)	19.63 (0.24)	0.76
Task orientation	21.30 (0.17)	21.75 (0.24)	20.86 (0.23)	0.01
Satisfaction	21.45 (0.19)	21.39 (0.27)	21.51 (0.27)	0.75

SE = standard error of the mean, P represent p value of independent t-test for mean scores between diploma nursing students and university undergraduates

Figure1: Nursing students' satisfaction with clinical learning environment

Table4: Nursing Students' Satisfaction and mean scores of other Clinical Learning Environment Inventory Sub-scales

	Satisfaction with CLE		
Clinical Learning Environment Inventory Domains	**Satisfied** Mean score (SE)	**Dissatisfied** Mean score (SE)	**P value**
Individualization	17.96 (0.19)	17.64 (0.25)	0.30
Innovation Mean	19.17 (0.20)	18.64 (0.31)	0.13
Involvement Mean	19.17 (0.20)	18.64 (0.31)	0.14
Personalization Mean	19.83 (0.21)	19.44 (0.33)	0.31
Tax orientation Mean	22.12 (0.17)	19.95 (0.28)	0.001

CLE= Clinical learning environment, P= p value for independent t- test, SE= Standard error of the mean

Table5: Bivariate Analysis of Nursing Students' Demographic Characteristics and Satisfaction with Clinical Learning Environment

	Satisfaction					
Variables	**Satisfied** n (%)	**Dissatisfied** n (%)	**Total** n (%)	**Statistic** χ^2	**df**	**p**
Age at last birthday (years)				2.75	2	0.25

Less than 20	27 (52.9)	24 (47.1)	51 (100.0)			
20-29	75 (65.8)	39 (34.2)	114 (100.0)			
30-39	7 (70.0)	3 (30.0)	10 (100.0)			
Sex				1.96	1	0.16
Male	13 (50.0)	13 (50.0)	26 (100.0)			
Female	96 (64.4)	53 (35.6)	149 (100.0)			
Clinical learning placement				2.14	3	0.55
Medical-Surgical section	59 (61.5)	37 (38.5)	96 (100.0)			
Maternity	30 (68.2)	14 (31.8)	44 (100.0)			
Mental health	6 (46.2)	7 (53.8)	13 (100.0)			
Primary health care	14 (63.6)	8 (36.4)	22 (100.0)			
Mode of study/training				0.003	1	0.95
School of Nursing (Diploma) training	54 (62.1)	33 37.9)	87 (100.0)			
University undergraduate training	55 (62.5)	33 (37.5)	88 (100.0)			
Year of clinical experience				0.41	1	0.52
Two years	54 (60.0)	36 (40.0)	90 (100.0)			
Three years	55 (64.7)	30 (35.3)	85 (100.0)			

Table 6: Binary Logistic Regression Analysis of Nursing Students' Demographic Characteristics and Satisfaction with Clinical Learning Environment

Variables	P value	Odd ratio (OR)	Confidence interval (CI)
Age at last birthday (years)			
Less than 20	0.27	2.47	0.51-12.02
20-29	0.68	1.37	0.31-5.99
30-39	RC		
Sex			
Male	0.21	1.77	0.73-4.26
Female	RC		
Clinical learning placement			
Medical-Surgical section	0.47	0.53	0.10-2.93

Maternity	0.30	0.51	0.14-1.84
Mental health	0.35	1.97	0.47-8.19
Primary health care	RC		
Mode of study/training			
School of Nursing (Diploma) training	0.35	1.44	0.67-3.09
University undergraduate training	RC		
Year of clinical experience			
Two years	0.73	1.29	0.30-5.58
Three years	RC		

Discussion

Finding showed that that majority (85.1%) of the nursing students studied were females while 14.9% were males; the proportion of female to male nursing students observed in this study could be considered a reflection of the preponderance of females among the nursing professionals. This assertion corroborates findings by similar studies on nursing students' clinical learning experience which observed higher ratio of females to male among students enrolled for nursing training programs (Adam et al., 2021; D'Souza et al., 2015; Ekstedt et al., 2019).

This study also found that the overall perception about clinical learning environment among the nursing students was similar across total scale of the CLEI as demonstrated by mean scores. There was however significantly higher mean score among nursing students in school of nursing on the tax orientation sub-scale. Responses from FGD discussants revealed that discussants generally opined that the clinical experiences enabled them to transform theoretical knowledge into real life situations within the clinical setting. Discussants opined those opportunities for individual student to interact with the clinical supervisor/preceptor regarding student's welfare and personal concerns depends on the attitude of students and the temperament of the staff nurse in charge of the ward. Divergent views were however

expressed about the extent to which students are allowed to take decisions in the clinical environment, how staff nurses and students relate within the clinical setting and how senior staff nurses encourages students to participate in ward activities. In a study to evaluate nursing students' perceptions about clinical learning environment, Bjork et al. observed that there was no significant difference in the overall perception of the clinical learning environment total scale among groups of nursing students studied in Norway (Bjork et al., 2014). Bjork et al. also observed significantly higher scores on the subscale individualization among nursing students posted to mental health unit (Bjork et al., 2014). In a similar manner, Carlson and Idvall (Carlson & Idvall, 2014) employed the Swedish version of the CLES to assess nursing students' experiences about clinical learning environment in nursing homes in Sweden and observed positive perception about clinical learning environment.

This study also observed that majority (62.3%) of the nursing students were satisfied with clinical learning environment while more than a third (37.7%) were dissatisfied. FGD discussants generally described satisfaction about clinical learning environment as average while willingness to learn, availability of necessary equipment required for patients' care, attitude of student and staff determine satisfaction with the clinical environment. A

study conducted on nursing students' satisfaction with clinical rotation experience observed that students' satisfaction with clinical learning environment was 63.5% (Adam et al., 2021). Similarly, Woo & Li in their study to evaluate nursing students' views and satisfaction of their clinical learning environment in Singapore observed that majority of nursing students studied through an online survey reported moderate satisfaction with their clinical learning environment (Woo & Li, 2020). Similar studies conducted among nursing students in Cyprus and Spain found that nursing students in Cyprus and Spain respectively were very satisfied with the clinical learning environment (Papastavrou et al., 2016; Rodriguez-garcia et al., 2021). Perceived learning satisfaction influences levels of learning participation and achievements while that a high level of satisfaction can motivate learners to continue learning engagements and optimize learning activities (Enyan et al., 2021). Students' learning satisfaction could therefore be considered vital in improving student's learning involvements and could predict learning outcomes.

A statistically significant association between satisfaction with clinical learning environment and task orientation subscale was observed in this study while no significant difference was observed between nursing students' satisfaction with clinical learning environment and mean scores on other subscales of the CLEI. This observation was comparable with the result of a study conducted by Lovecchio et al. (Lovecchio et al., 2015) who observed that individualization and task orientation significantly influenced nursing students' satisfaction with clinical learning environment. Woo & Li. in their study among nursing students in Singapore further found positive correlation between satisfaction with clinical learning environment and the other five CLEI subscales (Woo & Li, 2020).

Further analysis at bivariate and binary logistic regression analysis of data in this study however reveals no significant association between nursing students' satisfaction with clinical learning environment and demographic characteristics. Bjork et al. observed no significant association between demographic variables of nursing students and CLEI subscales (Bjork et al., 2014).

Conclusion: The overall perception about clinical learning environment among the nursing students was similar across the total scale of the Clinical learning Environment Inventory. Significant proportion of the nursing students were satisfied with clinical learning environment while students' perception about task orientation significantly influenced satisfaction with clinical learning environment. Functional clinical setting as a learning environment should ensure well organized, clear and specific roles for students in order to optimize effective learning activities.

Strength and Limitation of Study: This study was conducted among nursing students on clinical placement in a teaching hospital in southwest Nigeria. Generalizability of study findings may be limited due to relatively small sample size.

Despite the above limitation, finding from this study provides empirical data on the influence of a well-planned and organized clinical setting on students' satisfaction with their clinical learning environment.

Implication of Findings for Nursing Education and Practices: Assessment of the clinical setting as learning environment is a vital step towards ensuring effective and functional learning encounter in order to optimize learning activities within the clinical settings. Findings from this study observed a relationship between satisfaction and students' perception about actual clinical learning setting. Providing quality clinical learning environments for nursing students is critical towards fostering excellent professional nursing practices, quality and effective health care service delivery.

Suggestion for Future Studies: Further studies on determinants of students' satisfaction with clinical learning environment using larger and nationally representative sample size would be a desired future plan.

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