



Research Article

Determinants of Clinical Learning Environment: Evidence from BScN Students in Selected Public Universities in Kenya

Murei Sally^{1,*} , Mosol Priscah² , Osotsi Franklin³

¹Department of Community Health Nursing, Moi University, Eldoret, Kenya

²Department of Nursing Education, Leadership Management and Research, Moi University, Eldoret, Kenya

³Department of Family Medicine, Community Health and Medical Education, Moi University, Eldoret, Kenya

Abstract

Background: A constructive clinical learning environment (CLE) with a focus on student learning needs is vital for nursing education. Understanding the features of a healthy CLE for under graduate nursing students continues to be a challenge for healthcare organizations and educators in application of theory to practice. **Objective:** The objective of the study was to investigate the determinants of the clinical learning environment as perceived by BScN students in selected public universities in Kenya **Methods:** A descriptive quantitative cross-sectional design was employed where data was collected from consenting participants from two selected public universities in Kenya, using a pre-tested modified clinical learning environment inventory tool. The target population comprised of 125 fourth-year Bachelor of Science nursing students. The census technique will be used in this study. Quantitative data will be analyzed using SPSS version 27 for frequencies mean and percentages then presented using tables, charts, and graphs **Results:** The findings indicate that ward leadership style had a significant influence on clinical learning environment ($F = 9.09$; $t = 3.63$; $p = 0.000 < 0.05$), ward culture had an influence on the clinical learning environment ($F = 8.46$; $t = 10.76$; $p = 0.000 < 0.05$) and supervisory relationship influenced clinical learning environment ($F = 1.13$; $t = 1.98$; $p = 0.020 < 0.05$) **Conclusions:** Ward leadership style, positive ward culture and supervisory relationships can foster a supportive clinical learning environment **Recommendations:** Strengthening leadership support for students while creating a supportive learning environment that promotes and maintain a collaborative learning culture is needed.

Keywords

Clinical Learning Environment, Nursing Students, Application of Theory to Practice

*Correspondence: Murei Sally (smurei2001@gmail.com)

Received: 20 July 2026; **Accepted:** 3 August 2026; **Published:** 20 August 2026



1. Introduction and Background

The clinical learning environment (CLE) is widely recognized as a cornerstone of nursing education, shaping the professional identity, competence, and confidence of undergraduate nursing students [1]. Within Bachelor of Science in Nursing (BScN) programs, clinical placements provide opportunities for learners to integrate theoretical knowledge with practical skills, while simultaneously navigating complex interpersonal, organizational, and cultural dynamics [2]. A supportive CLE has been linked to enhanced student satisfaction, improved clinical performance, and stronger retention in nursing programs, whereas environments perceived as unsupportive may hinder learning, foster anxiety, and compromise professional development [3]. Understanding of organizational determinants of the CLE is therefore critical for educators, policymakers, and healthcare institutions seeking to strengthen nursing education and workforce readiness.

2. Objectives

The objective of the study was to investigate the organizational determinants of the clinical learning environment as perceived by BScN students in selected public universities in Kenya.

3. Methods

A descriptive cross-sectional survey design was adopted to select two study settings namely Moi University and University of Nairobi. These are two premier teaching and referral hospitals in Kenya. These national referral hospitals serve as a primary clinical training site for nursing and medical studies. The study was conducted among fourth year students in Moi University at Moi Teaching and Referral Hospital (MTRH) in Eldoret and University of Nairobi at Kenyatta National Hospital who met the established eligibility criteria. The target population included a total of 125 students. Given that the unit of analysis for this study is relatively small, census technique was used to select all the students who were placed at MTRH and Kenyatta National Hospitals respectively for clinical placement. The CLES+T instrument consists of 34 items categorized into five domains: Role of the nurse teacher, Supervisory relationship, Pedagogical atmosphere at the ward, Leadership style of the ward manager, and Premises of nursing on the ward. The overall scale and each subscale's reliability were assessed using Cronbach's alpha coefficients. Paper-based question-

naires were administered. Trained research assistants distributed the CLES+T instrument in the classroom, read standardized instructions aloud, and answered procedural queries without prompting or otherwise influencing responses. Statistical analyses were performed in IBM SPSS Statistics version 26. Statistical significance was set at $\alpha < 0.05$. Sample characteristics were summarised using frequencies and percentages for categorical variables and means with standard deviations for continuous variables. Prior to inferential testing, continuous variables were inspected for normality using visual methods (histograms, Q-Q plots) and the Shapiro-Wilk test; homogeneity of variances was assessed with Levene's test. Bivariate analyses examined associations between the clinical-education perception scores and participant characteristics. Independent t-tests compared mean scores between two groups; one-way ANOVA compared means across more than two groups. Pearson's correlation assessed relationships between continuous variables. Associations between categorical variables were evaluated using the Chi-square test of independence; when expected cell counts were < 5 , Fisher's exact test was applied. Effect sizes (eta-squared) accompanied p-values to aid interpretation.

Ethical approval was obtained from the MTRH/MU-ISERC (Moi Teaching and Referral Hospital / Moi University Institutional Scientific and Ethical Review Committee) and the KNH-UoN Ethics and Research Committee (Kenyatta National Hospital / University of Nairobi Ethics and Research Committee). A research license was obtained from the National Commission for Science, Technology, and Innovation (NACOSTI).

4. Results

Findings from the study indicated that, of the 100 participants, (51.6%, $n = 47$) were female and (48.4% $n = 44$) were male. The mean age was 23.1 years, with the largest proportion of students aged 23-24 years (52.8%). Participants were drawn from the University of Nairobi (57.1%, $n = 51$) and Moi University (42.9%, $n = 39$).

4.1. Association Between Gender and Organizational Factors

One-way analysis of variance was conducted on three organizational factors ward leadership style, ward culture, and supervisory relationship at two institutions as presented in Table 2. The results imply that male and female respondents perceive the cultural climate of clinical wards differently.

Table 1. Association between Gender and Organizational Factors.

Institution	Gender	Mean	SD	F	Sig.
UON	Ward Leadership Style	4.36	0.91	.574	.452
	Ward Culture	4.29	.848	7.856	.007
	Supervisory Relationship	4.33	1.324	1.267	.266
MU	Ward Leadership Style	3.56	1.24	.006	.939
	Ward Culture	4.05	.826	5.176	.029
	Supervisory Relationship	1.95	1.761	.969	.331

4.2. Association Between Age and Organizational Factors Affecting Clinical Learning Environment

Results of the One-way ANOVA examining the association

between age and three organizational factors ward leadership style, ward culture, and supervisory relationship at two institutions are presented in Table 2. The ANOVA results indicate that, in this sample, age was not associated with differences in perceptions of ward leadership style, ward culture, or supervisory relationship at either institution.

Table 2. Association between Age and Organizational Factors affecting Clinical Learning Environment.

Institution	Age	Mean	SD	F	Sig.
UON	Ward Leadership Style	4.36	0.91	.161	.690
	Ward Culture	4.29	.848	1.163	.286
	Supervisory Relationship	4.33	1.324	.860	.358
MU	Ward Leadership Style	3.56	1.24	1.638	.199
	Ward Culture	4.05	.826	.449	.720
	Supervisory Relationship	1.95	0.761	1.138	.348

4.3. Multivariate Analysis

Differences in mean scores between the two independent groups were examined using independent samples t-tests to determine whether the observed variations were statistically significant. Levene's test indicated heterogeneity of variance for ward leadership style ($F = 9.099, p = .003$) and ward culture ($F = 8.465, p = .005$), whereas variance was homogeneous for supervisory relationship ($F = 1.138, p = .289$). A statistically significant gender difference was observed in perceptions of ward leadership style, $t(89) = 3.63, p < .001$. Students in one gender group reported more favourable leadership experiences, with a mean difference of 0.46 (95% CI [0.21, 0.71]).

Gender differences were even more pronounced forward culture. The t-test yielded a large and highly significant effect, $t(89) = 10.76, p < .001$, with a mean difference of 1.19 (95% CI [0.97, 1.41]). As shown in the table, " $t = 10.764 \dots$ Mean

Difference = 1.18803", indicating a substantial divergence in how students appraise the psychosocial climate, teamwork, and inclusiveness of the ward environment. The magnitude of this difference points to a strongly gendered experience of ward culture.

5. Discussion

Findings from this study were consistent with [1, 3], which reaffirm that the CLE is a multidimensional construct influenced by leadership practices, ward culture, supervisory relationships, and placement context with a strong positive correlations observed between clinical learning experiences and each organizational factor dynamics in shaping students' perceptions of learning quality. These results further align with [4-6], who similarly reported that supportive leadership, cohe-

sive ward culture, and effective supervision significantly enhance students' intention to remain in the nursing profession.

A key contribution of this study is the identification of gender-based differences in perceptions of the CLE. Independent samples *t*-tests revealed statistically significant gender differences in ward leadership style and ward culture, with male and female students experiencing these domains differently. These findings resonate with emerging evidence that gendered norms and expectations influence how nursing students interpret communication, teamwork, and leadership behaviours in clinical settings [7-9]. In predominantly female nursing environments, male students often report weaker integration and reduced belongingness, which may explain the pronounced gender differences observed in ward culture at both institutions.

Supervisory relationships also differed significantly by gender, although the effect size was smaller. This aligns with [10], who found that supervisory support and feedback are not always experienced as gender-neutral, with male students sometimes reporting less relational engagement from supervisors [11-13]. These findings highlight the need for gender-responsive supervisory training that promotes equitable support for all learners [14]. Study findings imply that clinical educators and ward managers should receive training on inclusive communication, equitable delegation, and awareness of gendered dynamics that may influence student belongingness [15]. Structured mentorship programs that intentionally support both male and female students could help mitigate disparities in integration and psychosocial comfort within clinical teams.

6. Conclusion

Ward leadership style, ward culture, and supervisory relationships are strongly associated with students' clinical learning experiences, highlighting the need for organizational strategies that promote supportive, inclusive, and pedagogically oriented clinical settings. Gender emerged as a significant factor influencing perceptions of leadership, culture, and supervision, underscoring the importance of gender-responsive approaches in clinical education. Placement context also contributed meaningfully to variations in the CLE, suggesting that unit-level differences should be considered when designing and evaluating clinical training programs.

Abbreviations

CLE	Clinical Learning Environment
CLES+T	Clinical Learning Environment Supervision +Nurse Teacher Scale
MTRH/MU	Moi Teaching and Referral Hospital / Moi University
ISERC	Institutional Scientific and Ethical Review Committee
KNH	Kenyatta National Hospital
UON	University of Nairobi

Acknowledgments

The author acknowledges the study participants and all those who contributed to the study.

Author Contributions

Murei Sally: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing

Mosol Priscah: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing

Osotsi Franklin: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing

Data Availability Statement

Data are available from the corresponding author on request.

Conflicts of Interest

The authors declare no conflict of interest.

References

- [1] Channa, S., Topping, A., Willis, C., Melody, T., & Pearce, R. (2024). Clinical learning experiences of healthcare professional students in a student-led clinical learning environment (SLCLE)-a mixed methods evaluation. *Nurse Education in Practice*, 79, 104035.
- [2] Mbuthia, G., Rensburg, G. R., & Shaibu, S. (2024). Clinical experiences of RN to BScN nursing students in Kenyan universities. *Journal of Nursing Education and Practice*, 14(5), 1.
- [3] Karimi Mirzanezam, A., Ghahramanian, A., Ghafourifard, M., Davoodi, A., Bagheriyeh, F., & Hajieskandar, A. (2024). Nursing students' perception of the clinical learning environment and its impact on academic adjustment: a cross-sectional descriptive study. *BMC Medical Education*, 24(1), 1543.
- [4] Zhang, J., Shields, L., Ma, B., Yin, Y., Wang, J., Zhang, R., & Hui, X. (2022). The clinical learning environment, supervision and future intention to work as a nurse in nursing students: a cross-sectional and descriptive study. *BMC Medical Education*, 22(1), 548.
- [5] Papastavrou, E., Lambrinou, E., Tsangari, H., Saarikoski, M., & Leino-Kilpi, H. (2010). Student nurses experience of learning in the clinical environment. *Nurse education in practice*, 10(3), 176-182.

- [6] Ramsbotham J, Dinh H, Truong H, Huong N, Dang T, Nguyen C, Tran D, Bonner A. (2019). Evaluating the learning environment of nursing students: A multisite cross-sectional study. *Nurse Educ Today*; 79: 80-85.
<https://doi.org/10.1016/j.nedt.2019.05.016>
- [7] Cudjoe, E., Cleland, J., & McKimm, J. (2023). Gendered experiences of male nursing students in clinical learning environments: A qualitative synthesis. *Nurse Education Today*, 124, 105748.
- [8] Rajacich, D., Kane, D., Williston, C., & Cameron, S. (2020). If they do call you a nurse, it is always a “male nurse”: Experiences of men in the nursing profession. *Nursing Forum*, 55(1), 71-79.
- [9] Hernández-Padilla, J. M., Granero-Molina, J., Fernández-Sola, C., & López-Rodríguez, M. M. (2022). Nursing students' experiences with clinical supervision: A systematic review. *International Journal of Environmental Research and Public Health*, 19(4), 2451.
- [10] Zamanzadeh, V., Valizadeh, L., Negarandeh, R., Monadi, M., & Azadi, A. (2021). Factors influencing nursing students' clinical learning: A qualitative study. *BMC Nursing*, 20(1), 1-9.
- [11] Kim-Daniel Vattøy (2026). Master's students' perceptions of supervisory feedback and its links to engagement and learning: A mixed-methods study, *Studies in Educational Evaluation*, Volume 88, 101563,
<https://doi.org/10.1016/j.stueduc.2026.101563>
- [12] O'Sullivan E, Abujaber N, Ryan M, McBride KA, Tingsted Blum P, Vallières F. (2023). Gender considerations for supportive supervision in humanitarian contexts: A qualitative study. *Glob Ment Health (Camb)*. 2023 Aug 14; 10: e50.
<https://doi.org/10.1017/gmh.33>
- [13] Yvonne L. Hindes Jac J. W. Andrews (2011). Influence of Gender on the Supervisory Relationship: A Review of the Empirical Research from 1996 to 2010 Influence du genre sur la relation de supervision: Survol de la recherche empirique de 1996 à 2010. *Canadian Journal of Counselling and Psychotherapy / Revue canadienne de counseling et de psychothérapie*
- [14] Rarieya, J., Wango, N., Biswalo, T. (2025). Shaping Inclusive Futures: Gender-Responsive Practices in Pre-Primary Teacher Training Colleges in Tanzania and Uganda. *Global Journal of Educational Studies*, 11(1), 40-53.
- [15] Qian Yao, Jian Luo, Yu Ni, Chunxia He, Chuanying Huang, Ting Xu, Xiuchuan Li, Jimei Zhang, (2026). The impact of clinical learning environment on nursing interns' professional identity: The mediating role of belongingness, *nurse Education Today*, Volume 160, 106974,
<https://doi.org/10.1016/j.nedt.2026.106974>