Sudanese Nursing Students' Satisfaction Level and Clinical Learning Environment: A Cross-Sectional Study

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ABSTRACT

Background: The clinical learning environment is crucial for student nurses' skill acquisition and satisfaction in clinical settings. This study aimed to evaluate the relationship between Sudanese student nurses' satisfaction with clinical placements and the clinical learning environment. The study focused on the impact of students' perceptions of their learning environment on their satisfaction levels.

Methods: The study was an analytical cross-sectional study that recruited 204 Sudanese student nurses. Participants completed a questionnaire consisting of socio-demographic information, satisfaction with clinical assignments, and the Clinical Learning Environment Scale (CLES). Statistical analyses included descriptive and bivariate analyses, the Mann-Whitney U test, the Kruskal-Wallis test, Spearman correlation, and ordinal logistic regression analysis.

Results: The mean satisfaction score was 5.3, with no significant difference between male and female participants. The hospital manager's leadership style had the highest score among the CLES dimensions, while the supervisory relationship had the lowest score. The study found a significant positive correlation between satisfaction level, overall CLES score, and all CLES dimensions. The regression analysis showed that the supervisory relationship and the pedagogical atmosphere in the hospital were the most significant predictors of satisfaction level, while the overall score had the weakest relationship with the outcome variable.

Conclusion: Assessing the clinical learning environment is essential to improving student learning outcomes and ensuring a positive educational experience for student nurses. The study recommends paying attention to dimensions with lower scores, such as the supervisory relationship, while maintaining and enhancing dimensions with higher scores, such as the hospital manager's leadership style.

Keywords: Clinical environment, clinical learning, nurse student, Supervisory relationship, Satisfaction, Sudan.

INTRODUCTION

When it comes to nursing education, clinical placement evaluation is a major issue as it accounts for around half of what students learn[1]. As a result, the information gleaned from clinical assignment assessments could be used in the education of new nurses, ultimately leading to higher patient satisfaction. Skill gaining and student satisfaction while training in the clinical context is affected by some factors. Regarding student learning, these factors include the students' assessment of a suitable educational environment and the adequate involvement of clinical nurses[2,3]. A prior study found that the mentioned factors directly impact the ability of nursing students to learn clinical knowledge[1]. Because half of the competencies are learned and evaluated in the clinical context, curriculum design must be rethought to ensure that theoretical and practical parts are given equal weight.[1]

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Students' perceptions of the learning environment should be studied in light of excellent quality principles. Several tools have been employed to evaluate the clinical learning environment in recent years, including the Clinical Learning Environment and Supervision (CLES) scale. [2,4] Nursing students can use this instrument to assess various important concepts, including supervisory relationships, the ward educational climate, the role of nursing tutors in medical training, the ward manager's way of leadership, and the ward's nursing precepts and facilities. Various clinical settings, including hospitals and older people's homes, have used this scale.[5-8] Many languages have been used to verify CLES scale validity andits implementation in countries worldwide.[9] This multilingual tool is now used to evaluate the quality of the clinical learning process in many different settings.

The clinical education setting was the primary focus of most published studies.[4,6,7] In addition, the researcher examined the suitability of evaluating the influence of students' perceptions of their learning environment on student satisfaction levels in the clinical setting while conducting this study. To the knowledge, no previous studies have been conducted in this context on Sudanese students. Therefore, this study aims to evaluate the relationship between Sudanesestudent nurse satisfaction with clinical placements and the clinical learning environment.

METHODS

Study design and criteria

Between September and November 2022,the researcherdistributed the survey to conduct this analytical cross-sectional study.All undergraduate nursing students wereeligible to be included, whilepostgraduate nurses, paramedical students, and students refusing to participate were excluded.

Study Procedures

The study used a three-part questionnaire to assess the variables. The first part collected demographic information, the second part used a 10-point scale to measure satisfaction with clinical assignments, and the third part used the CLES scale to evaluate the clinical learning environment. The CLES scale had 34 items grouped into five dimensions. Cronbach's alpha was 0.956 on the original scale.

Data handling

Thequestionnairewasdistributedonlineonthe educational platforms of the relevant nursing students and their social media platforms. It wasalso forwarded to the academic E-mails of the students. The data confidentially followed until the end of the data collection period. Then all data weregathered, cleaned, coded, and prepared for analysis.

Data analysis

This study analyzed data collected through surveys and performed descriptive and bivariate analyses, using non-parametric tests to compare groups. The association between student satisfaction with clinical placements and the Clinical Learning Environment Scale (CLES) results was examined using the Spearman correlation test. An ordinal logistic regression analysis was conducted, and the p-value of significance was less than 0.05. SPSS version 25 was used for all statistical analyses.[10]

RESULTS

Participants' characteristics

The study recruited 204 Sudanese nurses with 170 female participants (83.3%). The mean age of participants was 21.75 ranging from 17 to 34 years. The mean for all participants' satisfaction was 5.3; for males, it was 5.28, and for females was 5.38. *Table 1* summarizes the participant's demographiccharacteristics.

CLES score evaluation

The overall score mean was 3.17 ± 0.81 points, the hospital manager's leadership style was the highest score in the scale dimensions with 3.3 ± 1 points, while the supervisory

relationship was the lowest score among dimensions with 3.04 ± 0.86 points. The inferential statistics revealed no statistically significant difference between males and females regarding CLES dimensions. *Table 2* shows the CLES score analysis and the full questionnaire items are shown in *Appendix 1*.

Analysis of satisfaction level and learning environment

The study found that only a small percentage of nurses were very satisfied or not satisfied at all with their learning experience, with the majority choosing a score of five out of ten. There was no significant gender difference in satisfaction levels. The analysis also showed a significant positive correlation between satisfaction levels and all CLES dimensions, as well as the overall CLES score as shown in **(Table 3).**

The correlation coefficient (R) of overall CLES and satisfaction level was 0.388, and the p-value was > 0.001. Furthermore, ordinal logistic regression was conducted using nurses' satisfaction level as a dependent variable and CLES score as an independent variable. All predictor variables are statistically significant (p < 0.001) and positively associated with the outcome variable. "Supervisory relationship" and "The pedagogical atmosphere in the hospital" had the highest coefficient estimate of 0.939 and 0.932, respectively and a p-value of <0.001, indicating a strong positive association and prediction for the satisfaction level. The overall score variable also has a positive coefficient. Still, it is the smallest of all predictors, indicating that it has the weakest relationship with the outcome variable among all predictors. The pseudo-R^2 value of 0.042 suggests that the model explains only a

Table 1: General demographics

Basic characteristics	Mean ± SD	Median	Minimum	Maximum
Age (year)	21.75 ± 2.63	22	17	34
Level of satisfaction during clinical assignments	5.3 ± 2.6	5	1	10
Female	5.28 ± 2.7	5	1	10
Male	5.38 ± 2.07	5	1	9
Sex	N (%)			
Female	170 (83.3%)	-	-	-
Male	34 (16.7%)	-	-	-

*N= Numbers, SD= Standard Deviation

Table 2: CLES score evaluation

CLES	Mean (SD)	Group	Gender Mean (SD)	P-value
Supervisory relationship	3.04 (0.86)	Female	3.02 (0.904)	0.365
		Male	3.16 (0.559)	
The pedagogical atmosphere in the hospital	3.11 (0.816)	Female	3.09 (0.842)	0.759
		Male	3.20 (0.669)	
Role of nursing teacher	3.21 (0.96)	Female	3.22 (0.969)	0.694
		Male	3.19 (0.925)	
The hospital manager's leadership style	3.3 (1)	Female	3.33 (1.006)	0.188
		Male	3.12 (0.981)	
The value placed on nursing in the hospital	3.18 (1.02)	Female	3.20 (1.004)	0.711
		Male	3.10 (1.096)	
Overall score	3.17 (0.81)	Female	3.18 (0.83)	0.881
		Male	3.15 (0.79)	

*SD= Standard deviation

small portion of the variation in the outcome variable. *Table 4* illustrates the details of ordinal logistic regression.

DISCUSSION

The study evaluated the clinical learning environment and satisfaction levels of 204 Sudanese nurses using the CLES scale. The supervisory relationship had the strongest association with satisfaction levels. Ordinal logistic regression found all predictor variables positively associated, but the overall score had the weakest relationship, and the model only explains a small portion of the outcome variation. The study involved a larger proportion of female participants, which is not surprising given that nursing is a profession dominated by women. In line with previous studies by Bisholt et al. and Gustafsson et al., no significant gender differences in both satisfaction levels and CLES scores was found [8,11]. However, Cervera-Gasch et al. detected difference between males and females in their studies. They suggest that future research should consider the satisfaction levels of male nursing students, who seem to place greater value on their learning environment and thus experience higher levels of satisfaction with their clinical placements [12].

In Johannessen et al. study, the second-year nursing students expressed positive evaluations of CLES during their hospital placement [13]. Also, few students in their study reported dissatisfaction with their relationship with the clinical preceptor. Their average score of 4.05 for CLES in hospital placement was similar to two Swedish studies [8,14]. Additionally, Warne et al. reported a similar score in evaluating nursing students' learning experiences in nine European countries. They found that students with at least seven weeks of hospital placement were more satisfied than those with six weeks [15]. Johannessen et al. found no correlations with background variables like age, sex, or study year [13]. While Skaalvik et al. found that first-year nursing students evaluated the CLES in nursing homes more negatively than in hospitals, Bisholt et al. found no difference in CLES satisfaction among nursing students in their last semester in different clinical settings [8,16]. However, the CLES scale score was lower than the results of previous literature, where their students gave high overall scores compared to us [8,12-17].

Table 3: Analysis of the correlation between the satisfaction levels and overall CLES score and all CLES dimensions.

CLES	Level of satisfaction during clinical assignments	
	R	P.value
Supervisory relationship	0.345**	<0.001
The pedagogical atmosphere in the hospital	0.350**	<0.001
Role of nurse teacher	0.284**	<0.001
The hospital manager's leadership style	0.363**	<0.001
The value placed on nursing in the hospital	0.318**	<0.001
Overall	0.388**	<0.001

**Correlation is significant at the 0.01 level (2-tailed). R= correlation coefficient

Table 4: Ordinal logistic regression analysis

Predictor	Estimate	SE	p	R²McF
The hospital manager's leadership style	0.765	0.136	>0.001	0.036
The pedagogical atmosphere in the hospital	0.932	0.169	>0.001	0.035
Supervisory relationship	0.939	0.164	>0.001	0.373
The value placed on nursing in the hospital	0.649	0.130	>0.001	0.028
Role of nursing teacher	0.601	0.136	>0.001	0.022
Overall score	0.030	0.005	>0.001	0.042

SE: standard error; R²McF: McFadden's R

This showed that Sudan should focus more on improving their clinical learning environment and supervision measures.

The most highly valued aspect of the CLES+T scale in Vizcaya-Moreno et al. was the "supervisory relationship," which was in line with the findings of Gustafsson et al., Doyle et al., and Bergjan and Hertel et al.[11,18,19]. However, this differs from the results of other studies conducted by Comparcini et al., where the "supervisory relationship" was rated as the least important dimension[20]. In light of the latter finding, "supervisory relationship" had the lowest score on the CLES scale among the students.

Cervera-Gasch et al. results of multiple linear regression analysis showed that there was a positive correlation between the students' satisfaction with their clinical placements and the CLES+T score [12]. They declared that their correlation was particularly strong for the "pedagogical atmosphere in the ward" dimension, while in the study, the strongest correlation was for the "Supervisory relationship"and then "The pedagogical atmosphere in the hospital"[12]. However, Cervera-Gasch et al. results regarding regression are doubtful as, from a methodological perspective, they used linear regression in their prediction model for satisfaction level, which was an ordinal categorical outcome, and the linear regression wouldnot be the most appropriate in this case. Instead, ordinal logistic regression would be a better choice, which was applied in the study.

The study had a larger sample size compared to some other studies conducted on the same topic[7,12]. The study also included correlation and regression analyses to examine the relationship between the learning environment and supervision with satisfaction levels among Sudanese students. However, the study had limitations, including a smaller number of male participants, self-reported parameters, and potential confounders. The researcher suggested conducting high-quality studies with larger sample sizes in various settings to enhance understanding of the observed relationships and improve nurses' learning environment and satisfaction levels.

CONCLUSION

The highest score was for the hospital manager's leadership style, and the lowest was for the supervisory relationship. Satisfaction levels were positively correlated with both the overall CLES score and all CLES dimensions. The supervisory relationship and pedagogical atmosphere were the most significant predictors of nurses' satisfaction levels. The study recommends improving dimensions with lower scores while preserving and further improving higher-scoring dimensions.

Ethical clearance

Informed consent was obtained from all participants before they completed the online questionnaire, and they were assured of the confidentiality and anonymity of their responses.

Data Availability Statement

The data described in this study are available upon request from the corresponding author. However, in consideration of privacy concerns, the data are not available for public access.

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This study did not receive any external funding.

Conflicts of Interest

The author declares no conflict of interest.

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