



ORIGINAL RESEARCH

Supervision-Based Support Systems for Nursing Undergraduates at General Sir John Kotelawala Defence University, Sri Lanka in the Clinical Learning Environment: A Cross-Sectional Study

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Abstract

Introduction: The clinical learning environment (CLE) plays a role in bridging the theory-practice gap through the supervision of qualified professionals, helping students develop clinical competencies, confidence, and professional growth. Effective supervision-based support systems (SBSS) improve learning and ease the challenges students face in clinical practice. This study assessed the SBSS for BSc nursing students in the second, third, and fourth academic years at General Sir John Kotelawala Defence University in the CLE.

Methods: A descriptive cross-sectional study was conducted with 211 participants recruited through simple random sampling. Data were collected using the Clinical Learning Environment, Supervision and Nurse Teacher (CLES+T) scale, demographic questions, and questions related to challenges. Data were analyzed using SPSS 25, employing descriptive and inferential statistics.

Results: Most students were female (68.7%) and aged 21-25 years (93.3%). The overall mean score of CLES+T was 2.45 (SD±0.55). Frequency of supervision during clinical placements was significantly associated with better perceptions of the pedagogical atmosphere, supervisory relationships, and the role of the nurse teacher ($p < .05$). The number of weeks per allocation and the adequacy of the clinical period were significantly associated with supervisory relationships. The most common student-reported challenges were communication gaps with the clinical staff and stress within the CLE despite the presence of competent instructors.

Conclusion: This study concludes that while nursing undergraduates held a moderately positive view of their SBSS in CLE, they had concerns about the adequacy of clinical supervision. The findings highlight that consistent clinical supervision improves students' overall experience.

Keywords: support system, supervision, clinical learning environment (CLE), nursing undergraduates, KDU

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Introduction

The clinical learning environment (CLE) is a multifaceted setting in which nursing students apply theoretical knowledge to practice through direct patient care experiences.¹ In the context of the CLE, supervision-based support systems (SBSS) are defined as a formal process of professional support designed to help students become skilled and professional practitioners under the supervision of qualified personnel.^{2,3} Having SBSS in the CLE allows the acquisition of professional values among nursing students through sound supervision and interactions.

In the Sri Lankan context, clinical supervision is a formal, structured process of professional support and learning that is widely practiced, enabling student nurses to reflect on their practice, enhance their skills and knowledge, and ensure safe, ethical, and effective care.⁴ This plays a pivotal role in integrating theory into practice while supporting the students to ease their transition, improving learning outcomes, enhancing satisfaction with the CLE, and promoting quality care.⁵ Existing literature indicates that positive supervisory relationships and constructive feedback enable students to identify their strengths and weaknesses that need to be improved, which ultimately contributes to their professional development.⁶

Though the importance of clinical supervision has been recognized in nursing education in Sri Lanka, there are several challenges faced by the nursing officers due to high workloads, overcrowded clinical environments, lack of staff, insufficient supervision skills, lack of formal training, limited support, and resource constraints, which may hinder these outcomes. This results in inconsistent learning experiences and decreases the quality of clinical supervision for student nurses.

Therefore, it is important to bridge the theory-practice gap by implementing interventions that improve the quality of nursing education and patient care. Strengthening clinical supervision practices and SBSS, such as mentoring and structured feedback within the CLE, foster professional growth and enhance the quality of clinical education for nursing undergraduates.⁷ This highlights an urgent need for a supervision-based support system for the nursing students to enhance the quality of clinical training and nursing education.

Kotelawala Defence University offers a four-year BSc (Hons) Nursing and Midwifery programme with ongoing clinical training for a decade, and it is high time to review the existing SBSS, challenges, and explore best practices. Many global studies have examined nursing students' perceptions of their CLE and supervision, highlighting the critical need for a supportive, structured CLE to enhance nursing students' learning, professional development, and overall satisfaction with their courses.⁵ Although many local studies examined CLE with specific reference to clinical supervision,^{2,8} there is still a dearth

of empirical studies carried out in the local context to examine the SBSS among nursing undergraduates, highlighting a clear gap in the literature.

Methodology

A descriptive cross-sectional study was carried out at General Sir John Kotelawala Defence University, Sri Lanka, encompassing nursing undergraduates across the three academic years. The study population consisted of all eligible nursing undergraduates (n=274) in the second, third, and fourth years, with 98, 87, and 89 students, respectively. A sample of 211 students was selected using simple random sampling, in which each student had an equal opportunity to be included in the study, ensuring unbiased representation of the overall population. Employing the lottery method, a list of all eligible nursing undergraduates was obtained from the department student registry, and each student was assigned a unique identification number. The identification numbers were written on identical pieces of paper and thoroughly mixed in a container. Then, 211 numbers were randomly selected, and the students with those numbers were included in the study. The first-year nursing undergraduates were excluded due to their limited exposure to the CLE.

Data were collected using the Clinical Learning Environment, Supervision and Nurse Teacher evaluation tool (CLES+ T), a validated tool developed by Saarikoski *et al.*⁹ This tool consisted of 34 closed-ended structured questions on a five-point Likert scale, from fully agree to fully disagree, covering five domains of pedagogical atmosphere, ward manager leadership, nursing premises, supervisory relationship, and nurse teacher role. Moreover, pretested, self-administered questions were included in the questionnaire to collect demographic data and identify challenges faced by nursing students in CLE. The pre-test was conducted using the same questionnaire with 10 nursing undergraduates who met the same eligibility criteria, independent of the main study, to identify any unclear or ambiguous questions.

Data collection was conducted over 03 months, from the initial recruitment of participants (August to October 2024). The data collection took place at the faculty premises without hindering academic activities. The ethical approval was granted by the Ethics Review Committee of the Faculty of Medicine, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka (ERC No. RP/S/2024/32), as the study followed principles of voluntary participation, informed consent, and confidentiality.

The data analysis was carried out using SPSS 25. Descriptive statistics (frequencies, percentages, mean, standard deviation) were obtained for socio-demographic characteristics and learning environment, and independent-samples t-test and analysis of variance were used to compare the domain-wise mean scores. The level of statistical significance is set at $\alpha=0.05$.

Results

The total sample consisted of 211 nursing undergraduates. As shown in Table 1, the majority of study participants were aged 21-25 (93.4%). The findings on gender distribution: most participants were female (68.7%), and most were in their second year (37%) or third year (37.9%). In terms of clinical allocation, over half of the participants

(52.1%) were assigned for 4 to 7 weeks. The majority of students (83.4%) found their allocated period adequate for learning, and most participants (61.6%) had placements lasting more than four weeks. The findings on the frequency of supervision during clinical placement showed that most participants (56.9%) reported adequate supervision.

Table 1. Distribution of socio-demographic characteristics of the study participants and the details of the supervision-based support system (SBSS)

<i>Characteristics</i>	<i>Frequency (%)</i>
Age groups of students	
21-25	197 (93.3%)
26-30	12 (5.7%)
31-35	1 (0.5%)
36-40	1 (0.5%)
Gender	
Male	66 (31.3%)
Female	145 (68.7%)
Year of education	
2 nd year	78 (37%)
3 rd year	80 (37.9%)
4 th year	53 (25.1%)
Number of weeks per allocation	
1-3 weeks	39 (18.5%)
4-7 weeks	110 (52.1%)
8-10 weeks	62 (29.4%)
Adequacy of period of each allocation	
Adequate for learning	176 (83.4%)
Not adequate for learning	35 (16.6%)
Duration of current or last clinical placement	
2 weeks or less	11 (5.2%)
3 weeks	21 (10%)
4 weeks	49 (23.2%)
More than 4 weeks	130 (61.6%)
Frequency of supervision during clinical placement	
No supervision	91 (43.1%)
Adequate supervision	120 (56.9%)

Table 2 shows domain-wise mean scores of each item of (CLES + T), which we used to assess nursing students' perceptions of their clinical learning environment.

Accordingly, the nursing students perceived their clinical

learning environment as moderately positive, with an overall mean score of 2.45 (SD = 0.55). The highest domain-wise mean score was for the ward manager's leadership style (2.60), whereas the lowest was for supervisory relationship (2.33).

Table 2. Mean scores of the dimensions of the CLES+T

<i>Dimension</i>	<i>Mean</i>	<i>Standard Deviation (±SD)</i>
Pedagogical atmosphere	2.36	0.60
Leadership style of the ward manager	2.60	0.66
Premises of nursing in the ward	2.39	0.66
Supervisory relationship	2.33	0.69
Role of the nurse teacher	2.55	0.62

Table 3 presents a comparison of students' perceptions of the supervision-based support system in the clinical learning environment by socio-demographic characteristics (age, gender, year of education, weeks per

allocation, adequacy of allocation, duration of placement, and supervision frequency) across the five domains of the CLES+T. According to the graphical distribution of the data set (Histogram), the data were normally distributed.

Table 3. Comparison of the students' experience on SBSS in the CLE by socio-demographic characteristics

<i>Characteristic</i>	<i>Pedagogical atmosphere</i>	<i>Leadership style of the ward manager</i>	<i>Premises of nursing in the ward</i>	<i>Supervisory relationship</i>	<i>Role of the nurse teacher</i>
Mean					
Age					
21-25	2.343	2.593	2.382	2.307	2.548
26-30	2.732	2.875	2.588	2.760	2.685
31-35	1.111	0.750	0.500	0.875	1.333
36-40	3.000	3.000	3.000	3.000	3.000
F- statistics					
	3.481	3.526	3.444	3.534	1.690
P - value					
	.017	.016	.018	.016	.170
Gender					
Male	2.450	2.606	2.428	2.517	2.503
Female	2.323	2.600	2.369	2.244	2.574

(Continued)

<i>Characteristic</i>	<i>Pedagogical atmosphere</i>	<i>Leadership style of the ward manager</i>	<i>Premises of nursing in the ward</i>	<i>Supervisory relationship</i>	<i>Role of the nurse teacher</i>
t-statistics					
	1.418	0.061	0.598	2.699	-0.771
P - value					
Year of education	.158	.956	.550	.008	.441
2 nd year	2.204	2.452	2.244	2.063	2.379
3 rd year	2.463	2.678	2.531	2.539	2.689
4 th year	2.461	2.708	2.382	2.406	2.600
F- statistics					
	4.406	3.257	3.805	10.717	5.439
p-value					
	.013	.004	.024	.000	.005
Number of weeks per allocation					
1-3 weeks	2.316	2.449	2.526	2.465	2.556
4-7 weeks	2.382	2.600	2.405	2.407	2.587
8-10 weeks	2.357	2.702	2.270	2.107	2.488
F-statistics					
	0.172	1.750	1.862	4.816*	0.515*
P - value					
	.842	.176	.158	.009	.598
Adequacy of period of each allocation					
Adequate for learning	2.397	2.609	2.379	2.373	2.579
Not adequate for learning	2.187	2.564	2.429	2.111	2.416
t-statistics					
	1.888	0.366	-0.400	2.064	1.435
P - value					
	.060	.715	.689	.040	.153

(Continued)

<i>Characteristic</i>	<i>Pedagogical atmosphere</i>	<i>Leadership style of the ward manager</i>	<i>Premises of nursing in the ward</i>	<i>Supervisory relationship</i>	<i>Role of the nurse teacher</i>
Duration of current/ last clinical placement					
2 weeks or less	2.293	2.636	2.432	2.682	3.020
3 weeks	2.180	2.595	2.488	2.333	2.328
4 weeks	2.431	2.520	2.536	2.480	2.626
More than 4 weeks	2.372	2.631	2.312	2.242	2.525
F-statistics					
	0.906	0.335	1.570	2.461	3.518
P - value					
	.439	.800	.198	.064	.016
Frequency of supervision during clinical placement					
No supervision	2.205	2.511	2.286	2.050	2.442
Adequate Supervision	2.482	2.671	2.465	2.387	2.635
t-statistics					
	-3.371	-1.740	-1.950	-5.461	-2.280
P - value					
	.001	.083	.052	.000	.024

Regarding challenges, about 46% of participants reported gaps in communication with instructors and clinical staff. About 59.7% of participants reported stress within the CLE. In addition, a proportion of participants reported difficulties in integrating theory into practice (30.8%) and inconsistencies in supervision and support (36.5%).

Discussion

This study deals with nursing undergraduates' experiences with SBSS in the CLE at KDU, Sri Lanka. Based on the study findings, the nursing students are from different academic years and have received varying levels of exposure during their clinical training. While most of the participants found that clinical exposure met their

expectations, a few felt the need for potential improvements in the current clinical training programme, including supervision. Some students may need more guidance and support during their clinical training to become more confident as professionals, which is essential for better patient care.

This study reported lower mean scores across all dimensions of the CLES+T. This suggests that nursing students in this study perceived their SBSS as less supportive than in previous findings.¹⁰ Findings of the study exhibited that students had a moderately positive perception of their SBSS in the CLE. Among the five subscales in the present study, the ward manager's leadership style received the highest mean score,

indicating that students receive good support from ward managers in their learning. Similarly, the role of the nurse teacher was scored positively, showing that students valued the support provided by their nurse educators in the clinical setting. Similar studies reported a more favorable perception of nurse educators' involvement in clinical training.¹⁰ However, this is in contrast with the findings of some studies, which suggest that the students have negative feelings towards the involvement of nurse educators in clinical training.^{9,11} This emphasizes the importance of clearly defined roles between students and clinical supervisors, maintaining reflective dialogue, and ensuring effective clinical supervision, which helps reduce student anxiety and enhance their confidence in clinical practice. The supervisory relationship received the lowest mean score, indicating that some students perceived inadequate clinical supervision and support from their clinical supervisors. In line with the present study, previous research has highlighted that low scores in supervisory relationships reflect a lack of consistent, individualized clinical supervision due to staffing shortages and heavy workloads.⁹ Strong supervision is essential for students to feel adequately supported.⁶ This emphasizes the importance of strengthening clinical supervision and the clinical learning environment to further support the clinical learning experience for nursing students. The pedagogical atmosphere and nursing premises also received moderate scores, suggesting that improvements are needed in the clinical learning experience and the integration of nursing care principles. This highlights the necessity of carefully planning clinical placements in chosen clinical areas to provide effective learning opportunities and help students achieve their goals.¹²

The findings of this study provide important insights into how various socio-demographic characteristics of nursing students influence their perceptions of the supervision-based support system in the clinical learning environment. The study found a significant association between age and most areas of the CLE, except for the nurse teacher role, suggesting that older and more experienced students perceive clinical placements more positively, especially those who joined the degree program with prior clinical experience, as they enlisted in the lateral entry provision. This supports the idea that in complex clinical settings, maturity may enhance communication and resilience.¹³ The study found a link between gender and supervisory relationship, suggesting that gender may affect how students interact with supervisors or what they expect from supervision. However, since other areas do not show significant differences, gender may not have a strong overall impact on clinical learning experiences. Conversely, previous findings reported that female nursing students perceived themselves as better than male students across most domains of the CLES+T, with significant differences in supervisory relationships, pedagogical atmosphere, the

role of the nurse teacher, and the ward manager's leadership style.¹⁰ Fourth-year students scored highest in most domains, while second-year students scored lowest, particularly in pedagogical atmosphere and supervisory relationships. It may be due to less experience in CLE, as they are still in their second year. The significant association between the year of education and all CLES+T domains suggests that as students progress with their academic years, they gain a better understanding of the clinical setting, leading to improved perceptions. The supervisory relationship demonstrated that senior students may have greater confidence and independence when working with supervisors, leading to a more positive experience. These findings are consistent with previous studies, which reported that senior students exhibit greater confidence and resilience in the CLE, while junior students lack confidence and need more structured supervision and emotional support.^{14,15}

Also, the current study reported a significant association between the clinical allocation and the adequacy of the period with the supervisory relationship, highlighting the need for an adequate clinical training period to enhance student learning. This aligns with the study, which reported that consistent supervision enhances learning outcomes and student satisfaction during clinical placements, whereas less supervision leads to higher levels of stress, uncertainty, and vulnerability.¹⁶ The significant association between the role of the nurse teacher and placement duration emphasizes that longer placements may involve more structured teaching support, while shorter placements may lead to reduced engagement from nurse teachers over time. Findings also reported that longer clinical placements with adequate supervision led to positive experiences in the CLE, while longer placements with inadequate supervision may lead to student burnout.¹⁷ The students who received adequate supervision depicted significant associations with pedagogical atmosphere, supervisory relationship, and the nurse teacher role, highlighting the importance of consistent supervision in a supportive CLE.

The findings of the present study highlighted communication gaps with the clinical staff, stress within the CLE, difficulties in integrating theory into practice, and inconsistencies in supervision and support as key challenges in the CLE. In support of these findings, prior studies have identified poor communication as a key challenge that reduces student confidence in the clinical setting, while poor supervision and a lack of mentorship increase students' stress.^{6,18-19}

In the current CLE context in Sri Lanka, there is limited awareness and no systematic or structured approach to supervision. This may lead to gaps in guidance, support, and professional development. Therefore, having a well-developed SBSS will strengthen clinical education, ensure

consistent support for students, and enhance learning experiences and the formation of professional identity. Having a mentor in the CLE is also important to build trust, awareness, and role modeling that can enhance the student's positive experience in the clinical setting.^{6,20} Moreover, the findings underscore the necessity of timely feedback to students, highlighting the importance of prompt, formative feedback in clinical learning.

The limitations of the study include that it was conducted at a single university in Sri Lanka; thus, the findings cannot be considered representative of all second-, third-, and fourth-year nursing undergraduates, and it lacks a longitudinal perspective due to a limited time frame.

Conclusion

The study concludes that nursing undergraduates held a moderately positive perception of their SBSS in CLE. This study suggests that providing consistent clinical supervision enhances student learning outcomes and the overall educational experience of the students, highlighting the need to strengthen structured mentorship models and supervisor allocation strategies within undergraduate clinical training programmes. However, communication barriers and stress were identified as common challenges, emphasizing the need for mentors and positive role models in the CLE to improve the quality of nursing education.

Authors' contributions

Concept and design: SY, GK, HN, JC, MC

Literature review: SY, GK, HN, JC, MC

Data collection: SY, GK, HN, JC, MC

Data analysis: SY, GK, HN, JC, MC

Compilation of manuscript: SY, GK, HN, JC, MC

Supervision, editing and proofreading of the study: SD, KH

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