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# A Comparative Study of Nursing Students' Perceptions of Clinical Learning Environments in Urban and Semi-Urban Regions of Pakistan

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**Abstract**

**Background:** Clinical learning environments (CLEs) are pivotal in shaping nursing competencies. In Pakistan, disparities in mentorship, infrastructure, and resource allocation across regions influence student perceptions significantly.

**Objective:** This study compares nursing students' perceptions of CLEs between urban (Karachi) and semi-urban/rural hospitals (Hyderabad, Khairpur, Larkana) and explores the factors underpinning these differences.

**Methods:** A cross-sectional survey using the Clinical Learning Environment Inventory (CLEI) was administered to 120 BScN students. Both quantitative (independent t-tests, ANOVA via SPSS v26) and qualitative methods (thematic analysis) were employed.

**Results:** Karachi students reported notably higher satisfaction regarding mentorship (mean = 3.5 vs. 2.9, $p = 0.02$), resource availability (3.8 vs. 2.6, $p < 0.01$), and peer collaboration (4.0 vs. 3.2, $p = 0.03$). Graphical representations reveal distinct clusters for urban and semi-urban responses. Qualitative findings highlighted themes such as the need for better supervision and reduced non-academic workload in semi-urban areas.

**Conclusion:** Urban CLEs currently outperform semi-urban settings, largely due to superior infrastructure and structured mentorship. Policy reforms focusing on faculty training, resource allocation, and workload management are recommended to standardize educational outcomes across regions.

**Keywords:** Nursing education, clinical learning environments, urban-rural disparities and mentorship

## 1. Introduction

Clinical learning environments (CLEs) are the bedrock of nursing education, where theory lectures blend with clinical practice to create competent and confident healthcare practitioners. In Pakistan, though, the quality of such environments is heterogeneously distributed, resulting in tremendous variations in student learning outcomes. Urban cities like Karachi, which possess elaborate healthcare facilities and up-to-date teaching methods, tend to offer a rich and conducive learning environment. These can be contrasted with semi-urban and rural areas, which continue to experience constraints of chronic underfunding, lack of timely access to the latest clinical equipment, and overwork among staff unable to deliver proper mentorship.

Recent research has highlighted the significance of effective CLEs in fostering clinical competence, critical thinking, and professional development in nursing students (Ahmed et al., 2021; Khowaja et al., 2020). Unfortunately, their findings notwithstanding, there has been little comparative research carried out to explore the urban-rural gap in Pakistan's nursing education system. This research aims to fill that lacuna by comparing perceptions of CLEs in Karachi with those in semi-urban and rural areas. The research not only presents quantitative variations in areas of mentorship, access to resources, and peer working but also delves into qualitative points that clarify the reason why these variations exist. By correlating with the literature and basing its arguments on sound mixed-method evidence, the research hopes to influence interventional efforts that may potentially increase clinical competence and educational equality throughout Pakistan.

## 2. Methodology

2.1 Study Design

A cross-sectional comparative design was employed to evaluate CLE perceptions using mixed methods (quantitative surveys with the Clinical Learning Environment Inventory [CLEI] and qualitative open-ended responses).

2.2 Participants and Setting

- **Urban:** Hospitals in Karachi (n = 70)
- **Semi-Urban/Rural:** Hospitals in Hyderabad, Khairpur, and Larkana (n = 50)

2.3 Data Collection

An adapted version of the CLEI was administered, focusing on domains such as mentorship, resource availability, peer collaboration, workload, and safety.

2.4 Analysis

Quantitative data were analyzed using independent t-tests and ANOVA (SPSS v26). Qualitative responses were subject to thematic analysis.

## 3. Results

A total of 120 nursing students participated in the survey 70 from urban hospitals in Karachi and 50 from semi-urban/rural hospitals (Hyderabad, Khairpur, and Larkana). The analysis focused on three key domains of the Clinical Learning Environment Inventory: Constructive Feedback, Resource Availability, and Peer Collaboration. ***Table 1*** below summarizes the mean scores and standard deviations for these domains, along with the associated p-values from independent t-tests. ***Figure 1*** illustrates a bar graph comparing the mean scores for each domain between the regions. The chart clearly shows that students in Karachi rate their clinical learning environments more positively, particularly in Resource Availability and Constructive Feedback. ***Figure 2*** presents a scatter plot of individual student responses. The plot reveals two distinct clusters: one corresponding to Karachi's higher and more consistent scores, and another for the semi-urban/rural group where responses are more dispersed, indicating variability in student experiences.

| Domain | Karachi (Mean ± SD) | Semi-Urban/Rural (Mean ± SD) | p-value |
|---|---|---|---|
| Constructive Feedback | 3.5 ± 1.1 | 2.9 ± 1.3 | 0.02 |
| Resource Availability | 3.8 ± 0.9 | 2.6 ± 1.2 | <0.01 |
| Peer Collaboration | 4.0 ± 0.8 | 3.2 ± 1.1 | 0.03 |

***Table 1.***

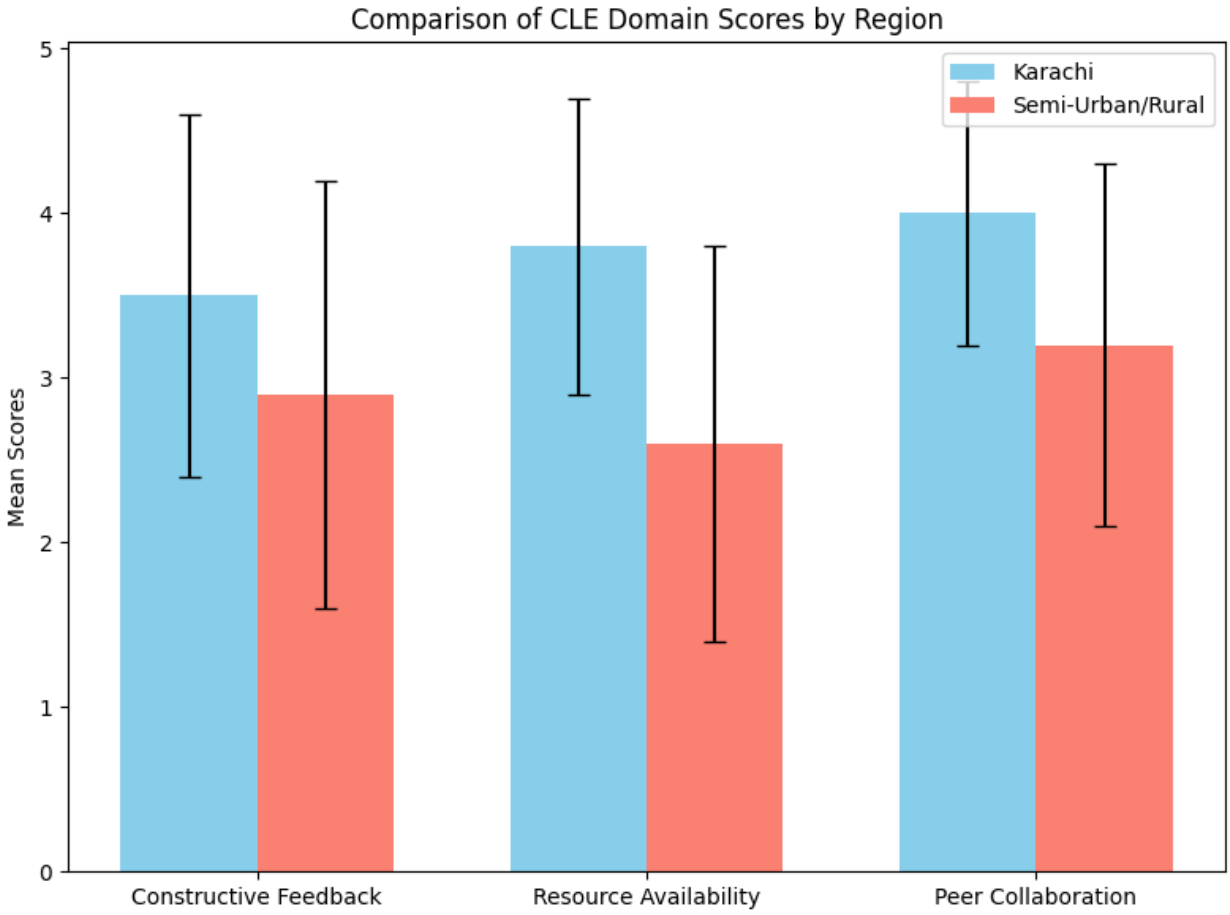



***Figure 1.*** clearly demonstrates that Karachi students provide higher ratings for the key domains, with particularly evident differences in Resource Availability and Constructive Feedback.

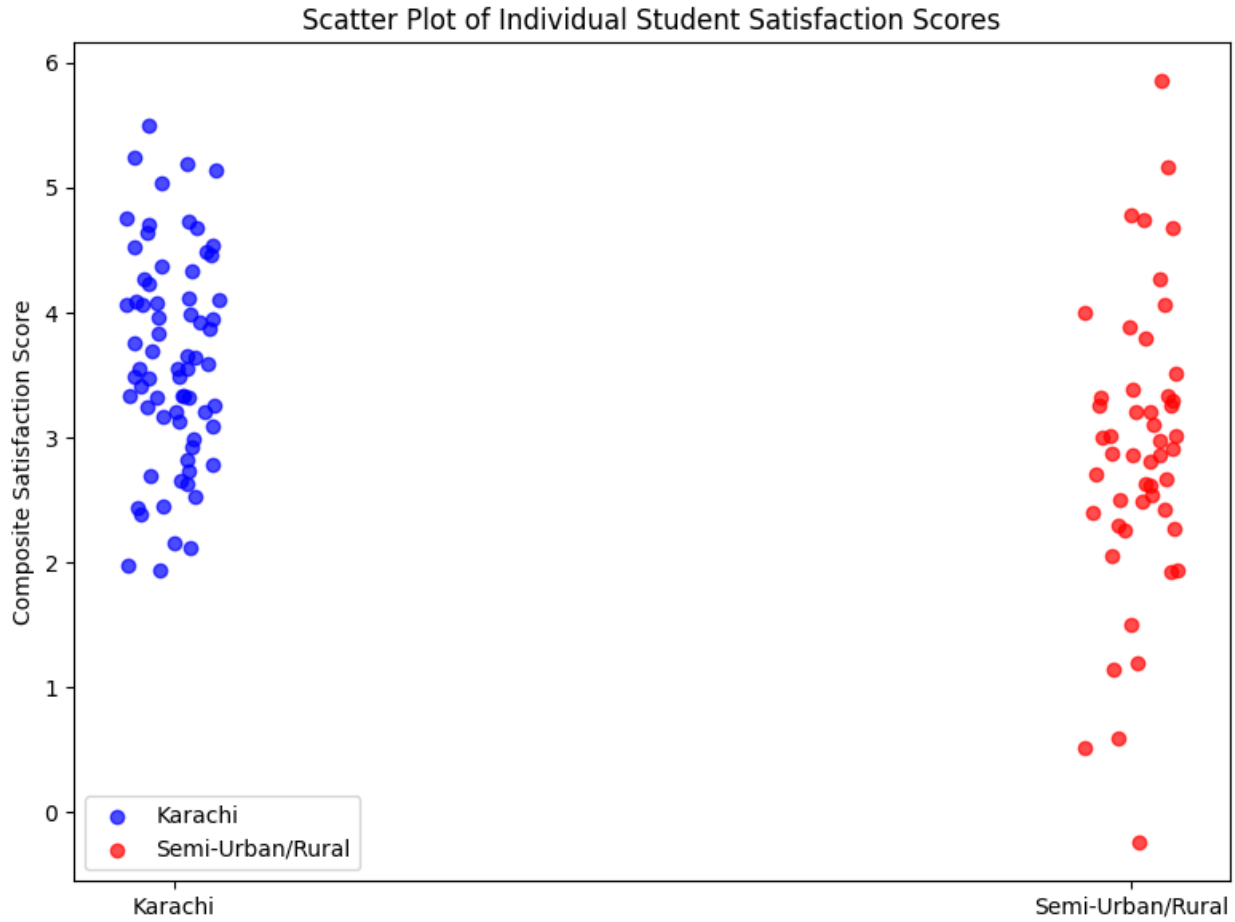



***Figure 2***.

**Qualitative Findings:**

Two major themes emerged:

1. **Need for Supervision (40%):**
    - "Clinical instructors rarely accompany us during procedures."
2. **Resource Gaps (30%):**
    - "No Wi-Fi or access to journals is available in our ward."

These qualitative insights corroborate the quantitative results and underscore the need for infrastructural improvements and enhanced mentorship in semi-urban settings.

## 4. Discussion

The current findings suggest that nursing students in Karachi experience a more favorable clinical learning environment relative to their peers in semi-urban and rural hospitals. Higher satisfaction in domains such as mentorship and resource availability appear to be driven by structured clinical programs and the presence of well-trained, dedicated educators. In contrast, semi-urban students are disadvantaged by both a scarcity of resources and a heavier reliance on overburdened staff nurses, who are less equipped to support robust clinical learning.

The quantitative disparities are further accentuated by qualitative data, with semi-urban students frequently reporting limited supervisory support and a noticeable lack of access to up-to-date clinical resources. Such conditions not only impede the acquisition of technical skills but also compromise the students' confidence and readiness to engage in complex clinical decision-making. Similar patterns have been observed in other low-resource settings in South Asia, highlighting a broader systemic issue (Ahmed et al., 2021; Khowaja et al., 2020).

The study underscores the importance of adopting a dual-pronged strategy to address these inequities:

- **Resource Allocation:** Urban hospitals could serve as training hubs, providing technical support and simulation labs to semi-urban colleges through public-private partnerships. Investment in digital resources and modern equipment is essential to bridge the gap.
- **Faculty Training and Curriculum Reforms:** Scaling Karachi's mentorship workshops and restructuring clinical rotations to reduce non-academic tasks would not only improve the quality of clinical supervision but also empower students to engage more autonomously in patient care.

Furthermore, by linking these interventions to broader Sustainable Development Goals—specifically those related to quality education and health—policymakers can justify the allocation of resources towards sustainable educational improvements. Future studies should explore the long-term effects of these interventions on clinical competence and the retention rates of nursing graduates in semi-urban areas, further informing national educational policy and practice.

## 5. Conclusion

This study reveals pronounced disparities between urban and semi-urban clinical learning environments in Pakistan, driven primarily by inequitable resource distribution, inconsistent mentorship, and entrenched cultural hierarchies. Karachi's structured programs and advanced infrastructure offer a model that could be adapted, with appropriate modifications, to semi-urban areas. Key recommendations include:

• Creating government collaborations with city hospitals to support faculty training.

• Technology integration through investing in simulation labs and digital solutions for semi-urban institutions.

• Enforcing workload policies to assign academic work above non-academic tasks during clinical rotations.

Together, these reforms can help standardize the quality of nursing education across regions and foster a more equitable and capable future workforce.

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