CLINICAL COMPETENCE IN BSN STUDENTS: AN EXPLORATION OF PREDICTED FACTORS

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ABSTRACT

BSN education relies on clinical competency a blend of knowledge, skills, and attitudes essential for safe and effective patient care; however, inadequate clinical training, poor instructional methods, psychological stress, and insufficient institutional support often hinder the development of this competency. Nursing schools must rapidly produce competent nurses by fostering supportive learning environments, optimizing teaching resources, and effectively integrating theory with practice. This study employed a descriptive cross-sectional design to assess factors affecting clinical competency among 212 4th-year BSN students from four prominent nursing colleges in Islamabad (Rawal College of Nursing, Nova Institute of Medical Sciences, Pak-Institute, and College of nursing PIMS). Data were collected using a pre-validated questionnaire comprising 24 closed-ended items divided into four subscales clinical environment, clinical instructor factors, self-assessment, and staff-student interactions—and supplemented by focus group discussions. Data analysis was performed using SPSS 27 with univariate statistics and bivariate logistic regression ($p < 0.05$) to compute crude and adjusted odds ratios, while potential confounders were rigorously controlled. The results revealed that only 35.9% of participants were clinically competent, with significant deficiencies in supervision, constructive feedback, and effective orientation, as well as limited exposure to diverse clinical cases. Structural barriers, such as insufficient placements and inadequate structured assessments, emerged as primary obstacles. To improve competency, recommendations include enhancing instructor training, optimizing placements with greater case diversity and ward availability, revising orientation programs to better align theory with practice, and implementing systematic evaluations using continuous assessments and checklists.

Keywords: *clinical competency, BSN students, nursing education, theory-practice gap, clinical training.*

INTRODUCTION

BSN education relies on clinical competency a blend of knowledge, skills, and attitudes to prepare nursing students for safe and effective patient care.[12] However, factors like inadequate clinical training, poor instructional methods, psychological stress, and insufficient institutional support can hinder BSN students' clinical competence development.[8] Nursing

schools must quickly produce safe, competent nurses by fostering supportive learning environments, enhancing study habits, optimizing teaching resources, and encouraging early peer and faculty interaction.[18] The " Novice to Expert" concept developed by Benner is frequently used to explain how nursing students develop their competency.[5] Benner's novice to expert theory provides a systematic way to understand how students, new nurses, or seasoned nurses gain skills and understanding of a practice situation or event over time. [19]

Students attend theoretical courses at the start of the program before being progressively exposed to the clinical scenario. Clinical education is regarded as a crucial and vital part of the nursing education program.[16] In their second year, nursing students begin clinical rotations across a wide range of units including outpatient, medical, surgical, pediatric, delivery, gynecology, prenatal/postnatal, immunization, intensive care, oncology, emergency, and family planning to gain comprehensive hands-on experience.[10] Even after completing the curriculum, some BSN students struggle clinically raising concerns among educators and underscoring the need to pinpoint key factors to boost real-world readiness.[11] A robust learning environment is crucial for academic success, yet nursing students' performance suffers from instructor shortages, poor facilities, and budget constraints.[12] In competency-based education, students must master core concepts and skills by meeting set competencies, ensuring they acquire the essential abilities for success.[17] Modern preregistration nursing education emphasizes cultivating confident, critical thinkers who can lead and engage in meaningful dialogue.[6]

Evidence shows that some practicing and new graduate nurses lack clinical competency, making it critical to strengthen their skills to ensure quality care and positive outcomes. [15] When nursing students recognize their clinical competency, they more effectively complete assignments, assess their strengths and weaknesses, and become more competitive academically.[13] The ultimate aim of nursing education is to achieve clinical competence, which includes problem-solving, communication, technical skills, and the effective use of knowledge.[19] After comprehensive theoretical and practical training, students are expected to reach peak clinical competence by program's end, with professional nurses playing a crucial role in their development.[14] Clinical training is the cornerstone of nursing practice; students should perform procedures in hospitals with staff support to build accountability, independence, and responsibility.[2] Researches currently available indicates that a variety of factors impact BSN students' development of clinical abilities.[9] These studies frequently emphasize how crucial it is to obtain practical experience during clinical practice.[7]

Methodology

This study was conducted among fourth-year BSN generic students from four top nursing schools Rawal College of Nursing, Nova Institute of Medical Sciences, Pak-Institute, and College of Nursing PIMS selected for their rigorous academic and clinical training programs. These schools offer strong theoretical foundations as well as practical, real-world clinical experiences to prepare students for a dynamic healthcare environment. Islamabad is the capital of Pakistan, known for its modern infrastructure, diverse population, and state-of-the-art healthcare facilities. In order to evaluate clinical competencies, identify gaps, and comprehend factors influencing their readiness for practice, a crucial time when students move from classroom instruction to full clinical immersion. This was done through focus groups and thorough surveys. A descriptive cross-sectional design was used, and representative selection was ensured by simple random sampling. The sample size was established using the formula $n = N/1+Ne^2$. A pre-validated English questionnaire with 24 closed-ended items divided into four subscales clinical environment, clinical instructor factors, self-assessment, and staff-student interactions was used to collect quantitative data. All data were validated before analysis, and quality was guaranteed via pre-tested questionnaires and two days of training for data collectors.

Data Analysis:
Data were analyzed using SPSS 27, univariate statistics described questionnaire attributes (frequency distributions and percentages), while bivariate analyses with logistic regression incorporating only variables with ($p < 0.05$) examined relationships between independent and dependent variables. Crude and adjusted odds ratios were computed to quantify these associations, with the findings compared to prior research. Additionally, potential confounders were rigorously controlled to ensure the robustness of the results.

Ethical consideration:
Before data collection, the nursing Ethical Review Board issued authorization and approval letters, and selected colleges received permission to proceed; informed consent ensured that participation was voluntary.

Results
Socio-demographic characteristics of the study participant
The survey achieved a 100% response rate from 212 students, with 166 (78.3%) males and 46 (21.7%) females; nearly all (98.01%) were aged 22–26, and 80.10% reported an educated family background, compared to 18.90% uneducated. Participants came from four nursing colleges in Islamabad: PAK-Institute of Health Sciences (25%), College of Nursing PIMS (36.8%), Nova Institute of Medical Science (14.4%), and Rawal College of Nursing (23.6%). **Table 1**

Table 1 Socio demographic characteristics of the study participant in colleges of Nursing Islamabad, Pakistan(N=212)

| Variables Characteristics	Variables	Frequency	Percentage
Gender	Female	46	21.70%
	Male	166	78.30%
	Total	**212**	**100**
Age In Between 22-26	Yes	210	99.01%
	No	2	0.90%
	Total	**212**	**100**
Semester	7th Semester	151	71.20%
	8th Semester	61	28.80%
	Total	**212**	**100**
Family Education Status	Educated	172	81.10%
	Un-educated	40	18.80%
	Total	**212**	**100**
Previous Healthcare Experience?	Yes	101	47.60%
	No	111	52.40%
	Total	**212**	**100**
College	RCN	50	23.60%
	PIMS	78	36.80%
	NIMS	31	14.40%
	PIHS	53	25.00%
	Total	**212**	**100.00%**

Demographics
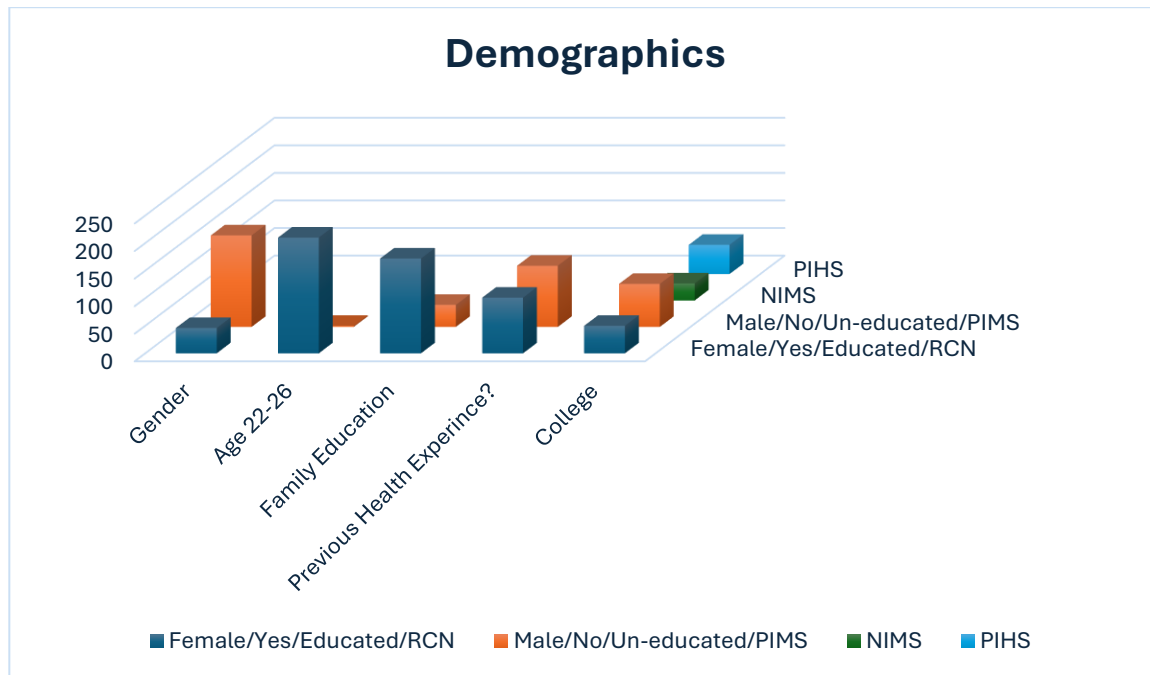
Prevalence of clinical practice competency of study participants

In terms of clinical practice competency, 76 study participants (35.90%) were competent in clinical practice, while 136 (64.10%) were not, out of the 151 (7th semester) students that took part in the study, 51 (34.10%) demonstrated clinical practice competency, whereas 100 (65.90%) did not demonstrated clinical practice competency. From study participant 116 (33.6%) were nurse student, 27 (23.2%) were competent clinically and 89 (76.7%) were not competent over clinical practice (**Table 2**).

Table 2 The Prevalence of clinical practice competency of study participant by Semester in Colleges of Nursing

Semester	Number of Students	Not clinically competent [%]	clinically Competent [%]
7th Semester	151	65.90%	34.10%
8th Semester	61	61.50%	38.50%

Students
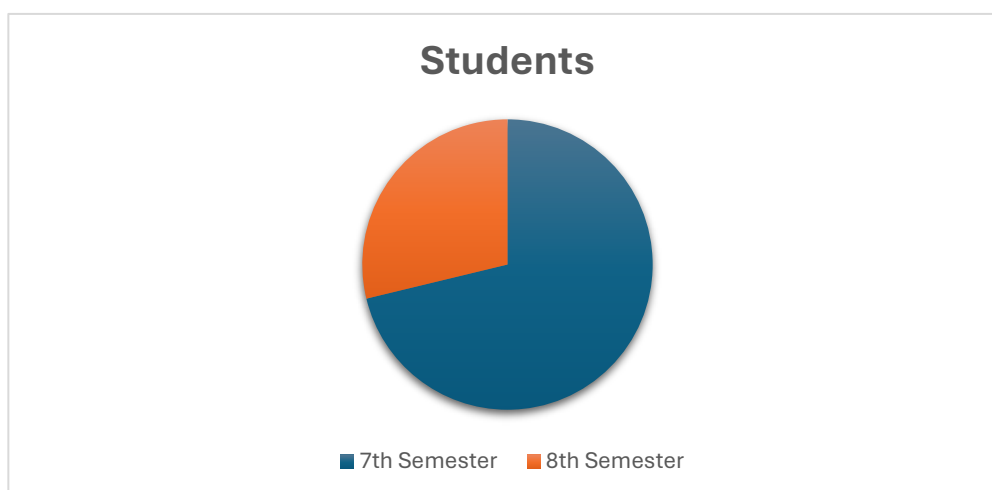
Clinical instructor factors response of study participants

Analysis showed 64.18% disagreed with clinical instructor considerations, while 35.82% agreed; high agreement was noted for providing logbooks (80.19%) and maintaining professional ties (58.49%). However, major concerns were insufficient clinical time

(66.51% disagreement), continuous support (72.64%), diverse learning methods (69.34%), theory-to-practice integration (70.28%), skills demonstration (71.70%), support during procedures (78.30%), and constructive feedback (82.55%), highlighting key areas for improving clinical competency. **(Table 3).**

Table 3 Clinical instructor factors response of study participant in Nursing Colleges of Islamabad, Pakistan

| Clinical instructor Factors	Agree		Disagree	
	No.	%	No.	%
Clinical instructor provides a logbook for documentation	170	80.19	42	19.81
Clinical instructor clearly orients the objective of clinical practice.	103	48.58	109	51.42
Clinical instructor spends enough time on the clinical site.	71	33.49	141	66.51
Clinical instructor continuously follows students during practice.	58	27.36	154	72.64
Clinical instructor uses different learning methods during clinical practice.	65	30.66	147	69.34
Clinical instructor integrates theory into the treatment plan.	63	29.72	149	70.28
Clinical instructor demonstrates skills during practice.	60	28.30	152	71.70
Clinical instructor facilitates inter-professional relationships.	83	39.15	129	60.85
Clinical instructor maintains a professional relationship with students.	124	58.49	88	41.51
Instructor follows and supports students while conducting procedures.	46	21.70	166	78.30
Clinical instructor shows the clinical procedure clearly to students	57	26.89	155	73.11
Clinical instructor provides constructive feedback to students.	37	17.45	175	82.55
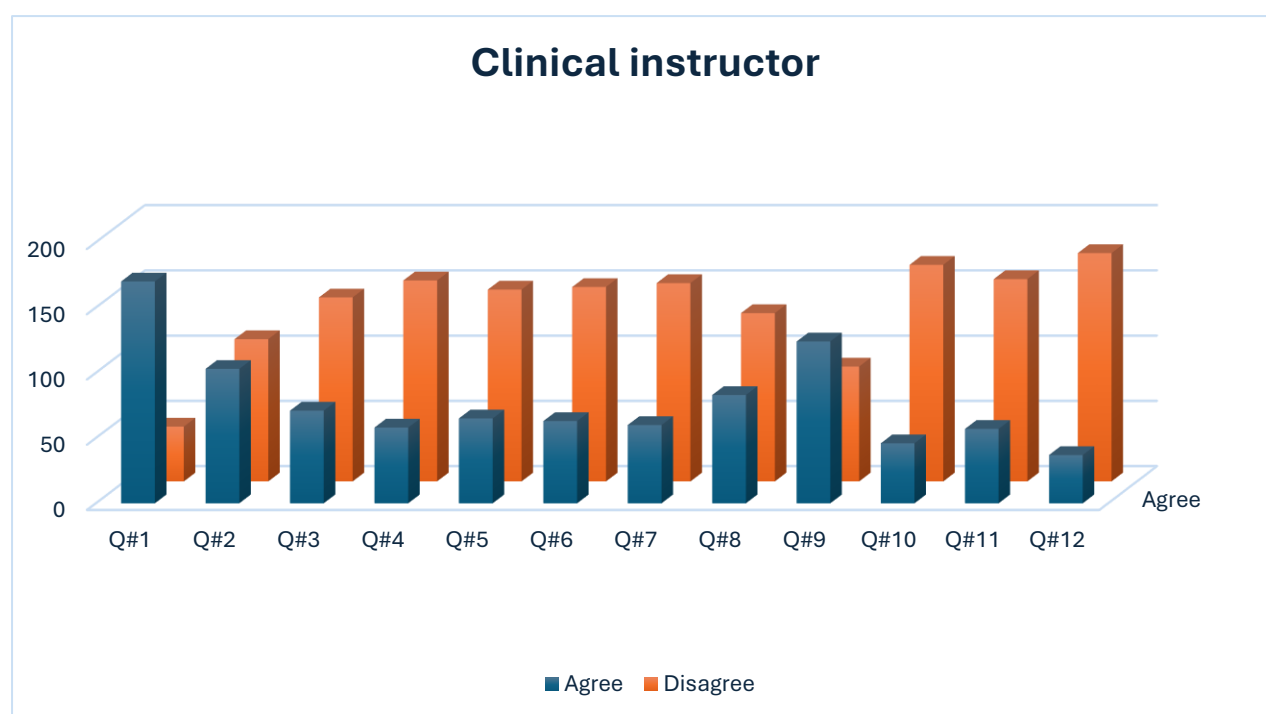
Clinical practice environment factors response of study participants
37.11% of respondents agreed that the clinical practice environment was adequate overall, while 62.89% disagreed; in particular, only 38.21% thought the environment met the practice objectives, 29.25% thought it had enough clinical cases available for practice, and 43.87% thought there were enough wards to support learning. These results indicate that most students are not happy with the clinical environment, which may impede the development of their clinical competency because they are not exposed to a variety of cases. **(Table 4)**

Table 4 Clinical practice environmental factors response of study participant in Nursing Colleges of Islamabad, Pakistan

| Clinical practice environmental factors	Agree		Disagree	
	No.	%	No.	%
Does the clinical practice environment have sufficient cases for practice?	81	38.21	131	61.79
Does the clinical practice environment meet the objectives of clinical practice?	62	29.25	150	70.75
Clinical practice environment has a sufficient number of wards to support learning?	93	43.87	119	56.13

Clinical practice environmental
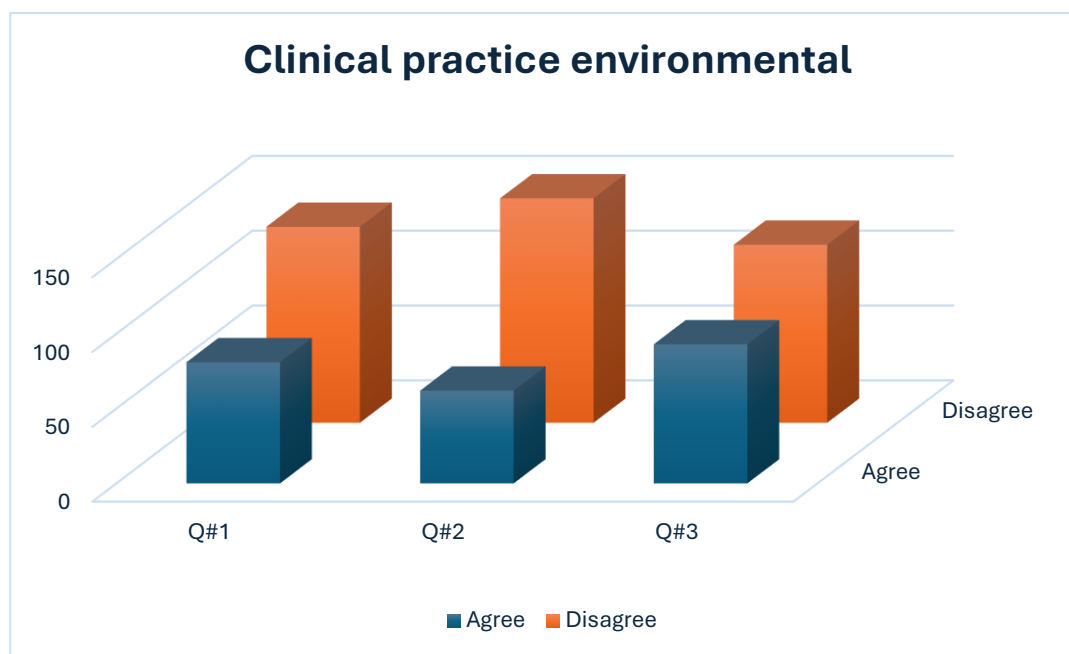
Assessment method factors response of study participants

Overall, 66.50% of respondents were unhappy with the current assessment techniques, while only 33.50% agreed that they are effective. In particular, fewer than half of the participants believed that their clinical practice was impacted by the methods of evaluation (42.45% agree vs. 57.55% disagree) and that their instructors provided them with sufficient instruction on these approaches (45.75% agree vs. 54.25% disagree). Remarkably, just 24.06% of respondents believed that assessments varied to meet various demands, and only 23.11% reported using continuous assessment methods. Just 19.81% of respondents acknowledged the usage of a checklist during evaluations, despite 45.75% believing that the approaches covered the three learning domains (cognitive, psychomotor, and emotional). These results point to important flaws in the assessment procedure that could prevent nursing students from becoming clinically competent. **(Table 5)**

Table 5 Assessment method factors response of study participant in Nursing Colleges of Islamabad, Pakistan

Clinical Assessment Factors	Agree	%	Disagree	%
Does the instructor orient students about assessment methods?	97	45.75%	115	54.25%
Do the assessment methods influence your clinical practice?	90	42.45%	122	57.55%
Does the instructor use continuous assessment methods?	49	23.11%	163	76.89%
Does the instructor make distinctions or variations in assessments?	51	24.06%	161	75.94%
Do the assessment methods address the three domains of learning (cognitive, psychomotor, and affective)?	97	45.75%	115	54.25%
Does the instructor use a checklist during assessments?	42	19.81%	170	80.19%

Clinical Assessment Factors
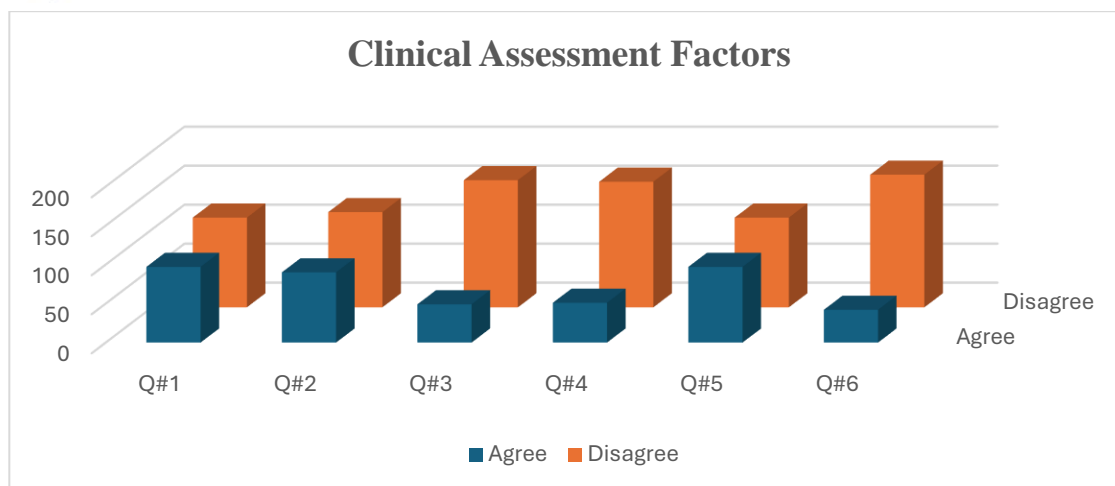
Staff-student interaction factors response of study participants

Only 34.75% of respondents agreed with the student-staff factors in the clinical environment, while 65.25% disagreed. Just 43.40% felt there were sufficient clinical cases, and only 25.94% believed the environment met practice objectives. Moreover, only 34.91% agreed that ward availability was adequate. These gaps may hinder comprehensive hands-on learning, emphasizing the need to address these issues for improved student outcomes. **(Table 6).**

Table 6 Staff-student interaction factor response of study participant in Nursing Colleges of Islamabad, Pakistan

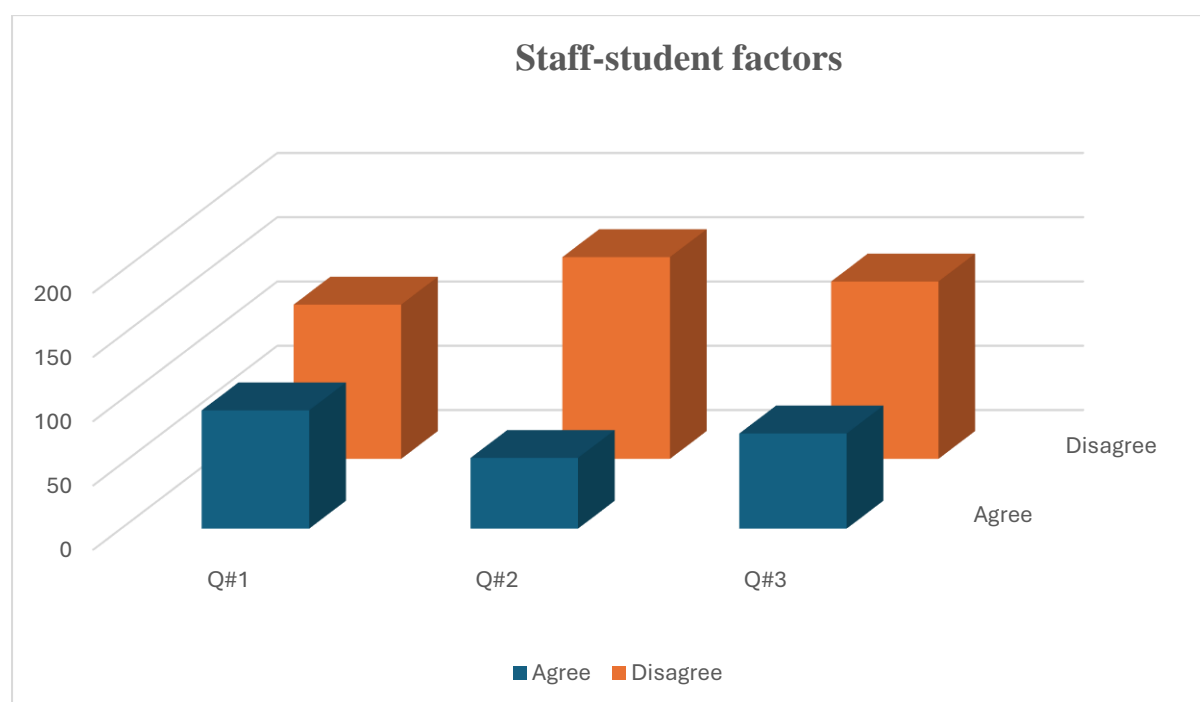| Staff-student factors	Agree		Disagree	
Variables	No.	%	No.	%
Do staff allow students to perform tasks during clinical practice?	92	43.40	120	56.60
Do staff encourage students during clinical practice?	55	25.94	157	74.06
Do staff monitor students during clinical practice?	74	34.91	138	65.09

Staff-student factors

Table 7 Bivariate logistic regression analysis of clinical practice competency factors of study participant Nursing Colleges of Islamabad, Pakistan

Variable	p-value	OR (Exp(B))	95% CI for OR*
Integrate theory into treatment plan	0.465	1.432	0.547 – 3.747
Clinical instructor provides feedback	0.062	2.850	0.947 – 8.581
Clinical instructor supports students	0.653	0.801	0.304 – 2.108
Sufficient clinical cases for practice	**0.030**	**2.916**	**1.107 – 7.680**
Clinical environment meets objectives	0.955	1.027	0.401 – 2.631
Checklist use in assessments	0.335	1.666	0.590 – 4.700
Learning domains addressed	0.056	2.428	0.978 – 6.026
Orientation of clinical objectives	**0.002**	**0.231**	**0.092 – 0.576**

Discussion

Cross-sectional study were carried to assess factors affecting clinical practice competency of BSN Generic Students. The prevalence of clinical practice competency in this study was 35.90%. In a separate investigation [15]reported an overall clinical practice competency rate of 47.0% among students, more than half (64.10%) of students Lacked in clinical a competency in this study. Firstly, **Insufficient Supervision and Feedback**: Over 70% of students reported inadequate instructor follow-up during procedures, lack of constructive feedback (82.55% disagreement), and poor integration of theory into practice (70.28% disagreement). These findings resonate with studies by [8], who identified poor instructional methods as barriers to competency. Benner's "Novice to Expert" theory [5] underscores the need for guided mentorship to transition students from theoretical knowledge to practical expertise, which is compromised without active instructor involvement. Secondly, **Orientation to Clinical Objectives:** While orientation was significantly associated with competency (OR = 0.231, p = 0.002), the inverse odds ratio suggests potential issues in how orientations are conducted. For instance, if orientations are superficial or misaligned with clinical realities, they may fail to prepare students effectively, echoing, [11] who noted gaps in translating classroom learning to real-world practice. Thirdly, **Limited Exposure to Diverse Cases:** Only 29.25% of students felt the clinical environment met practice objectives, and 61.79% reported insufficient clinical cases. This aligns with [12], who emphasized that institutional constraints (e.g., overcrowded wards, scarce resources) hinder hands-on

learning. Without exposure to varied cases, students cannot develop the adaptability required for competent practice.[2] Additionally, **Lack of Structured Evaluations**: Few students reported the use of checklists (19.81%) or continuous assessments (23.11%), critical for competency-based education, this relates with the factor in study.[17] One of the key factors in the study is, **Restricted Hands-On Opportunities:** Over 56% of students were seldom allowed to perform tasks independently, stifling skill development. This contradicts the recommendations of [14] who stressed that clinical autonomy builds accountability and confidence. Poor staff engagement reflects systemic issues, such as understaffing or lack of training in mentorship, as noted by [6] The **low competency rate (35.9%)** relates with findings (33.6%) [10] , suggesting systemic gaps in nursing education across resource-constrained settings. Both studies highlight clinical instructor support and environmental adequacy as pivotal. However, unlike studies emphasizing psychological stress [8] this study identified structural factors (e.g., assessment methods, staff-student dynamics) as primary barriers. The unexpected association between orientation and competency (OR < 1) may reflect ineffective orientation design. For example, if orientations focus on abstract objectives rather than practical skills, they may fail to prepare students for clinical demands, a concern raised by [16].

Strengths and Limitations of the Study

In this study, all of the quantitative study's questions were closed-ended, data collectors were trained, questionnaires were evaluated and any necessary adjustments made, and

clearly defined inclusion and exclusion criteria were created throughout the design phase and prior to study implementation. In order to prevent selection bias, random sampling techniques were used to choose the study participants.

There are various restrictions on this study. Because the cross-sectional design makes it impossible to establish temporal correlations between variables, it restricts the ability to draw conclusions about causality. Reliance on self-reported data may also result in response bias because of recall errors or social desirability.

Conclusion

According to this study, just 35.9% of Islamabad's fourth-year BSN students are clinically competent, and there are notable shortcomings in staff-student relations, evaluation techniques, environmental suitability, and clinical instructor support. The main obstacles to integrating theory into practice were found to be structural, including insufficient supervision, a lack of exposure to a variety of clinical problems, and inefficient orientation programs. These results are consistent with global studies on systemic issues in nursing education, especially in environments with limited resources.

Recommendation

• Through continuous professional growth centered on efficient mentoring, prompt feedback, and observable clinical abilities, clinical teacher training should be intensified.

• To better match theoretical goals with real-world clinical situations, orientation programs should be redesigned. Increase exposure to a variety of situations and make sure there are enough wards available to maximize clinical placements.

• Use organized assessment techniques, such as regular checklist uses and ongoing assessments, to precisely track competency progress.

• By creating official mentorship programs and improving clinical supervisor training, you can improve staff-student relationships.

Improve infrastructure and provide fiscal support to address more general systemic problems including understaffing and resource constraints.

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