

Original Article

Anticipatory Preparedness for Transition to Professional Practice Among Final-Year Nursing Students: A Multicenter Cross-Sectional Study in Pakistan

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ABSTRACT

Background: Transition from nursing education to professional practice requires academic preparation, clinical competence, and organizational support, yet evidence regarding anticipatory preparedness among Pakistani nursing students remains limited. **Objective:** To assess perceived anticipatory preparedness among final-year BSN students and compare Role Preparation, Role Competence, and Organization and Support across institutions and between government- and private-sector settings. **Methods:** This analytical multicentre cross-sectional study included 403 final-year BSN students from six nursing institutions in Lahore, Pakistan, representing 79.5% of 507 eligible students. Preparedness was assessed using the Perceptions and Expectations of Role Transition Questionnaire. Kruskal–Wallis tests compared institutions, Mann–Whitney U tests compared sectors, and multiple linear regression examined age and sex. **Results:** Overall, 65.3% reported being adequately prepared for registered-nurse responsibilities, whereas 54.8% expected an unproblematic transition. Role Preparation did not differ across institutions ($H=7.914$, $p=0.161$, $\epsilon^2=0.02$), while Role Competence ($H=35.263$, $p<0.001$, $\epsilon^2=0.09$) and Organization and Support ($H=64.992$, $p<0.001$, $\epsilon^2=0.16$) differed significantly. Government-sector students had higher ranks for Role Competence ($U=14,709.5$, $p<0.001$, $r=0.21$) and Organization and Support ($U=11,746.0$, $p<0.001$, $r=0.34$). **Conclusion:** Preparedness varied across dimensions and institutional settings, with perceived competence and organizational support differing particularly by sector. **Keywords:** anticipatory preparedness; nursing students; transition to practice; nursing education; role competence; organizational support; Pakistan.

INTRODUCTION

The transition from nursing student to registered nurse represents a critical stage of professional development in which graduates are expected to assume greater responsibility for independent decision-making, patient care, workload management, interprofessional communication, and adaptation to the organizational demands of clinical practice (1–3). Preparedness for this transition extends beyond acquisition of theoretical knowledge and involves students' perceptions of their readiness to assume professional responsibilities, apply clinical competencies,

manage competing demands, and function effectively within healthcare teams (3–5). Adequate preparation before graduation is therefore important for supporting safe entry into practice and reducing difficulties associated with the early professional transition (6,7).

Several theoretical perspectives provide a framework for understanding this transition. Duchscher's Transition Shock Theory describes the initial movement from the relatively structured educational environment into professional nursing practice as a period characterized by role adjustment, increased responsibility, and potential psychological and professional disequilibrium (8). Benner's Novice-to-Expert framework similarly proposes that students and newly qualified nurses typically function at an advanced-beginner stage, in which theoretical knowledge and previous clinical encounters provide a foundation for practice but contextual judgment, prioritization, and independent decision-making continue to develop through experience (9). Meleis's Transitions Theory further emphasizes that successful professional transition is influenced by interacting personal, educational, and environmental conditions, including preparation, competence, communication, and organizational support (10). Together, these perspectives suggest that readiness for professional nursing practice should be considered as a multidimensional construct incorporating preparation for the professional role, perceived competence, and anticipated support within the clinical environment.

Evidence from previous studies indicates that nurses who enter practice with stronger perceptions of preparedness and work readiness may adapt more effectively to their professional roles and experience more favorable work-related outcomes (11,12). Nevertheless, international research continues to identify a theory-practice gap among undergraduate and newly graduated nurses. Students frequently report uncertainty when required to translate theoretical learning into complex clinical situations, particularly in relation to prioritizing care, managing workload, exercising independent judgment, and assuming responsibility for patient care (1–3,13,14). Although undergraduate education can provide substantial knowledge and supervised clinical experience, confidence in applying this learning independently may vary according to the quantity and quality of clinical exposure and opportunities to participate in real-world decision-making (3,13).

Professional readiness is also influenced by the organizational environment into which students expect to transition. Constructive feedback, supportive supervision, structured orientation, effective communication, and positive relationships with experienced nurses can facilitate professional adjustment and strengthen confidence among students and newly graduated nurses (1,2,15). Conversely, limited clinical exposure or insufficient supervisory support may contribute to uncertainty about professional responsibilities despite adequate academic preparation. These observations are particularly relevant when students receive clinical education across institutions that differ in organizational structure, patient populations, available resources, supervisory arrangements, and opportunities for clinical participation.

In Pakistan, Bachelor of Science in Nursing programmes are delivered across public and private educational institutions linked with clinical settings that may differ considerably in resources, patient exposure, supervision, and organizational structure. However, empirical evidence concerning how final-year Pakistani nursing students perceive their preparedness immediately before entering professional practice remains limited. Previous local work has examined anticipatory preparedness among final-year nursing students and has highlighted the relevance of educational preparation and expectations regarding professional transition (16). Nevertheless, evidence comparing multiple institutions and examining whether perceived role preparation, role competence, and organizational support vary across institutional and public-private settings remains insufficient. This limits understanding of whether students nearing graduation experience broadly similar levels of preparedness or whether important institutional differences are present.

Accordingly, the present analytical cross-sectional study aimed to assess anticipatory preparedness for transition to professional practice among final-year BSN students enrolled in six nursing institutions in Lahore, Pakistan. Specifically, the study examined students' perceived role preparation, role competence, and anticipated organizational support; compared these domains across the participating institutions; and evaluated differences between government-sector and private-sector institutions. The study addressed whether perceived preparedness differed across institutions and sectors and whether students in government-sector institutions reported different levels of role competence and organizational support from students in private-sector institutions. It was hypothesized that perceived role competence and organizational support would vary

significantly among the six institutions and that students in government-sector institutions would report higher scores in these domains than students in private-sector institutions.

MATERIAL AND METHODS

An analytical multicenter cross-sectional study was conducted among final-year Bachelor of Science in Nursing (BSN) students enrolled in six nursing institutions in Lahore, Pakistan, between November 2025 and January 2026. The cross-sectional design was selected to assess students' perceived anticipatory preparedness for transition to professional nursing practice at a defined point near completion of their undergraduate education and to compare preparedness across institutions and between government- and private-sector settings. The study was reported in accordance with the principles of the Strengthening the Reporting of Observational Studies in Epidemiology framework. The participating institutions comprised Lahore School of Nursing, Bahria Town School of Nursing, Shalamar College of Nursing, Jinnah Hospital College of Nursing, Sheikha Fatima Institute of Nursing and Health Sciences, and Government Teaching Hospital Shahdara. The target population consisted of final-year Generic BSN students who had completed the major theoretical and clinical components of their programme and were approaching transition into professional practice.

A census-based recruitment strategy was used within the six participating institutions because the accessible population of eligible final-year students was finite and could be approached in its entirety. A total of 507 students met the eligibility criteria and were invited to participate; therefore, no probability sample was drawn from the accessible population. Of these, 403 students provided complete and valid responses and constituted the final analytical sample, corresponding to a response rate of 79.5%. The remaining 104 eligible students were not included because 61 were absent during the data-collection period and 43 submitted incomplete questionnaire responses. Inviting the complete accessible population was intended to maximize institutional representation and reduce sampling error for comparisons among the participating institutions. Nevertheless, the possibility of non-response bias remained because students who were absent or did not provide complete questionnaires could have differed systematically from respondents in their perceptions of preparedness.

Data were collected using the Perceptions and Expectations of Role Transition Questionnaire developed by Deasy et al., an instrument designed to assess students' perceptions and expectations during transition from student to registered nurse (17). Written permission to use the questionnaire was obtained before data collection. Previous psychometric evaluation of the original instrument reported strong overall internal consistency, with a Cronbach's alpha of 0.97 (17). A previous study conducted in the Pakistani context using a modified form of the instrument reported a Content Validity Index of 0.85 for item clarity and 0.95 for item relevance, with an overall Cronbach's alpha of 0.94 (16). In the present study, internal consistency was reassessed using the collected data. Cronbach's alpha was 0.718 for the overall scale, while domain-specific coefficients were 0.514 for Role Preparation, 0.590 for Role Competence, and 0.636 for Organization and Support.

The instrument was administered as a 28-item questionnaire organized into three conceptually defined domains: Role Preparation, Role Competence, and Organization and Support. The reported domain structure comprised seven Role Preparation items, eight Role Competence items, and 13 Organization and Support items. Each item was rated on a five-point Likert scale ranging from 1, "Strongly Disagree," to 5, "Strongly Agree." Negatively worded items were reverse coded before domain-level analyses so that higher scores consistently reflected more favorable perceptions of preparedness, competence, or organizational support. Continuous domain scores derived from the constituent Likert responses were retained for inferential analyses to preserve the ordinal response information and avoid unnecessary loss of variability. For descriptive presentation at the item level, responses were additionally classified as agreement versus non-agreement by combining "Strongly Agree" and "Agree" responses into an agreement category and presenting Neutral and disagreement responses separately. Item-level agreement proportions and corresponding 95% confidence intervals were used to describe the distribution of responses but were not treated as validated diagnostic thresholds for overall preparedness.

Participants completed the questionnaire either in paper form or through a secure electronic platform. To minimize duplicate participation when using two modes of administration, each consenting participant was assigned a unique anonymized identification code that was cross-referenced during data collection. Electronic responses were exported to an encrypted, password-protected database and were restricted to one submission per participant code. Paper questionnaires were entered manually using double-entry procedures to reduce

transcription errors and were stored in locked, access-restricted cabinets. No directly identifying personal information was included in the analytical dataset. These procedures were used to strengthen data quality, maintain confidentiality, and reduce the likelihood of duplicate or erroneous records.

The principal study outcomes were the three preparedness domains: Role Preparation, Role Competence, and Organization and Support. Role Preparation reflected students' perceptions of academic and professional preparation for assuming a registered-nurse role; Role Competence reflected self-perceived confidence in professional and clinical responsibilities such as ethical decision-making, communication, prioritization, workload management, and delegation; and Organization and Support represented expected or perceived support, feedback, communication, orientation, and professional recognition within the clinical work environment. The main explanatory grouping variables were individual nursing institution and institutional sector, categorized as government or private. Demographic characteristics included age and gender. For institutional-sector analyses, students from Jinnah Hospital College of Nursing, Sheikh Fatima Institute of Nursing and Health Sciences, and Government Teaching Hospital Shahdara comprised the government-sector group, while students from Lahore School of Nursing, Bahria Town School of Nursing, and Shalamar College of Nursing comprised the private-sector group.

Data were cleaned and analyzed using IBM SPSS Statistics version 27. Descriptive analyses summarized demographic characteristics using frequencies and percentages, while questionnaire items were summarized using response-category percentages and agreement proportions. Distributional assumptions for the continuous preparedness-domain scores were examined using the Kolmogorov-Smirnov and Shapiro-Wilk tests. Because the domain scores did not satisfy parametric distributional assumptions, non-parametric procedures were used for the primary institutional comparisons. Differences in Role Preparation, Role Competence, and Organization and Support across the six institutions were evaluated using the Kruskal-Wallis H test. When an overall institutional difference was statistically significant, post hoc pairwise comparisons were performed with Bonferroni adjustment to control inflation of the family-wise type I error rate. Government- and private-sector institutions were compared using the Mann-Whitney U test.

Effect sizes were calculated to complement statistical significance testing and to quantify the magnitude of observed group differences. For Mann-Whitney U analyses, the effect-size statistic r was calculated as the absolute standardized Z statistic divided by the square root of the total number of observations. For Kruskal-Wallis analyses, an epsilon-squared effect estimate was derived from the H statistic relative to the analytical sample size. All inferential tests were two-sided, and a p-value below 0.05 was considered statistically significant. Bonferroni-adjusted p-values were used when interpreting post hoc institutional comparisons.

Multiple linear regression analyses were additionally performed to examine whether demographic characteristics were associated with each of the three preparedness-domain outcomes after simultaneous consideration of age and gender. Separate models were constructed for Role Preparation, Role Competence, and Organization and Support. Before regression analysis, residual normality was examined using normal probability plots, homoscedasticity was evaluated through plots of standardized residuals, and multicollinearity was assessed using variance inflation factors, with values below 5 considered acceptable. Model fit was summarized using the coefficient of determination and F statistic, while unstandardized coefficients, standard errors, standardized beta coefficients, t statistics, and p-values were reported for individual predictors. These adjusted analyses were intended to determine whether age or gender accounted for additional variation in preparedness beyond the unadjusted institutional comparisons rather than to establish causal relationships.

Questionnaires that did not meet the study's completeness requirements were excluded before formation of the final analytical dataset. Subsequent missing observations were handled using listwise deletion for the relevant statistical analyses. The final primary analyses were based on the 403 complete and valid participant records. Statistical findings were interpreted as associations because the cross-sectional design did not permit determination of temporal or causal relationships between institutional characteristics, demographic factors, and perceived preparedness.

Ethical approval was obtained from the Institutional Review Board of the University of Lahore under reference number UOL/IREB/25/15/04/69. The study was conducted in accordance with institutional ethical requirements and the principles of the Declaration of Helsinki. Written informed consent was obtained from all participants

before questionnaire completion. Participation was voluntary, anonymized identification codes were used in place of personal identifiers, and collected data were stored securely with access restricted to the research team.

RESULTS

Of the 507 final-year BSN students identified across the six participating institutions, 403 provided complete and valid responses and were included in the analysis, corresponding to a response rate of 79.5%. The final sample comprised 248 females (61.5%) and 155 males (38.5%).

Most participants were aged 20–23 years (271/403, 67.2%), while 130 (32.3%) were aged 24–27 years and two (0.5%) were aged 28–31 years. All participants were enrolled in the Generic BSN programme and reported prior clinical experience. Government-sector institutions contributed 242 participants (60.0%), while 161 (40.0%) were from private-sector institutions.

Item-level responses indicated generally favorable perceptions of Role Preparation, although the strength of agreement varied across individual components. The highest agreement was reported for having opportunities to develop skills required of a registered nurse, with 338 participants (83.9%; 95% CI 80.3–87.5) agreeing with this statement. Course content was considered relevant to the future nursing role by 322 participants (79.9%; 95% CI 76.0–83.8). In contrast, 263 participants (65.3%; 95% CI 60.7–69.9) reported feeling adequately prepared to take up a registered-nurse position, and 221 (54.8%; 95% CI 49.9–59.7) expected their transition into practice to be unproblematic.

Perceived Role Competence was also generally favorable. Confidence in ethical nursing decision-making had the highest level of agreement, reported by 344 participants (85.4%; 95% CI 82.0–88.8), followed by prioritization of care delivery in 335 (83.1%; 95% CI 79.4–86.8) and patient and family education in 334 (82.9%; 95% CI 79.2–86.6). Agreement was comparatively lower for workload management, reported by 302 participants (74.9%; 95% CI 70.7–79.1), and delegation of patient care, reported by 301 (74.7%; 95% CI 70.5–78.9).

Footnote: Role Preparation model: $R^2 = 0.002$, $F(2,400) = 0.499$, $p = 0.607$. Role Competence model: $R^2 = 0.017$, $F(2,400) = 3.507$, $p = 0.031$. Organization and Support model: $R^2 = 0.017$, $F(2,400) = 3.533$, $p = 0.030$. Models included age category and sex simultaneously. The 95% confidence intervals for B were derived from the reported coefficients and standard errors using $df = 400$.

Across items assessing Organization and Support, agreement generally ranged from approximately two-thirds to three-quarters of participants. The highest agreement was observed for anticipated support from clinical nurse managers, reported by 305 participants (75.7%; 95% CI 71.5–79.9), followed by support from the multidisciplinary team in 304 (75.4%; 95% CI 71.2–79.6). Support from registered nurses was endorsed by 301 participants (74.7%; 95% CI 70.5–78.9). Lower agreement was reported for feeling respected and for having one's contribution to the multidisciplinary team valued, each reported by 273 participants (67.7%; 95% CI 63.1–72.3).

Kruskal–Wallis analyses showed no evidence of an institutional difference in Role Preparation scores, $H(5) = 7.914$, $p = 0.161$, $\epsilon^2 = 0.02$. In contrast, Role Competence differed across the six institutions, $H(5) = 35.263$, $p < 0.001$, $\epsilon^2 = 0.09$, as did Organization and Support, $H(5) = 64.992$, $p < 0.001$, $\epsilon^2 = 0.16$.

Bonferroni-adjusted post hoc comparisons for Role Competence identified differences involving Bahria Town School of Nursing compared with Shalamar College, Jinnah Hospital, SFINHS, and Government Teaching Hospital Shahdara, with adjusted p-values ranging from 0.002 to <0.001 . Lahore School of Nursing also differed from Government Teaching Hospital Shahdara (adjusted $p = 0.015$). For Organization and Support, SFINHS and Government Teaching Hospital Shahdara differed from several other participating institutions, with adjusted p-values ranging from 0.010 to <0.001 .

Table 1. Participant characteristics and institutional distribution (N = 403)

Characteristic	Category	n (%)
Age, years	20–23	271 (67.2)
	24–27	130 (32.3)
	28–31	2 (0.5)
Gender	Male	155 (38.5)
	Female	248 (61.5)

Characteristic	Category	n (%)
Programme	Generic BSN	403 (100.0)
Prior clinical experience	Yes	403 (100.0)
Institution	Lahore School of Nursing	64 (15.9)
	Bahria Town School of Nursing	40 (9.9)
	Shalamar College of Nursing	57 (14.1)
	Jinnah Hospital College of Nursing	76 (18.9)
	Sheikha Fatima Institute of Nursing and Health Sciences	84 (20.8)
	Government Teaching Hospital Shahdara	82 (20.3)
Institution sector	Government	242 (60.0)
	Private	161 (40.0)

Footnote: BSN, Bachelor of Science in Nursing. Government/private totals were derived from the reported institutional frequencies.

Table 2. Item-level agreement for Role Preparation (N = 403)

Item	Statement	Agree, n (%)	95% CI for agreement (%)
Q5A	I am adequately prepared for taking up a post as a registered nurse	263 (65.3)	60.7–69.9
Q5B	Course content relevant to my future role	322 (79.9)	76.0–83.8
Q5C	Opportunity to develop skills required of RN	338 (83.9)	80.3–87.5
Q5D	Sufficient opportunities to develop management skills	292 (72.5)	68.1–76.9
Q5E	Opportunity to discuss the transition	299 (74.2)	69.9–78.5
Q5G	I expect the transition will be unproblematic	221 (54.8)	49.9–59.7

Footnote: RN, registered nurse. Agreement combines Agree and Strongly Agree responses. Counts were derived from the reported agreement proportions and N = 403.

Table 3. Item-level agreement for Role Competence (N = 403)

Item	Statement	Agree, n (%)	95% CI for agreement (%)
Q8A	I feel competent in my ability to make ethical nursing decisions	344 (85.4)	82.0–88.8
Q8B	I am competent in providing relevant health information to clients/patients and families	316 (78.4)	74.4–82.4
Q8C	I am competent in educating clients/patients and families regarding health issues	334 (82.9)	79.2–86.6
Q8D	I work effectively within a multi/interdisciplinary team	315 (78.2)	74.2–82.2
Q8E	I have good time management skills	319 (79.2)	75.2–83.2
Q8F	I am confident that I can successfully manage my workload	302 (74.9)	70.7–79.1
Q8G	I am proficient in prioritizing care delivery	335 (83.1)	79.4–86.8
Q8H	I will feel/feel confident delegating aspects of patient care to colleagues	301 (74.7)	70.5–78.9
Q8I	I have effective interpersonal skills	311 (77.2)	73.1–81.3

Footnote: Agreement combines Agree and Strongly Agree responses. Counts were derived from the reported agreement proportions and N = 403.

Table 4. Item-level agreement for Organization and Support (N = 403)

Item	Statement	Agree, n (%)	95% CI for agreement (%)
Q19A	I will feel/feel respected	273 (67.7)	63.1–72.3
Q12A	I will/do receive constructive feedback from preceptor	289 (71.7)	67.3–76.1
Q12B	I will be/am supported by preceptor	290 (72.0)	67.6–76.4
Q13A	I will be/am supported by registered nurses in the ward/unit	301 (74.7)	70.5–78.9
Q13B	I will be/am supported by the CNM(s) in the ward/unit	305 (75.7)	71.5–79.9
Q13C	I will be/am supported by the multidisciplinary team	304 (75.4)	71.2–79.6
Q13D	I will/do receive constructive feedback from registered nurses on the ward/unit	292 (72.5)	68.1–76.9
Q13E	I will/do receive constructive feedback from the CNM(s)	288 (71.5)	67.1–75.9
Q15	My contribution to the nursing team will be/is valued	300 (74.4)	70.2–78.6
Q16	My contribution to the multidisciplinary team will be/is valued	273 (67.7)	63.1–72.3
Q17	I will be/am facilitated to introduce new evidence-based initiatives	292 (72.5)	68.1–76.9
Q18A	There will be/is open and supportive communication channels in the ward/unit where I work	282 (70.0)	65.5–74.5
Q18B	There will be/is open and supportive communication channels in the hospital/organisation where I work	283 (70.2)	65.7–74.7
Q19B	Working hours will be/are flexible	276 (68.5)	64.0–73.0
Q19C	I will be/was orientated to the ward/unit	292 (72.5)	68.1–76.9

Footnote: CNM, Clinical Nurse Manager. Agreement combines Agree and Strongly Agree responses. Counts were derived from the reported agreement proportions and N = 403.

Table 5. Comparison of preparedness domains across six nursing institutions

Domain	N	Kruskal–Wallis H	df	p-value	ϵ^2
Role Preparation	403	7.914	5	0.161	0.02
Role Competence	403	35.263	5	<0.001	0.09
Organization and Support	403	64.992	5	<0.001	0.16

Footnote: Kruskal–Wallis H test. ϵ^2 , epsilon-squared effect-size estimate.

Table 6. Bonferroni-adjusted pairwise institutional comparisons

Domain	Institutional comparison	Test statistic	SE	Adjusted p-value
Role Competence	Bahria Town vs Shalamar College	-91.507	23.575	0.002
	Bahria Town vs Jinnah Hospital	-94.064	22.327	<0.001
	Bahria Town vs SFINHS	-98.496	21.957	<0.001
	Bahria Town vs Government Teaching Hospital Shahdara	-118.861	22.043	<0.001
	Lahore School of Nursing vs Government Teaching Hospital Shahdara	-62.878	19.064	0.015
Organization and Support	SFINHS vs Shalamar College	-115.75	19.89	<0.001
	Government Teaching Hospital Shahdara vs Shalamar College	-117.24	19.98	<0.001
	SFINHS vs Lahore School of Nursing	-99.90	19.23	<0.001
	Government Teaching Hospital Shahdara vs Lahore School of Nursing	-101.38	19.33	<0.001
	SFINHS vs Bahria Town	-75.72	22.26	0.010
	Government Teaching Hospital Shahdara vs Bahria Town	-77.21	22.35	0.008
	SFINHS vs Jinnah Hospital	-63.70	18.34	0.008
	Government Teaching Hospital Shahdara vs Jinnah Hospital	-65.18	18.45	0.006

Footnote: SFINHS, Sheikh Fatima Institute of Nursing and Health Sciences. p-values are Bonferroni adjusted.

Table 7. Comparison of preparedness domains between government- and private-sector institutions

Domain	Sector	n	Mean rank	Sum of ranks	Mann-Whitney U	Z	p-value	r
Role Preparation	Government	242	209.03	50,585.50	17,779.50	-1.512	0.130	0.08
	Private	161	191.43	30,820.50				
Role Competence	Government	242	221.72	53,655.50	14,709.50	-4.246	<0.001	0.21
	Private	161	172.36	27,750.50				
Organization and Support	Government	242	233.96	56,619.00	11,746.00	-6.787	<0.001	0.34
	Private	161	153.96	24,787.00				

Footnote: Mann-Whitney U test. Effect size $r = |Z|/\sqrt{N}$, with $N = 403$.

Table 8. Multiple linear regression models for preparedness domains

Outcome	Predictor	B	SE	95% CI for B	β	t	p-value
Role Preparation	Sex	-0.031	0.034	-0.098 to 0.036	-0.047	-0.927	0.355
	Age category	0.006	0.034	-0.061 to 0.073	0.009	0.186	0.853
Role Competence	Sex	0.020	0.025	-0.029 to 0.069	0.041	0.801	0.423
	Age category	0.066	0.025	0.017 to 0.115	0.133	2.632	0.009
Organization and Support	Sex	-0.016	0.023	-0.061 to 0.029	-0.035	-0.693	0.489
	Age category	0.056	0.024	0.009 to 0.103	0.120	2.381	0.018

When institutions were grouped by sector, Role Preparation did not differ between government and private institutions ($U = 17,779.50$, $Z = -1.512$, $p = 0.130$, $r = 0.08$). Government-sector students had higher mean ranks for Role Competence than private-sector students (221.72 vs 172.36), with $U = 14,709.50$, $Z = -4.246$, $p < 0.001$ and $r = 0.21$. The largest sector-level difference was observed for Organization and Support, for which government-sector students had a mean rank of 233.96 compared with 153.96 among private-sector students ($U = 11,746.00$, $Z = -6.787$, $p < 0.001$, $r = 0.34$).

In the multivariable models, age category and sex together explained little variation in the three preparedness domains. The Role Preparation model was not statistically significant, $R^2 = 0.002$, $F(2,400) = 0.499$, $p = 0.607$, and neither sex nor age category was independently associated with Role Preparation. The Role Competence model accounted for 1.7% of the variance, $R^2 = 0.017$, $F(2,400) = 3.507$, $p = 0.031$. Age category was positively associated with Role Competence ($B = 0.066$, 95% CI 0.017–0.115; $\beta = 0.133$; $p = 0.009$), whereas sex was not associated with the outcome. Similarly, the Organization and Support model explained 1.7% of the variance, $R^2 = 0.017$, $F(2,400) = 3.533$, $p = 0.030$. Age category was positively associated with Organization and Support ($B = 0.056$, 95% CI 0.009–0.103; $\beta = 0.120$; $p = 0.018$), while sex was not independently associated with this domain.

DISCUSSION

The present study found that final-year BSN students generally reported favorable perceptions of preparation and competence for professional practice, although confidence was less pronounced for the anticipated transition itself and for responsibilities such as workload management and delegation. Perceived Role Preparation was broadly similar across the six institutions, whereas Role Competence and Organization and Support differed between institutions and between government- and private-sector settings. Government-sector students had higher rank scores for both Role Competence and Organization and Support, while no sector difference was evident for Role Preparation. Age category showed small positive associations with Role Competence and Organization and Support after adjustment for sex, although the regression models explained only a limited proportion of outcome

variance. Collectively, these findings suggest that students may perceive their academic preparation relatively consistently while experiencing greater variability in confidence and anticipated support across clinical and institutional contexts.

The generally positive perceptions of professional preparation observed in this study are consistent with literature indicating that readiness for practice is multidimensional and extends beyond acquisition of theoretical knowledge alone (3,5). Previous studies of nursing students and newly graduated nurses have emphasized that transition readiness involves the ability to apply knowledge in clinical settings, communicate effectively, prioritize care, manage workloads, and adapt to increasing professional responsibility (1,2,13). In the current study, most students considered their coursework relevant and reported opportunities to develop required nursing skills, yet a smaller proportion expected their transition to professional practice to be unproblematic. This difference is important because confidence in academic preparation does not necessarily imply confidence in assuming an autonomous professional role. The finding is compatible with Duchscher's description of transition shock, in which entry into professional nursing involves adjustment to responsibilities, expectations, and workplace realities that differ from the structured student role (8).

Students reported particularly favorable perceptions of competence in ethical decision-making, patient education, and prioritization of care, whereas confidence was comparatively lower for delegation and workload management. Similar concerns regarding readiness for complex professional responsibilities have been described in studies examining nursing students' and new graduates' transition into clinical practice (13,14). Competence in delegation and workload management requires not only knowledge of professional standards but also repeated exposure to clinical prioritization, team coordination, and responsibility for multiple patients. From Benner's perspective, final-year students and newly qualified nurses remain dependent on accumulating contextual clinical experience as they progress beyond the advanced-beginner stage and develop more sophisticated clinical judgment (9). Clinical preceptors may therefore have an important role in providing supervised opportunities for students to exercise responsibility and receive feedback on their performance (18).

Role Preparation did not vary significantly across institutions, whereas Role Competence and Organization and Support showed greater institutional variation. This pattern may indicate that formal educational preparation is relatively comparable across the participating BSN programmes, while perceptions related to application of competence and workplace support are more sensitive to differences in students' clinical learning experiences. Previous research has similarly shown that readiness for practice is related to features of the educational and clinical environment rather than academic instruction alone (13,19). However, the present study did not directly measure patient volume, case complexity, supervision intensity, preceptor availability, staffing patterns, or quality of clinical placements. Accordingly, institutional differences cannot be attributed to any specific characteristic of the participating hospitals or nursing schools.

The sector-level comparisons further demonstrated higher perceived Role Competence and Organization and Support among students from government institutions than among those from private institutions. The difference in Organization and Support was greater than that observed for Role Competence, whereas Role Preparation did not differ significantly by sector. These findings suggest that the observed public-private distinction may relate more strongly to students' perceptions of the clinical and organizational environment than to their formal academic preparation. Meleis's Transitions Theory emphasizes that successful transitions occur within an interaction of individual, educational, and environmental conditions, including interpersonal support, communication, and organizational resources (10). Studies of newly qualified nurses have similarly highlighted structured support, orientation, feedback, and collegial relationships as important components of transition experiences (12,20). Nevertheless, because institutional sector was used only as a grouping variable in the present study, the findings should not be interpreted as evidence that government institutions intrinsically provide superior clinical education or support. Direct measurement of specific organizational characteristics would be needed to determine which factors account for the observed differences.

The findings relating to anticipated support are also relevant to the transition from undergraduate education to professional employment. Approximately two-thirds to three-quarters of participants expected support, constructive feedback, orientation, respect, and effective communication within the clinical environment. Previous research has emphasized that structured transition programmes and supportive professional environments can

assist newly graduated nurses as they adapt to independent practice (20,21). Effective preceptorship may be particularly valuable because preceptors support clinical learning, professional socialization, feedback, and progressive assumption of responsibility (18,22). Simulation and structured transition initiatives have also been used to support novice nurses in developing confidence and clinical decision-making before or during entry into independent practice (21,23). The present findings do not demonstrate the effectiveness of these interventions, but they reinforce the importance of evaluating how students experience clinical supervision and organizational support during the final stages of nursing education.

Age category was independently associated with Role Competence and Organization and Support, but these associations should be interpreted cautiously. The corresponding regression models each explained only 1.7% of outcome variance, indicating that age and sex accounted for very little of the variability in students' perceptions. The observed association with age may reflect differences in maturity, previous educational experiences, exposure to clinical environments, or confidence acquired over time, but these potential explanations were not measured and cannot be established from the present data. In contrast, sex was not associated with any of the three preparedness domains. These findings suggest that demographic characteristics alone are unlikely to explain meaningful differences in anticipatory preparedness and that educational, experiential, and organizational factors may warrant greater attention in future research.

From an educational perspective, the findings indicate that preparation for transition should encompass not only academic knowledge and core clinical skills but also responsibilities that students may perceive as more demanding when entering professional practice, particularly delegation, workload management, and adaptation to workplace expectations. The relatively lower confidence observed in these areas supports closer attention to experiential learning opportunities that allow students to practise prioritization, coordination, communication, and supervised decision-making before graduation. At the institutional level, the variation observed in perceived competence and organizational support suggests value in evaluating clinical-placement structures, orientation processes, feedback mechanisms, and preceptor support across nursing programmes. Such evaluation would help determine whether modifiable differences in learning environments contribute to students' transition readiness rather than assuming that sector status itself is the explanatory factor.

This study has several strengths. It included 403 final-year BSN students from six institutions and incorporated both government- and private-sector settings, allowing institutional and sector-level comparisons within a large urban nursing-education context. The response rate was 79.5%, and the analysis included effect-size estimates in addition to p-values. The study also examined multiple dimensions of anticipatory preparedness rather than relying on a single global item. Nevertheless, several limitations affect interpretation. The cross-sectional design precludes establishing temporal or causal relationships, and all preparedness outcomes were based on self-report rather than objective assessment of clinical competence. The study was confined to institutions in Lahore, limiting generalizability to nursing students in rural areas, smaller cities, or other educational systems. Non-response bias remains possible because students who were absent or submitted incomplete questionnaires may have differed from respondents. Domain-specific internal consistency was modest, particularly for Role Preparation and Role Competence, which may have reduced measurement precision. The analysis also did not directly measure characteristics of clinical environments that might explain institutional or sector differences, and students were clustered within only six institutions, which may introduce within-institution similarity not fully addressed by the reported analyses. In addition, age was analyzed categorically, with very few participants in the oldest category, limiting interpretation of its regression coefficient. These limitations support cautious interpretation of the observed institutional and demographic associations and highlight the need for longitudinal research incorporating objective competence measures and direct assessment of clinical-learning environments.

CONCLUSION

Among final-year BSN students from six nursing institutions in Lahore, perceived academic and professional preparation was generally favorable, but confidence regarding transition into independent practice was less consistent, particularly for delegation and workload management. Role Preparation did not differ significantly across institutions or between government- and private-sector settings, whereas perceived Role Competence and Organization and Support varied across institutions and were higher among students from government-sector institutions. Age showed small positive associations with competence and organizational support, although

demographic variables explained little overall variance. These findings indicate that anticipatory preparedness is not uniform across all dimensions and that differences in perceived competence and support are associated with the institutional context in which students receive their education and clinical exposure.

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