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CLINICAL TEACHING COMPETENCY AMONG NURSING PRECEPTORS AT LIAQUAT UNIVERSITY HOSPITAL IN PAKISTAN

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ABSTRACT

Background: Nursing preceptors combine patient care with responsibility for students' clinical learning. Evidence about their teaching competency in public hospitals in Sindh remains limited, particularly regarding the educational activities requiring support.

Objective: To describe self-reported clinical teaching competency, identify domain-specific priorities and examine associations with demographic and professional characteristics among nursing preceptors at Liaquat University Hospital, Hyderabad and Jamshoro, Pakistan.

Methods: A descriptive cross-sectional survey was conducted from 30 March to 30 July 2026. Convenience sampling recruited 211 eligible registered nurses from two hospital sites. Participants completed a locally adapted, English-language, 40-item questionnaire covering seven domains on a five-point agreement scale. Five negatively worded items were reverse scored. Overall means were classified using study-defined low, moderate and high bands. Four primary categorical associations were examined using Pearson chi-square tests, Cramér's V and Holm-adjusted probabilities. Supplementary analyses examined mean differences and correlations with experience.

Results: Of 232 nurses approached, 211 participated, giving a response rate of 90.9%. Overall competency averaged 3.10 (SD 0.72; 95% CI 3.00–3.19). Moderate, high and low bands contained 100 (47.4%), 62 (29.4%) and 49 (23.2%) participants, respectively. Advocacy and support scored highest (3.36), while social interaction and networking scored lowest (2.88). Overall internal consistency was high (Cronbach's alpha 0.969). Competency category was associated with clinical nursing experience (χ^2=12.785, p=0.012; adjusted p=0.037; V=0.174) and teaching experience (χ^2=16.705, p=0.002; adjusted p=0.009; V=0.199). Associations with age and qualification were not statistically significant.

Conclusion: Participants reported moderate teaching competency, with networking, role modelling and feedback emerging as priorities. Findings support locally evaluated educational and organisational support. Self-report, convenience sampling and incomplete psychometric validation limit conclusions about actual performance and wider populations.

KEYWORDS: Clinical teaching; nursing preceptors; clinical competency; preceptorship; nursing education; Pakistan.

INTRODUCTION

During clinical placements, nursing students have to link theory with making decisions about the care of a specific patient. Ward based Preceptors support students in understanding those decisions, to perform procedures within appropriate bounds, and to understand their professional responsibilities. Their teaching role goes beyond the technical skills. A mapping exercise revealed that within all included competency frameworks, there were some common items which were linked to facilitating teaching, being a role model and assessing student performance. A later modified Delphi study identified preceptor development in terms of the interrelated roles of teacher, facilitator, coach, role model, leader and evaluator. These frameworks serve as a convenient means of analysing clinical teaching as observable sets of educational responsibilities. [1,2]

The clinical experience of the nurse cannot be used to judge the ability of that nurse to explain the reasoning, give constructive feedback or support the struggling student. There is recent evidence that preparation for preceptorship is not even. An Irish survey revealed significant differences in training, with some with no formal training, and less confidence in dealing with low-performing students. Preceptors in a qualitative study in Ghana reported that expectations were not clear and uncertainty regarding the use of demonstration to a great extent. These findings reveal a distinction that can be put into action – that is, knowing how to provide care and knowing how to organise another person's learning while care is ongoing. Evaluating the competency of the teacher can be a way for institutions to determine where there is a need for further education or to clarify expectations. [3,4]

The nature of preceptor conditions is a factor in teaching. A South Korean survey linked clinical teaching behaviour with patient-safety perceptions, clinical reasoning, reflection, workload reduction and matching the preceptor and learner calendars. Participants were nurses supervising newly qualified nurses and findings may not be applicable to undergraduate supervision. However, they demonstrate the need to take into account learning achievement along with work organisation. Although a preceptor may be familiar with a feedback approach, they may not have a specific situation in which this approach is warranted. On the other hand, extra time may not be all that helpful if the learning goals and assessment tasks are not clearly defined. [5]

These questions are applicable to the nursing education of Pakistan. In fact, nurse educators have complained about the heavy workload, inadequate ratios of students to educators, and limited opportunities for professional development. Recent qualitative studies in Karachi revealed that senior nursing students experience neglect by supervisors, challenges in bridging theory and practice, and issues of lack of resources in public placement. These are specific institutionally and view point based stories and not about all clinical education of Pakistan. They nevertheless consider that there is an environment in which the role of the practising nurse as educator is ripe for investigation. It is valuable to be aware of preceptors' own report to supplement students' accounts and to narrow down in order to specify activities which need to be further investigated. [6,7]

Recent studies conducted in Pakistan also warns not to presume that all clinical placements are of same teaching profile. A converging mixed method study was conducted in a private teaching hospital in Islamabad, which comprised of 88 observations of student–preceptor encounters from 44 students and 14 preceptor interviews. Student rated domain is defined as a rating between 3.48 and 3.97 with interprofessional communication ratings being the highest. This offers evidence relevant to this country, but the instrument used in this study was observed by the students, and the setting and assessment were encounter based at a private hospital, as opposed to a survey of preceptors' usual practice. A local assessment in the public sector in Sindh can thus be used to provide additional information without being considered as an alternative measurement. [8]

There is also some uncertainty about the qualities which are linked to more effective teaching. Among critical care nurses in Norway, formal mentor education was the only characteristic that was positively related to the mentoring competence. A training needs study and clinical teaching experience was also conducted and showed that training needs cannot be separated from experiences. These results raise doubts about relying solely on seniority for identifying those that need educational support. The associations may be different due to variations in setting, instrument and/or learner groups, or differences in clinical experience, teaching experience, and age of individuals within the same career. These measures should therefore be distinguished from each other using local evidence and unadjusted comparisons should not be interpreted as independent measures. [9,10]

Uncertainties are also associated with the choice of measurements. A systematic review using COSMIN in 2026 identified 16 instruments in 18 studies and identified persistent issues related to cross-cultural validity, measurement error and responsiveness. A recent example of the need to test the functioning of an instrument in the context in which it will be used is the development of a culturally compatible preceptor competency scale. When response anchors or reallocation of items are changed, this may shift the meaning of a score. Although a questionnaire locally adapted might be a good starting point, any claims of structural validity or objective teaching ability should be discussed separately from the internal consistency and content review. [11,12]

Liaquat University Hospital offers clinical training in its hospitals located in Hyderabad and Jamshoro of the province of Sindh. Nurses who oversee students in these areas do a combination of patient care and education. Prior to this study, there was no evidence reviewed that validated their overall self-reported teaching profile or the teaching domain that they did not endorse the highest. Other institutions may be able to provide evidence to inform the questions asked but cannot provide a local estimate. The present assessment has done so by using a multidomain description and study-defined categories and comparisons to selected demographic and experience characteristics.

The study was to determine the self reported clinical teaching competency of nursing preceptors at both hospital sites. The four purposes of analysis were to: describe overall competency; descriptively compare domain profiles; classify participants based on predetermined analytical bands; and examine relationships between competency and age, qualification, clinical nursing experience, and clinical teaching experience. Exploratory characteristics were gender, hospital site and department. The aim of this was to identify areas for discussion and development, as far as the participating services are concerned. The achievement of students, the quality of teaching observed and the effectiveness of training and patient outcomes were beyond the scope of the study.

The word 'preceptor' was used in the study to include a registered nurse who is engaged in students' clinical teaching or supervision, whether or not a small proportion of time is spent in formally appointed preceptor positions. This is an operational definition and is important in interpreting the experience findings. A nurse might have wide clinical experience, and be relatively new to teaching, and teaching involvement might start before an official appointment is made. It also restricts findings from comparing the study with studies that investigate only the orientation of newly employed nurses. The activities overlap with some differences in the roles of the learners, assessment criteria and potential progression. The findings in the present study relate to the supervision of nursing students who meet the eligibility criteria below.

2 METHODS

Design and setting

Descriptive cross sectional survey was carried out at two sites of Liaquat University Hospital, Hyderabad and Jamshoro in Liaquat University of Medical and Health Sciences, Sindh, Pakistan. The data collection was implemented during the period 30 March to 30 July 2026, with a pilot implemented prior to the main data collection in early March. One assessment of normal practice in clinical preceptorship was done by participants. No intervention or follow up measurement was done in the field of education. The Strengthening the Reporting of Observational Studies in Epidemiology statement was used as a guide to reporting. The design allows for description and explanation of associations that are contemporary, but not temporal or causal. [13]

Participants and recruitment

Eligible participants were registered nurses with a Generic BSN, Post-RN BSN or MSN degree, at least two years of clinical nursing experience, current teaching and/or supervising of nursing students, and willing to participate. Those who were not currently in student-supervision, those who were unavailable or on long leave during recruitment and those who declined consent were excluded. The eligibility requirements were not expanded upon by the additional qualification options which were printed on the questionnaire. The sampling technique was non-probability convenience sampling, as no attempt was made to draw names from a complete sampling frame from either of the two hospital sites, but only those who were available were sampled.

A nursing population of 466, a 95% confidence level and a nominal 5% margin of error were used to determine the planned number of participants to be 211, which was approved. A finite-population proportion calculation with an assumed proportion of 0.50 produces an approximate requirement of 210.82 which is rounded up to 211. The calculation reflects planning assumptions only and not representativeness achieved, as the margin of error is not strictly a probability sample margin of error. There is no specific power calculation associated with the association tests. Of the 232 nurses contacted, 21 refused and 211 completed questionnaires for analysis. Figure 1 provides a summary of recruitment and sites.

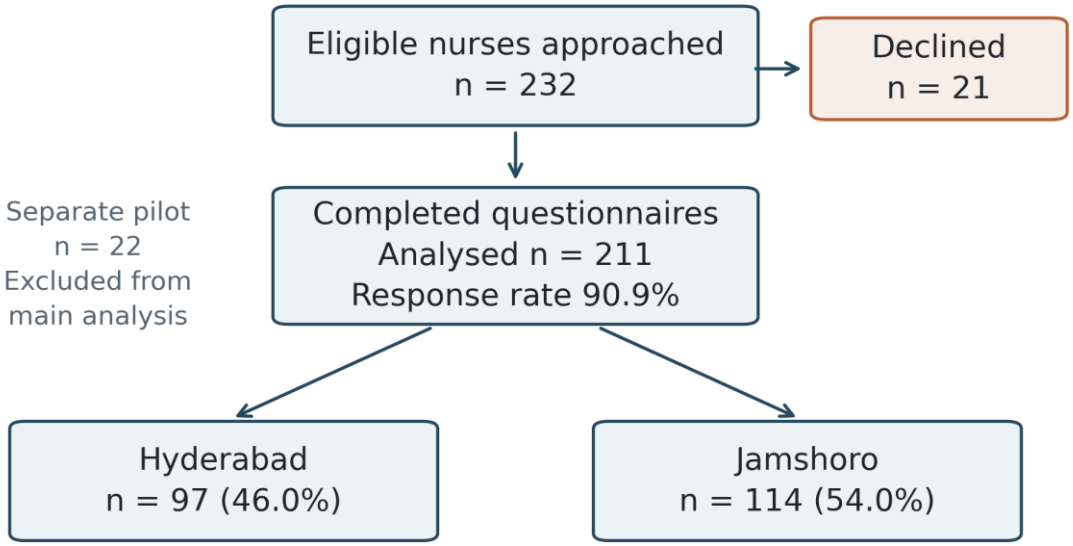


Figure 1 Recruitment and site participation. Of 232 eligible nurses approached, 211 completed questionnaires were analysed. The separate pilot of 22 preceptors was excluded from the main analysis. Site percentages use N=211.

Instrument and local adaptation

The English version of the LUH Clinical Teaching Questionnaire version 2 was used for collecting data. The screening and consent information was presented in Section A; demographic and professional characteristics were presented in Section B; and 40 clinical teaching statements were presented in Section C. Responding to the clinical teaching statements was done using a five-point Likert scale, from strongly disagree to strongly agree, and was coded as such. Participants were asked to talk about their typical clinical teaching practice. The questionnaire was only used to record agreement with statements regarding practice, not directly observed educational behaviors.

The Multifaceted Role of Clinical Nurse Preceptors Questionnaire by Rashwan and colleagues was used as a source. The source publication coded the frequency responses to each item as never to always (0-4) and the LUH version used agreement anchors and a local allocation of items to 7 domains. Permission for use of source instrument is recorded in the study records. The questionnaire administered was considered an adaptation as the response format and grouping varied. No published measurement properties of the source form were assumed to be validity for the LUH version. [14]

The synopsis attachment had 41 statements, one of which was a duplicated statement. A duplicate statement was removed from the form administered and the last statement was randomized and renumbered. The de-briefing

item was also positively framed to elicit any sessions where participants were able to reflect on students' clinical performance. These differences should matter to interpretation since the item content and scoring of items should match with the actual form completed. There were seven local domains: teaching and instructional methods, facilitation and support, adult learning approach, role modelling and leadership, social interaction and networking, advocacy and support, and feedback provision and evaluation. Their allocations of items are carried over in Table 2.

Score/competency categories

Five of the items (Q18, Q21, Q24, Q28 and Q30) were reverse-scored (with the raw score subtracted from six). All other statements (including the positively worded de-briefing item Q38) were scored directly. Domain scores were based on the mean of the items that were scored on each domain. All 40 items scored were averaged together, equally, to form an overall score. Thus, the 13-item instructional-methods domain had the greater impact on the total score compared to either of three-item domains. There was also a total score ranging from 40 to 200 obtained from a completed questionnaire. The larger the value, the more positive was the self-report.

Study-defined competency bands were created as follows: low (below 2.50), moderate (2.50 to < 3.50), and high (3.50 or above). These half-point boundaries indicate where there was disagreement, a central response range, and agreement on the 5-point scale. They were not validated thresholds for competent clinical performance but analytical categories recorded in the scoring key. Descriptive boundaries were imposed on domain means using the same boundaries as were used for the domain scores. Even if a respondent was close to a category border, he might shift category upon a slight shift in his score and so continuous summaries were left as well as categorical results.

There were at least 80% of each domain items, rounded up, that were required for a valid domain mean (scoring key). An overall mean was required to have 32 or more responses and valid scores for each domain. Leaving the answer to a question blank or marking it with two answers were to be scored as missing and not imputed. Complete responses were obtained for the 40 teaching items for all 211 main-study records and no participant was excluded by these rules, nor were any items imputed. Reverse coded scores were kept as a separate bank of data from the original answers, as were the derived categories, to maintain the trail of the scoring.

Content review and pilot testing.

Qualitative pretest of the questionnaire by the supervisor and one other expert showed that the content of the questionnaire was acceptable. In a separate pilot, twenty-two preceptors were involved; ten from Hyderabad and 12 preceptors from Jamshoro. The pilot participants were not included in the main analysis. The same 40 item form was administered to both samples. The overall Cronbach's alpha value for the pilot was 0.966 and 0.969 for the main study. Also domain coefficients were computed. No quantitative content-validity index, or local factor analysis or test–retest estimate was calculated. The alpha was considered a measure of sample-specific internal consistency, and thus is not a measure of validity or unidimensionality in and of itself. [15]

The data gathered and statistical analysis was used to evaluate the responses to the questions.

After having obtained the written informed consent, the participants filled out the questionnaire form with the form identifiers. Responses did not include consent documentation. Checks on data included eligibility, allowed ranges of responses, and consistency between experience measures. Clinical nursing experience, clinical teaching experience and formal preceptor experience were differentiated: formal preceptor years were contained within teaching years were contained within clinical nursing years. Any days that occurred on which the teacher personally precepted students were entered separately. Age was divided into three groups: under 35, 35 - 45 inclusive and over 45 years; clinical experience was divided into three groups: under 5, 5 - 10 inclusive and over 10 years; teaching experience was divided into three groups: under two, 2 - 5 inclusive and over 5 years.

The data was analyzed with IBM SPSS Statistics. Categorical characteristics were described as frequencies and percentages. Scores and experiences were described with means, standard deviations and medians and their available 95% confidence intervals. Four main Pearson chi-square tests explored competency category overall with age, highest qualification, clinical nursing experience and clinical teaching experience. The expected counts were assessed and Cramér's V was used to describe the association strength with two sided $p< 0.05$ considered statistically significant. Multiple testing across these four comparisons were addressed by using Holm-adjusted probabilities. This procedure controls the family-wise error rate sequentially, without having to interpret the four tests individually. [16]

Exploratory categorical comparisons were made on the basis of gender, hospital site and department. Overall means, Tukey post hoc comparisons, non-parametric group comparisons and Pearson and Spearman correlations between and among domains and between experience and score were employed in making supplementary analyses. Each of these analyses was different from the four main tests and was regarded as exploratory; correlation results for these analyses are not multiplicity adjusted. The data were not modelled using a multivariable model. Thus, the analyses were unable to distinguish the influence of correlated career attributes or to consider factors of educational preparation or conditions on the job. Non-significant results were not considered to be evidence of equivalence but rather that there was insufficient evidence of an association.

Ethical considerations

The study was approved by Liaquat University of Medical and Health Sciences, Jamshoro Research Ethics Committee (LUMHS/REC/-1494) on 20 February 2026. Permission to use the hospital was also granted by the administration. All participants signed informed consent and were told that they were free to either participate or

decline, and that there would be no consequences if they did not participate or chose to withdraw. Names were not included in the questionnaire data set, consent forms were kept separately and results presented at a group level. This was a study with a questionnaire response only and no clinical intervention.

Results

Were all stakeholders involved?Was there participation of all stakeholders?

There was a 90.9% return rate with all 211 questionnaires being returned. 97 participants were from Hyderabad and 114 were from Jamshoro. Participants below 35 years numbered 82 (38.9%), those aged 35–45 numbered 88 (41.7%) and those above 45 numbered 41 (19.4%). Women comprised 132 participants (62.6%). Participants were most likely to be generic BSN (116, 55.0%) followed by post-RN BSN (62, 29.4%) and MSN (33, 15.6%). Six categories of clinical departments were represented, with the medical, surgical, paediatric and critical care departments having the highest number of participants. The demographic and professional profile are shown in Table 1.

Table 1 Demographic and professional characteristics of participants

Characteristic	Category	n (%)
Hospital site	Hyderabad	97 (46.0)
	Jamshoro	114 (54.0)
Age group	Below 35 years	82 (38.9)
	35–45 years	88 (41.7)
	Above 45 years	41 (19.4)
Gender	Male	79 (37.4)
	Female	132 (62.6)
Highest qualification	Generic BSN	116 (55.0)
	Post-RN BSN	62 (29.4)
	MSN	33 (15.6)
Clinical department	Medical	53 (25.1)
	Surgical	42 (19.9)
	Paediatric	39 (18.5)
	Critical care	40 (19.0)
	Emergency	24 (11.4)
	Other	13 (6.2)
Clinical experience	Less than 5 years	66 (31.3)
	5–10 years	70 (33.2)
	More than 10 years	75 (35.5)
Teaching experience	Less than 2 years	84 (39.8)
	2–5 years	85 (40.3)
	More than 5 years	42 (19.9)

N=211. Percentages use the total sample denominator and may not sum to 100 because of rounding. BSN, Bachelor of Science in Nursing; MSN, Master of Science in Nursing. Source: thesis Table 4.2.

The average number of years of clinical nursing experience was 9.37 years (SD 7.37) with a median of seven years and a range of four to thirteen years. The clinical teaching experience was on average 3.53 years (SD 4.26), median two years, and interquartile range one to five years. Formal preceptor experience was one year (median) with 202 days of precepting (cumulative). There were 66 nurses with less than five years of clinical experience and 70 with 5-10 years of experience, and 75 with more than 10 years of experience. 84 had less than 2 years of teaching experience; 85 had 2–5 years of teaching experience; and 42 had more than 5 years of teaching experience.

General competence and uniformity of measurements

The overall mean was 3.10 (SD 0.72; 95% CI 3.00–3.19), with a median of 3.02 and an interquartile range of 2.54–3.60. The mean score of individual participants varied between 1.65 and 4.83. The mean total was 123.83

(SD 28.94) out of a possible 40–200. The distribution was slightly positively skewed (0.220) and slightly less peaked than normal (−0.601). The Shapiro Wilk test suggested deviation from normality (W=0.983, p=0.014) and Supplementary non-parametric comparisons were considered. These descriptive statistics are for participants' scored responses and not for observed practice.

In the main sample the overall Cronbach's alpha was 0.969. Domain coefficients have values from 0.753 to 0.942 with facilitation and support being the lowest and teaching and instructional methods being the highest. Corrected item–domain correlations ranged from 0.534 to 0.781 and deletion of any single item would have reduced its domain alpha. Everything that was administered was kept. There were positive relationships between the seven domains, with Pearson values between 0.59 and 0.76, all p<0.001. The greatest correlation was between instructional methods and social interaction and networking. Table 2 is a composite of the domain definitions, reliability coefficients and score summaries.

Table 2 Questionnaire domains and self reported competency scores

Domain	Items	Alpha	Mean (SD)	95% CI
Teaching and instructional methods (TM)	Q01–Q13	0.942	3.10 (0.83)	2.98–3.21
Facilitation and support (FS)	Q14–Q16	0.753	3.20 (0.85)	3.09–3.32
Adult learning approach (AL)	Q17–Q19	0.794	3.23 (0.92)	3.11–3.36
Role modelling and leadership (RM)	Q20–Q24	0.831	2.98 (0.82)	2.87–3.09
Social interaction and networking (SN)	Q25–Q30	0.825	2.88 (0.76)	2.78–2.99
Advocacy and support (AS)	Q31–Q35	0.845	3.36 (0.84)	3.25–3.48
Feedback provision and evaluation (FE)	Q36–Q40	0.868	3.05 (0.88)	2.93–3.17
Overall scale	Q01–Q40	0.969	3.10 (0.72)	3.00–3.19

N=211. Scale range 1–5. Q18, Q21, Q24, Q28 and Q30 were reverse scored. The overall mean gives equal weight to each of the 40 items. CI, confidence interval; SD, standard deviation. Source: thesis Tables 3.2, 4.4 and 4.7.

Domain profile and competency bands

Advocacy and support had the highest mean of 3.36 (SD 0.84; 95% CI 3.25–3.48). Adult learning approach (3.23), facilitation and support (3.20) and teaching and instructional methods (3.10) followed. On average, feedback provision and evaluation was rated as 3.05, role modelling and leadership was rated as 2.98 and social interaction and networking was rated as 2.88. The range of the mean scores across the different reports was 0.48 scale points. The means and their reported confidence intervals are shown in figure 2. The rankings were descriptive in that no a priori paired comparisons of the domain means were made.

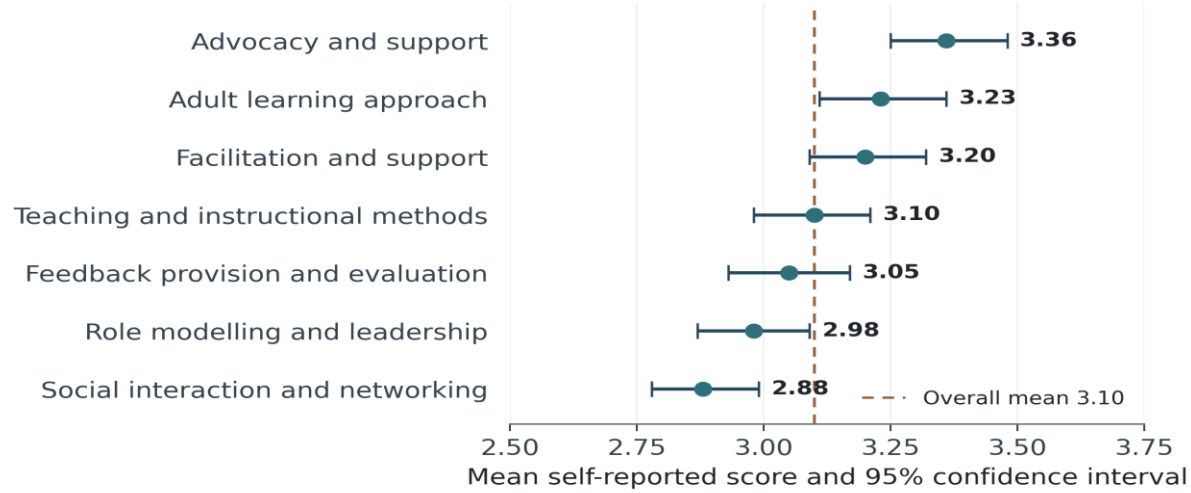


Figure 2 Mean self reported clinical teaching competency by domain. Points indicate means and horizontal lines the reported 95% confidence intervals (N=211). The dashed line marks the overall mean of 3.10. Scores can range from 1 to 5; the displayed axis is restricted to 2.50–3.75 to show the intervals clearly. Rankings are descriptive. Source: thesis Table 4.7.

Based on the study defined overall bands, 49 participants (23.2%) had low band, 100 (47.4%) had moderate band and 62 (29.4%) had high band. The domain level categorisation provided extra data on top of the mean rankings. The largest number (42.7%) were in the high band and the lowest (15.6%) were in the low band for Advocacy and support. The largest low band proportion was found in feedback provision and evaluation (66, 31.3%) followed by role modelling and leadership (62, 29.4%) and social interaction and networking (59, 28.0%). A full categorical profile is shown in figure 3.

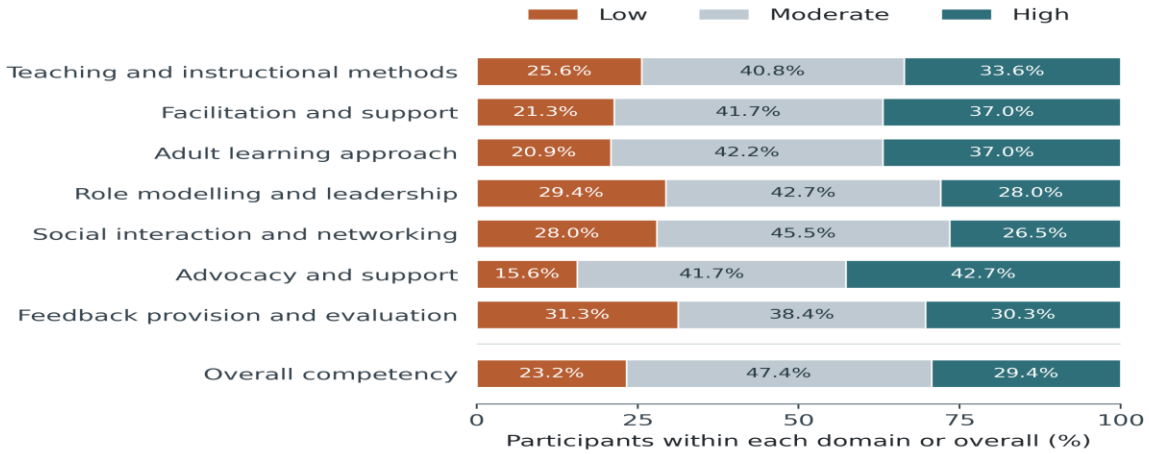


Figure 3 Distribution of study defined competency bands. Percentages use N=211 for each domain and the overall score. Low <2.50; moderate 2.50 to <3.50; high ≥3.50. Bands are analytical summaries rather than validated clinical-performance grades. Source: thesis Tables 4.11 and 4.12.

Selected teaching activities

Five highest item means all concerned advocacy and support. Assigning students based on competency scored 3.45, informing patients that the students were involved scored 3.41 and recognizing technical limitations that could impact patient safety scored 3.37. On the other extreme of the profile, the mean for conflict management for short rotations was reverse-scored at 2.82 and the mean for relationship formation for short rotations was also reverse-scored at 2.82. There was 41.7% and 38.9% agreement respectively with these difficulty statements. De-briefing sessions was the least accepted with 29.9% agreeing and 28.0% agreed with establishing positive rapport while maintaining professional boundaries. Table 3 makes a distinction between direct-scored practices and negatively-worded difficulty statements.

Table 3 Selected clinical teaching activities and reported agreement

Item and activity	Scored mean (SD)	Agreement n (%)	Scoring
Q32 Assigning students according to competency	3.45 (1.02)	102 (48.3)	Direct
Q33 Recognising students' technical limitations affecting safety	3.41 (1.04)	100 (47.4)	Direct
Q31 Informing patients about students' involvement	3.37 (1.10)	96 (45.5)	Direct
Q25 Establishing rapport with professional boundaries	2.89 (1.07)	59 (28.0)	Direct
Q28 Finding conflicts involving students challenging	2.82 (1.11)	88 (41.7)	Reverse
Q30 Finding relationships during short rotations difficult	2.82 (1.01)	82 (38.9)	Reverse
Q37 Keeping daily anecdotal performance records	2.96 (1.05)	66 (31.3)	Direct
Q38 Conducting debriefing sessions	2.95 (1.09)	63 (29.9)	Direct

N=211. Activity labels summarise the administered statements. Agreement combines agree and strongly agree on raw responses. For reverse-scored items, agreement indicates greater reported difficulty and lower competency; the mean shown is after reversal. These items illustrate strengths and priorities and are not an exhaustive item ranking. Source: thesis Table 4.9.

Primary and supplementary associations

Clinical nursing experience was associated with overall competency category (χ^2=12.785, df=4, p=0.012; Holm-adjusted p=0.037; V=0.174). The high band contained 12 of 66 participants (18.2%) with fewer than five clinical years and 31 of 75 (41.3%) with more than ten. Teaching experience was also associated with category (χ^2=16.705, df=4, p=0.002; adjusted p=0.009; V=0.199). Low-band membership declined from 34.5% among

those with fewer than two teaching years to 7.1% among those with more than five. High-band membership peaked in the intermediate teaching group at 37.6%, rather than increasing uniformly across groups.
Neither age (χ^2=2.744, df=4, p=0.602; adjusted p=0.917; V=0.081) nor qualification (χ^2=3.630, df=4, p=0.458; adjusted p=0.917; V=0.093) showed a statistically significant association. All expected counts in the four primary comparisons were at least five, with a minimum of 7.66. Table 4 presents the complete cross-tabulations and test results. Figure 4 depicts the experience-group distributions. Exploratory comparisons were also non-significant for gender (p=0.359), hospital site (p=0.544) and department (p=0.830). One department cell had an expected count below five.

Table 4 Primary associations with overall competency category

Characteristic and group	Low n (%)	Moderate n (%)	High n (%)	χ^2 (df)	p	Holm p	V
Age group Below 35 years	20 (24.4)	42 (51.2)	20 (24.4)	2.744 (4)	0.602	0.917	0.081
35–45 years	22 (25.0)	39 (44.3)	27 (30.7)				
Above 45 years	7 (17.1)	19 (46.3)	15 (36.6)				
Qualification Generic BSN	27 (23.3)	56 (48.3)	33 (28.4)	3.630 (4)	0.458	0.917	0.093
Post-RN BSN	18 (29.0)	26 (41.9)	18 (29.0)				
MSN	4 (12.1)	18 (54.5)	11 (33.3)				
Clinical experience Less than 5 years	22 (33.3)	32 (48.5)	12 (18.2)	12.785 (4)	0.012	0.037	0.174
5–10 years	17 (24.3)	34 (48.6)	19 (27.1)				
More than 10 years	10 (13.3)	34 (45.3)	31 (41.3)				
Teaching experience Less than 2 years	29 (34.5)	39 (46.4)	16 (19.0)	16.705 (4)	0.002	0.009	0.199
2–5 years	17 (20.0)	36 (42.4)	32 (37.6)				
More than 5 years	3 (7.1)	25 (59.5)	14 (33.3)				

N=211. Percentages are within rows. Tests are Pearson chi-square with four degrees of freedom. Holm adjustment covers the four primary tests. V, Cramér's V. All expected counts were at least five. Bands: low <2.50; moderate 2.50 to <3.50; high ≥3.50. Source: thesis Table 4.13; counts reproduce the reported test statistics.

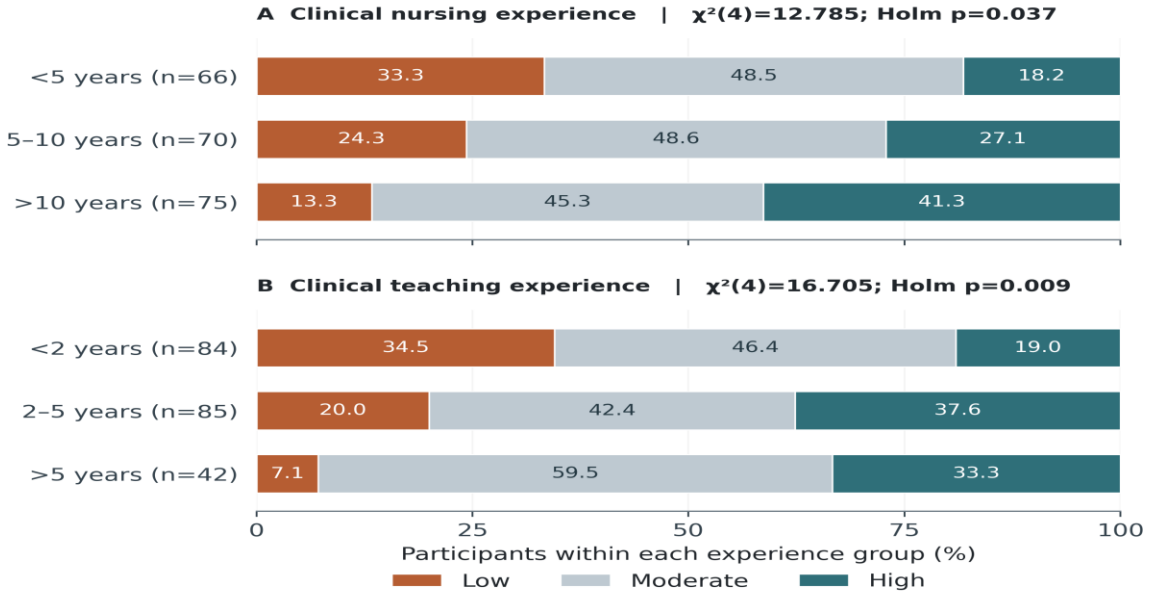


Figure 4 Competency bands by clinical and teaching experience. Labels show percentages within each experience group; group sizes appear at left. Category cut-offs are those defined in the study. Both associations remained significant after Holm adjustment across the four primary comparisons. Source: thesis Table 4.13.

Supplementary overall means increased from 2.91 to 3.34 across the lowest to highest clinical-experience groups and from 2.90 to 3.30 across teaching-experience groups. Corresponding omnibus comparisons were significant for clinical experience ($F[2,208]=7.637$, $p=0.001$) and teaching experience ($F[2,208]=5.890$, $p=0.003$); both Kruskal–Wallis probabilities were 0.002. Spearman correlations with the overall score were 0.259 for clinical years, 0.236 for teaching years, 0.213 for formal preceptor years and 0.191 for cumulative precepting days. These positive but weak correlations support an experience-related pattern while also indicating substantial variation within experience groups.

Tukey comparisons further located these supplementary mean differences. Participants with more than ten clinical years scored higher than those with fewer than five years, with a mean difference of 0.436 (95% CI 0.157–0.716), and higher than those with five to ten years, with a difference of 0.338 (95% CI 0.063–0.613). The two less experienced clinical groups did not differ significantly. For teaching experience, both groups with at least two years scored higher than the group with fewer than two years. The difference between the two more experienced teaching groups was not significant. These contrasts concern continuous self-ratings and remain supplementary to the categorical analyses. Figure 5 displays the interdomain correlations.

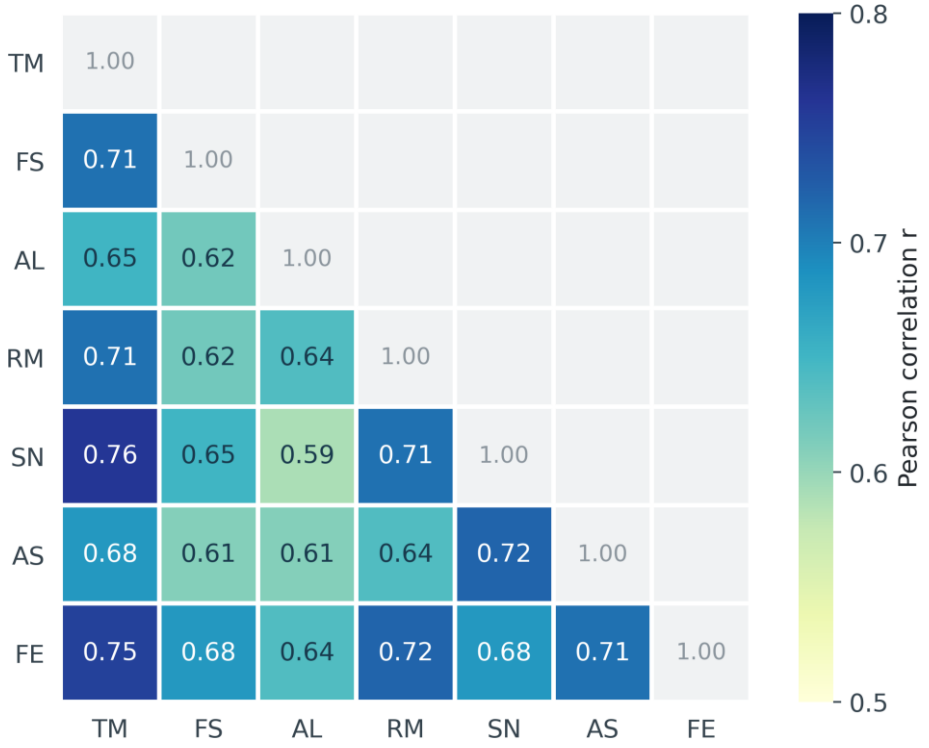


Figure 5 Correlations among the seven competency domains. Cells show Pearson correlations (N=211); all off-diagonal coefficients had unadjusted $p<0.001$. TM, teaching and instructional methods; FS, facilitation and support; AL, adult learning approach; RM, role modelling and leadership; SN, social interaction and networking; AS, advocacy and support; FE, feedback provision and evaluation. Source: thesis Table 4.8.

DISCUSSION

Meaning of the overall competency profile

The overall teaching score for the participating preceptors was near the neutral response point and almost one half of these preceptors responded in the study-defined moderate range. This finding gives a description locally of perceived practice in two sites of public teaching hospitals. It pinpoints educational activities to focus on; networking, role modelling and feedback. The outcome does not demonstrate that the majority of preceptors perform at a moderate level, when their teaching was observed. Agreement responses were based on perceptions of ability, usual practice and opportunity and category boundaries were selected for analysis. The most helpful interpretation is then to view the results of the domain and items in conjunction with the overall score.

How it is distributed also is important. Around one fourth of the participants were below the cut-off point of 2.50 and nearly one third were at and above the cut-off point of 3.50, with individual means almost covering the entire range. This variation would be masked in a single group average. Different entry needs and not assuming all staff are equally inexperienced teachers should be catered for within development programmes based on the findings. High preceptor self-ratings, on the other hand, should not be taken as a licence for providing no feedback or preparation. The only way to determine whether the variation reported is due to differences in teaching quality or different perspectives on the role or different working conditions would be through observation and the learners' perspective.

There is evidence in recent literature that there is a need to explore preparation without making the assumption that one national model exists in all places. Hardie et al. discovered that Ireland preceptors were more confident

in their interpersonal and leadership roles as compared to underperformance. Boakye et al. reported mixed feelings with regard to expectations of teaching in Ghana. These studies provide evidence of the relevance of role clarification and educational preparation, but, the results of these studies do not explain the LUH scores directly. Local survey did not assess: formal preceptor education, programme content, faculty supports. Without such information, it cannot be ruled out that a lower self-rating is due to lack of training, and not to other aspects of practice. [3,4]

In follow-up work special attention needs to be given to neutral responses. The "middle" answer might be chosen because an activity is a new one, it is not done consistently, it is perceived as someone else's responsibility or it is said to be hard to judge. Different actions are taken based on these interpretations. Unfamiliarity can be grounds for instruction; uncertainty about responsibility can be grounds for an agreement between faculty and ward staff; limited opportunity can be grounds for an agreement between faculty and ward staff regarding scheduling. The current instrument did not seek to elicit, "Why" data to explain why a respondent selected the response(s) that he or she did. It can be used to select questions for a service discussion – interviews or observation would be required to select appropriate response.

Advocacy and clinical supervision position.

The highest scoring domain was advocacy and support and all 5 of the highest scoring statements related to protecting patients or making student responsibilities match capability. This trend indicates that when given tasks, participants were more likely to agree with tasks that were closer to their clinical responsibility. The allocation of care based on competence, the recognition of limitations and the working out of interventions, when the situation is outside of a student's competence, is an accepted aspect of supervision. Patient-safety perceptions were also found to be linked to greater clinical teaching behaviour in one study in South Korea, but this was in the context of new graduates, which is different from the undergraduate context. These two results are in harmony with the notion of close association between clinical responsibility and teaching, without showing the same mechanism. [5]

This relative strength is quite relative, however. The mean score for the advocacy was below the high band of the study and less than half of respondents were in the high band of that domain. Knowing about safety limitations is not the same as showing safe supervision in a specific instance. No patient level outcomes or clinical incidents or student performance assessment was included in the survey. It can therefore not demonstrate that patients who were more protected by a higher advocacy score had higher advocacy scores. The outcome pinpoints a more favourable perceived practice area that may serve as a starting ground to discuss the relationship between supervision and education.

Support also needs to be given to the content in the items. Facilitation and support was related to participation in clinical activities and learning opportunities in the LUH questionnaire. It did not make a direct evaluation of students' emotional wellbeing or concern support away from school. In Jordan, student comments highlight a wider spectrum of positive teacher attributes, which demonstrates that common terms can mask other issues that are important in education. A good score for enabling participation does not prove that pupils feel supported personally, or feel comfortable to share a problem. These aspects should be stated explicitly in subsequent assessment rather than ‘extending’ the meaning of the score. [17]

Networking and relationships in clinical learning

Lowest scoring domain was social interaction and networking. Its item pattern is about practical relationships in the placement such as rapport, involving colleagues, handling conflict and building relationships in a short rotation. These are part and parcel of the learning process since the students are expected to be aware of whom to talk to, how to get help and how concerns are addressed. Several of the items are placement continuity and cooperation among staff, and a low score may be an indication of a lack of communication confidence. The results, in turn, suggest that interpersonal teaching skills as well as the structure by which students integrate into and transition between clinical teams should be explored.

It is instructive to compare it with the study in Islamabad. Interprofessional communication was the most highly valued skill by the students from there, while networking was the least highly valued skill by the LUH preceptors. There are differences between the studies in terms of sector, institution, perspective of the respondents and instrument. Student perceived communication, during selected encounters, also differs from the preceptor’s evaluation of communication throughout the entire placement. The contrast is not capable of creating a public–private difference, or ordering hospitals. It, on the other hand, demonstrates that the results of the communication can be context sensitive and that comparisons of labels need to be made at the level of the items and the conditions of the observations. A comparison based on commonly used measures and preceptor/student ratings would allow for a more direct comparison. [8]

Some of the activities reported might be addressed through educational preparation which could include rehearsal of introductions, boundary-setting, difficult conversations and conflict resolution. Hardie et al.'s scoping review explored the interpersonal and communication development of preceptorship programmes and found there was little evidence for this educational work in particular. This allows for a focused training whilst assessing the use of the skills. The number of people attending a workshop would provide little information on relationships on the ward. Student feedback and systematic observation of discussions with students would be more directly related to the deficits indicated in the item profile. [18]

Organisational support also needs to be looked at. The United Arab Emirates survey specifically included preceptors' attitudes in addition to organisational support and qualitative mental-health studies detailed the timeliness and workload involved in the supervision of students. These findings pinpoint possible contextual variables to measure locally in the future. They don't show that workload resulted in the LUH networking scores. There is currently no data to differentiate skill deficits from opportunity/tactical issues or teamwork. Ward leaders and faculty must first decide on the allocation of students, the duration of the relationship between the preceptor and the student and who will support the preceptor if they get into difficulties. [19,20]

Feedback and role modelling.

The most participants were in the low domain band for feedback provision and evaluation, which were higher in the mean score compared with networking and role modelling. This shows the need for both the summaries. The category proportions show the percentage of respondents that are below the selected boundary and the mean reflects the average score of the domain. The relative lack of endorsement of debriefing and daily progress recording indicates that the importance of day-to-day learning conversations and recording of learning should be considered. These activities can demonstrate the expectations and enable the next supervisor to see what a student needs to practise.

This pattern is consistent with that of Norwegian critical care nurses who have reported that evaluating students is their poorest dimension of mentoring and a recent scoping review of barriers to assessing nursing students in practice. But in either comparison, it is not clear that the same barriers are at play at LUH. It can be challenging to assess when the criteria are not clearly understood, observations are limited or responsibilities are not clearly defined and shared. These processes were not measured as part of the local survey. A review of the feedback given, both informally (such as through conversation) and in documentation, would help to identify whether the issue is relating to teaching methods, documentation requirements, continuity or available time. [9, 21]

A practical answer may be a debriefing coupled to a clinical goal and a witnessed episode of care. The preceptor and student were able to agree on what was good, one aspect that needed improvement and a next task. Then using a short record would help to ensure continuity between shifts. This suggestion stems from the content of the items and is not one of the interventions that was tested by the study. The viability of this must be considered prior to adding another administrative form. Information may already be recorded on current documentation and may not be useful to duplicate this information without putting extra strain on the workload or quality and timeliness of feedback.

Role modelling/leadership was the second lowest. The domain included positive statements about influencing students as well as reverse scored items about workload pressure or deviations from the ideal procedural steps. So its yield can be a combination of self-efficacy as a role model and working condition perceptions. Both the mapping and the Delphi studies highlight role modelling as a key element of preceptorship and the LUH domain is not entirely a measure of personal leadership ability. To go so far as to say that it was a character defect would be a flight of imagination. A more meaningful subsequent question would be how nurses explain choices, negotiate limitations and explain deviations from an anticipated level of performance with learners. [1,2]

Experience and the limits of seniority

Overall competency category was adjusted for clinical nursing experience and clinical teaching experience and both were associated with overall competency category across the four major tests. The results of supplementary mean comparisons and continuous correlations were in the same direction. These results were homogenous, the effect sizes were small and the correlations were weak. There were many advanced participants who recorded scores comparable to those of the less advanced participants. Thus experience seems to have some relevance to the distribution of self-reported competency, but not enough to identify individual educational needs. The analyses do not show that further years of teaching experience are necessarily effective in improving teaching.

Overlapping histories are also clinical and teaching experience. Older nurses may have had more experience of supervising students and those that are chosen to become a formal preceptor may have indicated that they are interested in teaching. Familiarity with education activities may be enhanced through repeated teaching and positive attitudes to teaching may be developed to maintain participation. These pathways are not discernible in the cross sectional design. None of the multiple models could distinguish between experience and qualification or other characteristics, or age. Continuity of training, motivation and supervisory was not measured. This association should therefore be reported as an association and not as a stand alone causal effect.

The order of the teaching-category pattern was not consistent. There were more members in the High-band in the two-to-five-year group than the group over five years, but mean scores were slightly higher in the group over five-years. This combination can result when category thresholds and/or differences in the spread of scores occur. Does not rule out either summary, but makes the simple statement that the more experience someone gains, the more advanced competency category they move into, incorrect. The most obvious trend in the categories was that there was a lower percentage in the low band for those who had a longer teaching experience.

There was no significant association between category and age and/or highest qualification. This is not to say that age or academic preparation is not relevant to education. The groups may also have a number of differences which the sample and categorisation were unable to identify and a degree qualification is not a measure of the amount of preparation specifically allocated to clinical teaching. Formal mentoring education can be connected to competence by evidence and there are comparisons of training and experience. Feedback, interest and

preparation, along with clinical experience, should be part of selection and development policies and the continuing learning needs should be identified by the senior preceptor. [9,10]

Measurement and interpretation

Internal consistency of the questionnaire was demonstrated by the high correlation of the scores from this sample. It fails to confirm the seven domain design, nor does it agree with observer ratings or show sensitivity to educational improvement. In addition, the overall alpha is influenced by the length of the instrument and by the instrument's correlation among domains, which may explain the particularly high alpha found in this instrument. The preceptor-perception tools in this systematic review of these tools, as well as the recent COSMIN review, suggest that a wider set of measurement properties should be examined. The scores are most defensible as descriptions of perceived practice within this survey until the scores are established locally. [11,15,22]

This interpretation features adaptation as a central theme. Frequency anchors elicit the frequency of a behaviour while agreement anchors elicit agreement with a statement about the respondent. The outcome of those processes of responding can vary regardless of whether the teaching is the same. Residing in the same domain, there are also local reallocations of domains that affect the items included in each label. Pretests for future validation should start with cognitive pretests to explore understanding of the statements, then the content coverage and dimensional structure should be pretested. The recent culturally compatible scale-development study provides a pertinent example of how contextually suitable can be considered as a measurement issue. [12]

There are also multiple possible explanations for the domain correlations. All of the above might be related to each other and develop together, but when one person fills all the items on one response, the general confidence and response style may also play a part. The present correlations are not able to distinguish between those explanations. They also don't provide the standard error of each difference between the domain means within an individual. The rank order, therefore, should be used to guide discussion but not be translated into assertions that the mean difference between each adjacent domain is statistically significant, or that a small mean difference is of educational importance.

Similar care must be given in comparison of the two hospital sites. Contingents of both qualified and experienced participants were similar but the overall mean was near, due to the different composition of the samples. A comparison of a non-significant site does not allow the determination that teaching conditions or development needs are the same. Ward resources and student allocations/access to academic staff were not measured in detail enough to be compared. Thus, the shared priorities proposed in the combined profile should be maintained in planning, with checks for their relevance at each site. These aggregated findings can help start that conversation, but information from those working and learning in a ward is needed to make decisions about teaching arrangements for a ward.

Implications for education and service development.

The findings suggest that a shared review between preceptors and nursing faculty/ward leaders should begin. That review should consider activities that are evident in those lower scores and determine which activities ward preceptors can be held accountable for, which activities can be shared with academic staff, and which require further support. Recent research into preceptors' open-ended narratives and an exploration of challenges to effective preceptorship underlines the significance of understanding the real world of supervision. This would mean that at LUH, it would allow for the identification of the need for teaching preparation as opposed to lack of communication, continuity or access to support. [23,24]

A targeted initial programme might include a discussion of the supervisory relationship, dealing with conflict, and discussing clinical reasoning and providing feedback related to learning outcomes. Activity chosen by the questionnaire could be practised through role play and discussion of real teaching encounters, where the participants could discuss the activity during the role play. Some nurses may need a structured orientation, others may need to discuss with their peers and calibrate their decision making around assessments when they become preceptors. These recommendations are statements of the findings and are therefore proposals. They should be agreed locally and evaluated as opposed to interventions that are already proven effective at the participating sites.

There are some recent intervention studies that are promising, but not conclusive. Liu et al. identified and analysed 27 studies on clinical nursing preceptor development programs that focused on enhancing clinical preceptor basic skills, and the emphasis was on learning outcomes; few studies reported on behaviour and broader outcomes. A previous systematic review also concluded that there were predominantly short term gains and weak links between preparation and long term clinical learning and/or care outcomes. These reviews show why it is important to test development programmes, and select outcomes that go beyond satisfaction with the course. They do not support a claim that a workshop will lead to an improvement in patient safety or students' competence in this context. [25,26]

There are two recent examples which can be used to design a programme. One-Minute Preceptor training for undergraduate clinical preceptors has been studied in Pakistan, as a brief, short-term teaching strategy which could be further considered locally. A prospective study in Ghana found enhanced students' preceptor competence and placement quality following training. It has a before and after design which is susceptible to other changes apart from the programme. These studies combined confirm the value of considering short-term, pragmatic teaching and learning approaches, whilst also acknowledging that impacts may be context specific. [27,28]

Further support needs to be continued following initial preparation. Ongoing education and support was a common requirement in the recommendations of the integrative review of hospital preceptor programmes. At LUH, there are a number of possible options such as having a named member of staff to contact, accessible course objectives and small time periods for discussion of challenging supervisory situations. In these situations there needs to be an agreement regarding availability and responsibility. They should be discussed with staff and considered as to whether they address a problem identified and if they can be managed in normal working time. The survey does not give any indication of the extra personnel, time or costs such changes would involve. [29]

Evaluation may involve multiple, self-assessment with student feedback, structured observation and review of feedback records. These sources cover each a different aspect of teaching and must be understood in isolation. A roll-out by stages across wards could shed light on feasibility prior to rolling out more widely, with baseline and sufficient time for skills to be put into practice. Predefined outcomes should relate to certain behaviours: discussing learning objectives or agreed next steps following an observed procedure. To make any claims with regard to the improvement of students' performance or patient outcomes, the outcomes would have to be measured directly.

Participation and opportunity to apply the new skills should also be recorded as part of the Programme evaluation. A preceptor who is unable to attend training due to his or her responsibilities in the ward may differ in a systematic manner from a preceptor who does complete training. It would also be helpful to be able to record barriers to attendance and amount of supervisory exposure to interpret apparent improvement and whether the programme is reaching those claiming the highest level of need for support.

Strengths and limitations

The study aimed at two sites of a public teaching hospital and achieved sample size, with a good response rate for the nurses approached for the study. For the full item set, complete responses were available to score the items without imputation. The use of a different pilot, explicit reverse-scoring and reporting of continuous scores and analytical categories increase transparency. The four main comparisons were pre-specified, and effect-sizes and multiplicity-corrected p-values allow for a less-dependency on individual p-values. These features add on to the description of the participating sample, but do not overcome the constraints of the recruitment and measurement approach.

The main problem of external validity is convenience sampling. Those not approached or declining may not be available or willing. The 90.9% response rate is for the approached group; the nominal planning margin of error assumes a sampling method which was not employed. These both numbers do not represent all the eligible LUH preceptors and Pakistani nursing services. Two hospital sites increase the range of settings represented in one institution but do not provide a national sample or the ability to make comparisons with the public and private sectors.

Self-assessment brings uncertainty in regards the scores. Responses can be due to confidence, expectations, social desirability or willingness to acknowledge that something is difficult, or practice. The same respondents were not asked for their assessment by students, teachers and independent observers. There were also no locally developed, comparable evidence for the English-language version. The qualitative review by two experts and high alpha do not replace systematic content validation, factor analysis, measurement-invariance testing or assessment of the stability across time. Such gaps are especially significant since the source instrument's response as well as its domain allocation were modified.

The study defined competency bands are an added limitation. They provide an overview of the response scale and are not related to competent / unsafe teaching, in a validated way. Categorisation also loses information and it is possible that respondents with very similar means could be in different categories. Reporting continuous scores was a partial solution to this problem, but neither of these summaries provides an externally determined standard. The overall score by the item weighted has more influence on instructional methods due to it having thirteen statements. Thus, an overall mean should not be interpreted as an "equal weight" comparison of seven educational roles.

Unfortunately, the cross sectional unadjusted analyses are not able to conclude what is cause and effect and cannot account for correlated career histories. Factors that could have a potential impact on the learning were not directly measured: formal preparation, workload, number of students, motivation, institutional support. Multiple respondents may be affected by departmental and/or hospital level conditions, but these were not modelled. The more tests that are done, the more chance results can be found, particularly in the unadjusted correlations. Approximately the same patterns were found in analyses of the same sample, in which case the pattern is not replicated but the internal consistency is given. A more comprehensive gap analysis in Ghana highlights how useful it would be to analyse clinical education through different stakeholder and organisational lenses as this would enhance the work done at LUH in the future. [30]

The adapted measure should be used with caution for high-stakes claims of validity for appraisal or the effectiveness of a programme and needs to be further validated by future research. A probability-based recruitment for multiple institutions would increase the inference for the population and the preceptor and student and observer assessments would help to understand the agreement among perspectives. Longitudinal designs: can deal with preparation and experience and how these relate to change. Development programmes need to be evaluated in terms of change in self-ratings and change in observed behaviours and student learning.

These current results are priorities and summaries of baseline data to design that work, not estimates of the impact of future work.

CONCLUSION

The mean score for overall teaching competency on a five point agreement scale were 3.10 for the nursing preceptors at Liaquat University Hospital. The highest number of people fell in the 'moderate' band identified by the study. The highest ratings were for advocacy and support, and networking, role modelling and feedback were identified as areas needing to be further investigated. Modest effect sizes were found between clinical nursing experience and teaching experience and competency category, but there were no statistically significant relationships between age and qualification and competency category. These relationships refer to the recruited sample and are not independent relationships or observed performance levels.

The results encourage the use of a locally assessed preceptor development programme that involves both teacher preparation and analysis of the supervision structures and the support of the faculty. The first priority is the creation of relationships, then the management of conflicts and constructive feedback and continuity of learning objectives. Before the questionnaire can be used to make consequential staff decisions, it is necessary to have local psychometric validation and assessment from other perspectives. Future interventions need to assess teaching behaviours and learner outcomes directly in future interventions, and should continue to differentiate between favorable self-reports and demonstrated educational effectiveness.

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