**RESEARCH QUESTIONS**

1. Among nurse graduates, what factors are associated with feeling unprepared for independent practice in blood administration procedures?
2. What curriculum and/or training characteristics within pre-licensure nursing programs correlate with perceived lack of readiness to practice blood administration independently?
3. What essential steps are required in a blood administration assessment instrument to define proper performance, according to nurse experts at the study site?
4. What aspect(s) of blood administration do graduate nurses frequently struggle to perform independently as determined by study site experts?

**BACKGROUND**

- Graduate nurses are expected to fill vacancies given nursing shortages. However, evaluations suggest low readiness for the professional activities they need to perform.
- Blood product administration/transfusion is frequently in the top three skills/procedures they feel uncomfortable performing independently.
- Little is published regarding specifics within the procedure that lead to a gap in readiness to practice.

**EXPLORATORY MIXED-METHOD**

**Data Collection:**
- Self-report surveys to all current graduate nurses in the affiliated nurse residency program (n = 262)
- Questions based on the learning sequence, learning difficulty, learning achievement, and the number of observations of blood administration
- Blood administration was considered to have five sub-tasks: a) purpose of transfusion; b) risks; c) starting and d) running the transfusion; and e) documentation procedures
- Quantitative and qualitative analysis was done on the completed surveys (n = 143)
- Review of a) the hospital’s intranet for available clinical resources; b) hospital electronic medical record (EMR) templates for current documentation processes and task aids; c) organizational blood administration audits; and d) existing assessment tools both within the organization and other nurse residency programs for evidence-based blood administration procedures.
- Interviews with nurse experts (n = 6) from units with both high and rare blood administration rates and the Infusion Safety Officers (n = 2) for the affiliated hospital.
- Think-aloud observations were used to establish qualitative validity through triangulation with the interview data.
- Standard setting using Delphi method for consensus building of the blood administration task model.

**GRADUATE NURSES RESULTS**

**Demographics:**
- 82.9% (n = 118) were in months 1-3 of their nurse residency; remaining were in the 4-6-month range.
- Mean age of 23 with a range of 20-50 years of age.
- Majority identified with the White/Caucasian race (93%, n = 133).
- Majority reported Bachelor’s Degree in Nursing (85.8%, n = 137) as their highest degree.
- 40 nursing programs were represented in the study; majority were traditional 4-year BSN programs (93%, n = 133) and located in the Midwest.
- 12 types of patient care units were represented, the highest percentage working on medical (40 nursing programs = 118) for his support and guidance and the Infusion Safety Officers (n = 2), unit coordinator (n = 3), Infusion Safety Management (n = 2), and BSN (n = 8). Master’s (n = 2) Nursing and n = 1 Business, DNP in progress (n = 1).

**NURSE EXPERT RESULTS**

**Survey:**
- Years of nursing ranged from 2.5 to 34 years.
- Shifts worked included staff nurse (n = 3), unit coordinator (n = 3), Infusion Safety Management (n = 2).
- BSN (n = 8). Master’s (n = 2) Nursing and n = 1 Business, DNP in progress (n = 1).

**Qualitative findings:**

- Patient Unit Acuity
- Types of work experience
- Frequency of blood administration
- Blood Administration Education
- New employee orientation
- Policies & Procedures
- Available resources
- Barriers to procedure
- Development of blood administration policies
- Blood administration sites
- Specific examples of rare occurrences
- Various in practice
- Nurses with experience
- Graduate nurses (Nurse Residents)
- Education
- Staffing levels
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- 12 types of patient care units were represented, the highest percentage working on medical (n = 29, 20.3%) and surgical (19.6%, n = 29) patient units.
- 52% work night shifts (n = 74), 45% day shifts (n = 64), and the remaining work a variety of shifts.

**CONCLUSIONS**

- Graduate nurses need more training in their first 6 months to feel confident with independent blood administration practice.
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- Step-by-step task model for blood administration.
- Aspects of blood administration graduate nurses frequently struggle to perform independently:
  - Appropriate rate of transfusion, performance and documentation of assessment of the patient receiving a blood transfusion, and assessment and management of transfusion reactions.

**Risk of Level of Comfort**

<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>Predictor Variables</th>
<th>Statistical Significance using Pearson Correlation</th>
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<td>PRN Experience</td>
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<tr>
<td>Donor Experience</td>
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<td>General Healthcare Experience</td>
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<td>Perceived Learning Difficulty</td>
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<td>Perceived Learning Achievement</td>
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<td>Residency Experience</td>
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<td>Type of nursing program</td>
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**Design and Evaluation of a Simulation-Based Assessment Instrument to Identify Performance Gaps in Graduate Nurses**

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