

# Onboarding New Graduate Nurses Using Assessment-Driven Personalized Learning to Improve Knowledge, Critical Thinking, and Nurse Satisfaction

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Effective onboarding is key to new nurse success; however, many programs lack evidence-based support. The current study compared knowledge, critical thinking, and nurse satisfaction between cohorts before and after implementation of personalized learning for onboarding. Results showed better knowledge, critical thinking, and nurse satisfaction in the personalized learning cohort compared to prior cohorts. Nurse educators should use evidence-based personalized learning for onboarding to fully support new nurses as they transition from the classroom to practice.

An effective nurse onboarding and orientation process is critical to higher levels of nurse engagement and nurse satisfaction. These components can lead to lower nurse turnover for an organization. High turnover rates are particularly common among new graduate nurses and can pose many challenges for organizations striving for workforce retention (NSI Nursing Solutions, 2019). There are many factors that contribute to this, but one key contributing factor is the ineffective onboarding of new hires (Bullock et al., 2011; Kiel, 2012; Kurnat-Thoma et al., 2017). Onboarding new nurses provides an organization the opportunity to make a strong positive

first impression and has a major influence on levels of both engagement and retention beyond their first year (Eckerson, 2018; Goldschmidt et al., 2011). However, many onboarding programs for nurses lack evidence-based research support to measure the vital components such as critical thinking and clinical judgment that are necessary as part of an effective onboarding program for the new graduate nurses (Pertiwi & Hariyati, 2019). The current study compared knowledge and critical thinking before and after implementation of personalized learning during the onboarding of new graduate nurse cohorts.

Inefficient and ineffective onboarding can lead new nurses to have poor job satisfaction if they feel their orientation has inadequately prepared them for the realities of their job. New nurses are anxious to begin applying the knowledge and skills they learned in their academic programs; however, transitioning into practice poses new and different challenges they may or may not be prepared for. Reality shock often occurs if nurses are inadequately prepared for the behaviors and expectations of their new professional working culture, which can cause them to leave the organization or even the profession (Murray et al., 2019). A positive onboarding experience is significantly related to lower turnover intention (Gupta et al., 2018). Low nurse satisfaction is a strong contributor to high turnover rates and turnover intention (Bratt & Felzer, 2012; De Simone et al., 2018). Although an effective orientation program can address certain aspects of reality shock, it can also promote increased job satisfaction for new nurses and lower turnover as well as result in higher competency levels and produce lower stress levels (Pertiwi & Hariyati, 2019).

Traditionally, nursing onboarding programs have focused on technical skills and organization-specific policies and procedures. Although all of these are necessary for safe and effective care, they are not sufficient to meet the demands of today's higher acuity, complex care environment. Higher acuity and more complex care requires a higher level of critical thinking, knowledge, and clinical reasoning regarding disease process and evidence-based practice. Many onboarding programs lack evidence-based research and data to identify where opportunities for improvement exist or even the

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Elise G. Valdes and Felicia Sadler are employed by Relias, the company that offers the onboarding tool and outcome measures used in the current study. M. Colleen Sembar has no conflict of interest to report.

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effectiveness of their process (Pertiwi & Hariyati, 2019). To optimize the effectiveness of onboarding new nurses into an organization, nurse educators should utilize onboarding programs that have the ability to measure the effectiveness and efficiency of their program. This includes valid and reliable tools that provide insightful data for evaluation of outcomes and have the ability to measure key components such as knowledge and critical thinking.

Critical thinking becomes an imperative in the delivery of safe and effective patient care in order to navigate the complexities in actual patient care situations. It is vital that nurses are equipped with both knowledge and critical thinking to provide safe and effective care. The National Council of State Boards of Nursing describes critical thinking as involving “the skill of using logic and reasoning to identify the strengths and weaknesses of alternative health care solutions, conclusions or approaches to clinical or practice problems” (*Next Generation NCLEX News*, 2018, p. 3). The National Council of State Boards of Nursing further describes clinical judgment as the observed outcome of two unobserved underlying mental processes, critical thinking and decision making. A review of the literature conducted by Theisen and Sandua (2013) reported that critical thinking is one of six areas in which new graduate nurses lack competency and new graduate nurses themselves self-report having deficiencies in critical thinking (Song & McCreary, 2020). Further research has confirmed that new nurses have poorer critical thinking compared to more experienced nurses (Fero et al., 2009; Song & McCreary, 2020). It is vital for organizations to have the capability to identify and address knowledge gaps in new nurses, as well as measure their critical thinking ability. The ability to quickly process information and make informed decisions in a timely manner is a key component to safe and effective patient care (Ludin, 2018; Theisen & Sandua, 2013). Critical thinking should be imperative to include in onboarding and orientation programs as an important facet in the orientation and training of their new nurse.

New nurses enter an organization with varied levels of knowledge and experiences. If nurse educators provide every nurse with the same information, which they may already be proficient in, it is likely to leave some nurses bored and unengaged, whereas other nurses who need more information will likely be lost and left behind. Time is a valuable resource in efficiently and effectively onboarding a new nurse. New nurses are eager to learn new information while avoiding redundancy by relearning information they already know. Assessment-driven learning is one important component to ensure knowledge gaps are identified and addressed. Assessment-driven learning has been shown to be significantly more effective than learning that is driven by the learner alone (Mehta et al., 2015). A personalized learning approach represents a way for nurses to learn and improve their skills in the most efficient and effective manner possible.

Prior research has shown the importance of onboarding in the engagement and retention of nurses, particularly evidence-based onboarding. The goal of the current study is to compare medical-surgical knowledge, critical thinking, and nurse satisfaction before and after implementation of a structured, personalized learning onboarding program with evidence-based content. We hypothesize that knowledge, critical thinking, and nurse satisfaction will be higher among cohorts that were onboarded as part of a structured personalized learning program than cohorts that were onboarded without it.

## METHOD

### Study Setting and Participants

This study compared cohorts of nurses who were onboarded before and after implementing a personalized onboarding program. Data were collected as part of an initiative conducted by Virginia Mason Franciscan Health. Nurses who were hired by Virginia Mason Franciscan Health before the implementation of the personalized learning for onboarding (pre-onboarding group) were compared with those nurses who were hired by Virginia Mason Franciscan Health after the implementation of the personalized learning for onboarding (post-onboarding group).

### Assessment-Driven Personalized Learning

Relias Onboarding was the assessment-driven personalized learning plan used in the current study. It quantifies a nurse's clinical knowledge and judgment and then tailors learning to meet individual needs. Relias Onboarding addresses ineffective orientation by adding a personalized learning component. The initial assessment identifies knowledge gaps for each nurse and then provides learning that addresses those gaps. Onboarding domains contain both nursing knowledge and critical thinking. Preceptors can use the information from the assessment to identify which areas new nurses may need more or less support in order to help each nurse become safe, effective, and ready for independent practice.

### Measures

The primary outcome measure was the Relias Medical-Surgical Situational Assessment. Nurses in both cohorts took the assessment at the end of their residency approximately 70 days after their start date. This assessment contains 30 multiple-choice questions based on videos depicting patient situations that a nurse is likely to encounter in their day-to-day practice. Nurses are asked to identify both the most effective and least effective option from the response list, which are weighted. In addition to the overall score, which is percent correct of the weighted responses and has a range of possible scores from 0 to 100, there are also subscores for the following domains: cardiovascular pulmonary systems, communication, critical thinking, endocrine, gastrointestinal/

genitourinary systems, medical-surgical pharmacology, and neurological/integumentary systems. An estimate of reliability was obtained with an interclass correlation of .98. Furthermore, validity analyses were conducted with an average criterion rating of .181.

In order to partially control for time effects or uncontrolled differences between the groups, we also included the comparison of a second assessment, the Relias Medical-Surgical Telemetry Assessment, which was not covered in the Relias Onboarding content. Nurses in both cohorts also took this assessment at the end of their residency approximately 70 days after their start date because they were working in medical-surgical units that had telemetry capability. In this comparison, we did not expect to see differences between the groups. The Relias Medical-Surgical Telemetry B Assessment contains 67 traditional multiple-choice questions. The assessment measures the knowledge of the registered nurses for the medical-surgical telemetry patient population and includes rhythm interpretation. The score for this assessment is calculated as a percentage of correctly answered items, with a possible range of scores from 0 to 100. This assessment was validated by eight subject matter experts, with an interrater reliability of .66.

Nurse satisfaction was measured as an exploratory outcome using Section 2 of the Casey–Fink Graduate Nurse Experience Survey (Casey et al., 2004), which contains 24 Likert scale subquestions relating to their self-assessment, such as “I feel confident communicating with physicians” and “There are positive role models for me to observe on my unit.” Possible responses on each question ranged from 1 to 4, and choices included *strongly agree* (4), *agree* (3), *disagree* (2), and *strongly disagree* (1). Nurses in both cohorts completed this assessment within their first week of hire as well as 12 months later; however, because of privacy and data consideration, these data were not available at the individual level and instead were already aggregated. Therefore, no statistical analyses were conducted with these variables. Instead, the differences in scores between baseline (upon hire) and 12 months after hire for the average response of each question are presented for each cohort. For ease of data interpretation, all items have been rescored so that higher scores indicate positive improvement.

Demographic data reported includes age, gender, race, level of education, clinical specialty, and new versus experienced nurse (with a new nurse defined as <1 year since licensure).

## Analyses

A one-way multivariate analysis of variance was calculated between the pre-onboarding cohort and the onboarding cohort to examine differences in the knowledge domains on the Medical-Surgical Situational Assessment. A chi-square test of independence was calculated for the score bands between the pre-onboarding cohort and the

onboarding cohort to examine differences between the groups. Finally, a *t* test was calculated between the pre-onboarding cohort and the onboarding cohort to examine differences in overall scores on the Medical-Surgical Telemetry B Assessment. Because of data limitations, no statistical analyses were conducted comparing the groups on the Casey–Fink nurse satisfaction data, instead descriptive data are presented.

## RESULTS

### Sample Description

In the total study group, there were 488 nurses, 136 in the pre-onboarding group and 302 in the post-onboarding group. Most of the nurses (82.8%) were women, with 6.4% declining to report their gender. Most nurses (49.6%) listed “medical-surgical registered nurse” as their clinical specialty, with 19.3% listing “new graduate” as their clinical specialty and 19.1% listing “not applicable” as they had not yet declared a clinical specialty (see Table 1).

### Primary Outcome

A one-way multivariate analysis of variance was calculated between the pre-onboarding cohort and the onboarding cohort to examine differences in the knowledge domains on the Medical-Surgical Situational Assessment. There were significant differences between the cohorts, Wilks'  $\lambda(8, 479) = 0.85, p > .001$ . Follow-up univariate analyses of variance indicated that for overall score and all knowledge domains, including critical thinking, the onboarding cohort performed better than the pre-onboarding cohort (see Table 2).

### Secondary Outcome

An independent-samples *t* test was conducted to compare the pre-onboarding cohort and the onboarding cohort to examine differences in performance on the Medical-Surgical Telemetry Assessment. No significant differences were found between the groups,  $t(482) = -0.62, p = .54$ . The mean of the pre-onboarding cohort ( $M = 85.89, SD = 5.57$ ) was not significantly different than the mean of the onboarding cohort ( $M = 86.19, SD = 5.06$ ).

### Exploratory Outcome

For the measure of nurse satisfaction, the onboarding cohort showed improvement on 16 of 24 nurse experience questions between baseline and 12 months later, compared with the pre-onboarding cohort, which only showed improvement on 7 of the 24 nurse experience questions (see Table 3).

## DISCUSSION

Our results showed that areas impacted by the personalized learning for onboarding, including relevant knowledge

	Overall Sample	Pre-Onboarding (N = 186)	Post-Onboarding (N = 302)
Age in years	30.7 (7.9)	31.6 (8.6)	30.1 (7.4)
Female	82.8%	86.6%	80.5%
Caucasian	52.3%	46.2%	56.0%
New graduate nurse (<1 year since licensure)	69.3%	73.1%	66.9%
Highest degree obtained (associate's)	46.9%	47.8%	46.4%

domains and critical thinking, were higher among nurses who participated in the personalized learning compared to nurses who were hired before the personalized learning was implemented. Furthermore, scores on the Medical-Surgical Telemetry Assessment, which was not related to the knowledge and skills covered in the assessment-driven personalized learning, showed no difference between the groups, providing support for the idea the changes seen were due to the personalized learning and not other unmeasured differences between the cohorts. Finally, our exploratory data showed that nurses who participated in the personalized learning showed improvement from baseline to 12 months later on more nurse satisfaction questions than nurses who were hired before this was implemented.

Although critical thinking has been identified by prior research as one major area where new graduate nurses struggle (Song & McCreary, 2020; Theisen & Sandua, 2013), it is encouraging that the assessment-driven personalized learning evaluated in the current study demonstrated increased critical thinking scores compared to the prior cohort. This study supports and highlights the importance of assessing a new graduate nurse's clinical reasoning skills and ensuring that they are competent to provide safe and effective care. The gap between having knowledge and applying it in practice is well documented in new graduate nurses (Ajani & Moez, 2011; Lee & Sim, 2020; Reebals et al.,

2021); however, ensuring they possess strong critical thinking skills can help bridge the gap between knowledge and application.

Pertiwi and Hariyati (2019) demonstrated that effective onboarding programs show higher nurse satisfaction and higher competencies as well as lower turnover and lower stress levels. This suggests that this assessment-driven personalized learning is effective as it demonstrated higher nurse satisfaction and improvements in both knowledge and critical thinking compared to prior cohorts. More research will need to be conducted to determine if these improvements also extend to lower turnover and lower stress levels for new graduate nurses.

### Limitations

Limitations of the study include lack of individual-level data for the Casey-Fink data, which precluded statistical analyses. However, the descriptive results provide promising positive pilot data for future research. Furthermore, this was an observational study; therefore, the differences seen could be due to other factors than this personalized learning, such as unmeasured differences between the cohorts or variations over time. However, the lack of differences between the groups on an assessment unrelated to the personalized learning suggests a higher likelihood that the differences were due to the assessment-driven personalized learning.

	Pre-Onboarding (N = 186)	Post-Onboarding (N = 302)	F	p
Cardiopulmonary systems	79.74 (11.59)	86.93 (9.98)	51.82	<.001
Communication	78.81 (9.92)	85.46 (8.65)	46.33	<.001
Critical thinking	79.11 (9.84)	85.47 (8.62)	53.79	<.001
Endocrine	76.33 (9.84)	81.73 (11.65)	49.76	<.001
Gastrointestinal and genitourinary systems	81.60 (12.82)	86.14 (10.54)	15.82	<.001
Medical-surgical pharmacology	81.43 (11.52)	85.32 (9.86)	11.36	<.001
Neurological integumentary systems	61.86 (43.35)	78.38 (31.73)	20.56	<.001

**TABLE 3** Casey–Fink Nurse Satisfaction Change Scores From Baseline to 12 Months Later by Cohort (Casey et al., 2004)

	Pre-Onboarding	Post-Onboarding
1. I feel confident communicating with physicians.	-0.30	0.88
2. I am comfortable knowing what to do for a dying patient.	0.03	0.48
3. I feel comfortable delegating tasks to the nursing assistant.	-0.05	0.42
4. I feel at ease asking for help from other registered nurses on the unit.	-0.21	0.34
5. I am having difficulty prioritizing patient care needs.	-0.02	0.62
6. I feel my preceptor provides encouragement and feedback about my work.	-0.03	-0.03
7. I feel staff are available to me during new situations and procedures.	0.13	0.11
8. I feel overwhelmed by my patient care responsibilities and workload.	0.05	0.29
9. I feel supported by the nurses on my unit.	0.01	0.27
10. I have opportunities to practice skills and procedures more than once.	0.14	0.09
11. I feel comfortable communicating with patients and their families.	-0.13	0.32
12. I am able to complete my patient care assignment on time.	-0.17	0.53
13. I feel the expectations of me in this job are realistic.	0.00	-0.06
14. I feel prepared to complete my job responsibilities.	0.01	0.39
15. I feel comfortable making suggestions for changes to the nursing plan of care.	0.00	0.67
16. I am having difficulty organizing patient care needs.	-0.06	0.54
17. I feel I may harm a patient because of my lack of knowledge and experience.	-0.17	0.76
18. There are positive role models for me to observe on my unit.	0.00	0.11
19. My preceptor is helping me to develop confidence in my practice.	-0.06	-0.15
20. I am supported by my family/friends.	-0.10	-0.05
21. I am satisfied with my chosen nursing specialty.	-0.31	-0.35
22. I feel my work is exciting and challenging.	-0.17	-0.33
23. I feel my manager provides encouragement and feedback about my work.	0.04	-0.07
24. I am experiencing stress in my personal life.	-0.05	-0.22

### Implications

The personalized learning for onboarding used in the current study was initially utilized by the nurse educators in the Medical-Surgical Residency Program at Virginia Mason Franciscan Health. When a new graduate nurse was unsuccessful with the Medical-Surgical Situational Post Residency Assessment, the nurse educator discovered the learner did not complete their personalized learning plan. As part of the remediation planning process, the personalized learning plan should be completed and then followed by completing a reassessment to close knowledge gaps. The results also allow for individual scores plus clinical performance reports to be used in developing action plans

for struggling new graduate nurses. The nurse educator can use this information to identify those for whom extension of their probation period was needed and for evaluation of eventual termination.

The results of this study validated anecdotal evidence of improved critical thinking by the regional educator facilitator of the Medical-Surgical Residency Program and the Relias administrator for Virginia Mason Franciscan Health. In addition, successful outcomes from this study were the driving factor in expanding the use of Relias Onboarding to the Critical Care and Emergency Department Residency programs in June of 2020. Ideally, with the continual need to be better stewards of our financial resources,

implementation of the evidence-based onboarding containing personalized learning for all new hire registered nurses, regardless of experience, would be prudent.

Organizations and nurse educators onboarding new graduate nurses should include evidence-based programs that have the ability to measure knowledge and critical thinking and the capability to address identified gaps through personalized learning paths. Knowledge and critical thinking are imperative to navigate the higher acuity levels in today's complex care environment. Evidence-based programs that included personalized learning can demonstrate improvements in knowledge, critical thinking, and nurse satisfaction.

### Future Directions for Research

Future research should strive to collect data prospectively in order to ensure that the data are collected in its most usable form, that is, at the individual level. Furthermore, future research should carry out a randomized controlled trial to provide further evidence that the differences seen were causal in nature because of the effect of the assessment-driven personalized learning. Finally, future research should investigate the impact of this personalized learning to other outcomes such as new nurse retention, turnover, and patient outcomes. Effective onboarding programs are crucial for new nurse success, and future research should focus on providing nurse educators a solid evidence-based program from which to make data-driven decisions to support a successful onboarding program.

### Conclusions

Overall, the current study demonstrated that new graduate nurses who completed this assessment-driven personalized learning demonstrated better knowledge, critical thinking, and nurse satisfaction compared to nurses who were onboarded before this was implemented. Future research should confirm these effects and determine if they extend to other outcomes such as retention or nurse stress. Nurse educators should ensure they are implementing onboarding programs that are evidence based to provide the most support possible to new graduate nurses as they transition from the classroom to practice.

### References

Ajani, K., Moez, S. (2011). Gap between knowledge and practice in nursing. *Procedia—Social and Behavioral Sciences*, 15, 3927–3931. 10.1016/j.sbspro.2011.04.396

Bratt, M. M., Felzer, H. M. (2012). Predictors of new graduate nurses' organizational commitment during a nurse residency program. *Journal for Nurses in Staff Development*, 28(3), 108–119. 10.1097/NND.0b013e31825515c4

Bullock, L. M., Paris, L. G., Terhaar, M. (2011). Designing an outcome-focused model for orienting new graduate nurses. *Journal for*

*Nurses in Staff Development*, 27(6), 252–258. 10.1097/NND.0b013e318237114b

Casey, K., Fink, R., Krugman, M., Propst, J. (2004). The graduate nurse experience. *The Journal of Nursing Administration*, 34(6), 303–311.

De Simone, S., Planta, A., Cicotto, G. (2018). The role of job satisfaction, work engagement, self-efficacy and agentic capacities on nurses' turnover intention and patient satisfaction. *Applied Nursing Research*, 29, 130–140. 10.1016/j.apnr.2017.11.004

Eckerson, C. M. (2018). The impact of nurse residency programs in the United States on improving retention and satisfaction of new nurse hires: An evidence-based literature review. *Nurse Education Today*, 71, 84–90. 10.1016/j.nedt.2018.09.003

Fero, L. J., Witsberger, C. M., Wesmiller, S. W., Zullo, T. G., Hoffman, L. A. (2009). Critical thinking ability of new graduate and experienced nurses. *Journal of Advanced Nursing*, 65(1), 139–148. 10.1111/j.1365-2648.2008.04834.x

Goldschmidt, K., Rust, D., Torowicz, D., Kolb, S. (2011). Onboarding advanced practice nurses: Development of an orientation program in a cardiac center. *The Journal of Nursing Administration*, 41(1), 36–40. 10.1097/NNA.0b013e3182002a36

Gupta, P. D., Bhattacharya, S., Sheorey, P., Coelho, P. (2018). Relationship between onboarding experience and turnover intention: Intervening role of locus of control and self-efficacy. *Industrial and Commercial Training*, 50(2), 61–80. 10.1108/ICT-03-2017-0023

Kiel, J. (2012). An analysis of restructuring orientation to enhance nurse retention. *The Health Care Manager*, 31(4), 302–307. 10.1097/HCM.0b013e31826fe298

Kumat-Thoma, E., Ganger, M., Peterson, K., Channell, L. (2017). Reducing annual hospital and registered nurse staff turnover—A 10-element onboarding program intervention. *SAGE Open Nursing*, 3, 237796081769771. 10.1177/2377960817697712

Lee, J. E., Sim, I. O. (2020). Gap between college education and clinical practice: Experience of newly graduated nurses. *Nursing Open*, 7, 449–456. 10.1002/nop.2.409

Ludin, S. M. (2018). Does good critical thinking equal effective decision-making among critical care nurses? A cross-sectional survey. *Intensive & Critical Care Nursing*, 44, 1–10. 10.1016/j.iccn.2017.06.002

Mehta, N., Geissel, K., Rhodes, E., Salinas, G. (2015). Comparative effectiveness in CME: Evaluation of personalized and self-directed learning models. *The Journal of Continuing Education in the Health Professions*, 35(S1), S24–S26. 10.1002/chp.21284

Murray, M., Sundin, D., Cope, V. (2019). Benner's model and Duchscher's theory: Providing the framework for understanding new graduate nurses' transition to practice. *Nurse Education in Practice*, 34, 199–203. 10.1016/j.nepr.2018.12.003

Next Generation NCLEX News. (2018). Retrieved from [https://www.ncsbn.org/NCLEX\\_Next\\_Winter18\\_Eng\\_05.pdf](https://www.ncsbn.org/NCLEX_Next_Winter18_Eng_05.pdf)

NSI Nursing Solutions. (2019). *2019 NSI national health care retention & RN staffing report*. [https://www.nsinursingsolutions.com/Documents/Library/NSI\\_National\\_Health\\_Care\\_Retention\\_Report.pdf](https://www.nsinursingsolutions.com/Documents/Library/NSI_National_Health_Care_Retention_Report.pdf)

Pertiwi, R. I., Hariyati, T. S. (2019). Effective orientation programs for new graduate nurses: A systematic review. *Enfermería Clínica*, 29, 612–618. 10.1016/j.enfcli.2019.04.094

Reebals, C., Wood, T., Markaki, A. (2021). Transition to practice for new nurse graduates: Barriers and mitigating strategies. *Western Journal of Nursing Research*, 193945921997925. Advance online publication. 10.1177/0193945921997925

Song, Y., McCreary, L. L. (2020). New graduate nurses' self-assessed competencies: An integrative review. *Nurse Education in Practice*, 45, 102801. 10.1016/j.nepr.2020.102801

Theisen, J. L., Sandua, K. E. (2013). Competency of new graduate nurses: A review of their weaknesses and strategies for success. *Journal of Continuing Education in Nursing*, 44(9), 406–414. 10.3928/00220124-20130617-38