Effective orientation programs for new graduate nurses: A systematic review

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Abstract
Objective: To determine the most effective orientation program for new graduate nurses (NGNs) in hospital settings.
Method: A systematic review of existing literature was conducted following a search of the electronic databases Science Direct, PubMed, EBSCOhost, ProQuest, and Wiley Online (2008–2018). Searches utilized the following keywords nurse orientation, new nurse orientation, practical orientation, nurse transition, and nurse transition program.
Results: A total of fourteen studies met our review criteria. Evidence from these studies showed that current orientation protocols consist of preceptorship, classes, and simulations of patient care. The most efficacious orientations had well-established goals and utilized proven learning materials, support systems such as preceptorship and mentorship, learning methods, and evaluation instruments within the organization.
Conclusion: Well-designed orientation programs will result in positive effects on NGNs and patient care in the hospital.
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Introduction

Newly graduated nurses (NGNs) undergo a difficult transition period from student to professional nurse following graduation. NGNs are both mentally and emotionally challenged as they adjust themselves to their new profession and organization.1 Existing literature outlines several stressors on NGNs including waiting for National Council Licensure Examination (NCLEX) results, moving away from home to live independently, and adjusting to the new demands of their work environment.2 All of these new responsibilities often produce stress and anxiety.3

NGNs also face certain personal difficulties during the transition period. Studies have shown that lack of confidence, high workloads, orientation issues, fear, frustration, and being overwhelmed are frequent transition difficulties for NGNs.2,4 These can lead to transition-precipitated

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Effective orientation programs for new graduate nurses

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Selection of articles

We employed an adapted PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) model; data selection proceeded through four stages. The keyword search in the five databases yielded 3025 studies. The first step is the identification of the studies from five databases; the second step is exclusion stage was based on the title (n = 204); the third step is exclusion stage based on abstract (n = 77); and the fourth step is exclusion stage on overall content (n = 14). This process is described in Fig. 1. The analysis was carried out specific to the orientation program for NGNs in the hospital using a narrative, descriptive method.

Results

Data search and selection was performed in fourteen studies corresponding to the inclusion criteria. The target samples from those studies were NGNs with sample sizes ranging from three to 521. One of the studies did not specify sample size, and reported only use of a total sampling method. 8 All studies covered implementation of an orientation program either developed by the study authors or based on existing theory and then assessed the results thereof. Research designs varied, and included pilot project 9–13 quasi-experimental, 14, 15 mixed method, 8, 16 non-experimental mixed method, 17 cohort, 18–20 and quasi-experimental pre-test/post-test. 15

Orientation program lengths ranged from six days to one year; one study did not report the length of the orientation program investigated. 10 Activities in these orientation programs included preceptorship 9–13, 18, 20, 21; class-based activities 10, 12, 13, 18, 21; laboratory simulations 10, 12, 13, 18, 21; patient care simulations 19, 13, 18, 19, 21; bedside learning 8; and clinical practice days. 10, 14 Preceptorship and mentorship programs were carried out according to existing practice and modifications introduced by the given preceptor or mentor. One of the studies detailed collaboration with retired nurses referred to as VNA’s (volunteer nurses ambas- sadors) to act as additional mentors for the NGNs. 14 Another described the implementation of pathway orientation to help NGNs and their preceptor begin the preceptorship prior to the commencement of the orientation period. 10

Class activities such as sharing journal assignments, 11, 16, 21 peer group discussions, 11 role-playing, 21 and review of materials provided by the hospital were parts of the orientations investigated for this review. Basic orientation courses included human resources and nursing policies, 10, 17 environmental and safety culture, 10, 11, 16 infection control, 10 emergency procedures, 10 conflict resolution, 18 incident reporting, 18 stress management, 18 professional development, 20, 21 service excellence, 16 ethics, 16, patient rights, 16 and communication. 16

Learning materials were provided regarding the end of life care, 20 therapy and blood transfusion policies, 10 use of medical equipment (such as fluid pumps), 10 human organ systems and their relevant departments (e.g., cardi- ology, respiratory, neurology, hepatobiliary), 17 sepsis, 11 and trauma. 11 New technologies were implemented into certain orientation programs, including a human patient simulator called Laerdal Sim-Man®, 15 computer-based learning, 12, 19 and online materials. 8

A variety of measuring tools were used to evaluate the orientation programs, including the Advisory Board’s Critical Thinking Diagnostic, 21 the New Graduated Nurse Learning Behavior Rating Guide, 21 the Casey-Fink Graduate Nurse Experience Survey 8, 9, 17, 18, 20, 21 the Health Sciences Reasoning Test™ (HSRT), the Clinical Decision-Making in Nursing Scale (CDMNS), 13 and the Half-fer-Graf Job/Work Environment Nursing Satisfaction Survey. 16 Certain studies employed instruments designed by the investigators to evaluate the orientation programs. Aspects evaluated were wide-ranging, including satisfaction, 9, 10, 14, 16, 17 cost savings, 10, 13, 18, 19 time effectiveness, 10, 19 critical thinking 11, 15 retention and turnover, 9, 12, 14, 16–21 performance, 14 effectiveness, 8, 19 confidence, 17, 21 and engagement (Table 3). 9, 16, 17

Discussion

Orientation time given to NGNs is a critical feature for analy- sis, as the length thereof can affect costs incurred and results derived from the program. The shortest orienta-
Table 1  A database search results.

<table>
<thead>
<tr>
<th>Database</th>
<th>Keywords</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Direct</td>
<td>‘nurse orientation’ AND ‘effective orientation’ AND nurse transition</td>
<td>412</td>
</tr>
<tr>
<td>PubMed</td>
<td>‘nurse orientation’ AND ‘effective orientation’ AND nurse transition</td>
<td>34</td>
</tr>
<tr>
<td>EBSCO</td>
<td>‘nurse orientation’ AND ‘effective orientation’ AND nurse transition</td>
<td>130</td>
</tr>
<tr>
<td>ProQuest</td>
<td>‘nurse orientation’ AND ‘effective orientation’ AND nurse transition</td>
<td>2,328</td>
</tr>
<tr>
<td>Wiley Online</td>
<td>‘nurse orientation’ AND ‘effective orientation’ AND nurse transition</td>
<td>121</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3,025</td>
</tr>
</tbody>
</table>

Table 2  Inclusion and exclusion criteria.

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>New graduated general nurse from the hospital</td>
<td>New graduated specialist nurse</td>
</tr>
<tr>
<td>Orientation program in hospital</td>
<td>Nurse practitioner</td>
</tr>
<tr>
<td>Orientation program in specialized units such as</td>
<td>Public health nurse</td>
</tr>
<tr>
<td>the operating room, ICU, emergency department, etc.</td>
<td>Nurse student</td>
</tr>
<tr>
<td>Quasi Experimental Pilot Project Cohort Study</td>
<td>Orientation program in specialized units such as the operating room, ICU, emergency department, etc.</td>
</tr>
<tr>
<td></td>
<td>Opinion/Discussion</td>
</tr>
<tr>
<td></td>
<td>Dissertation</td>
</tr>
</tbody>
</table>

Figure 1  Data searching.
<table>
<thead>
<tr>
<th>No</th>
<th>Author/year</th>
<th>Method</th>
<th>Sample</th>
<th>Measurement tool</th>
<th>Length of orientation</th>
<th>Program</th>
<th>Result</th>
</tr>
</thead>
</table>
| 1  | Allen/2011        | Pilot project                 | 60     | A self-designed tool                                                              | • 8 hours for basic hospital orientation  
• 8 hours for nursing orientation  
• 4 hours for clinical lab  
• Continue with preceptorship (not stated) | • Preceptor  
• Orientation pathway  
• Basic hospital orientation  
• Nursing policies  
• Clinical lab                                                                 | Satisfaction: increase 1%  
Cost saving: $62,000  
Time-effectiveness: complete one week earlier                             |
| 2  | Bittner/2016      | Pilot project                 | 24     | Advisory Board’s Critical Thinking Diagnostic                                       | 400 hours                                                                               | • Simulation  
• Learning activities  
• Reflective journaling  
• FGD  
• Preceptorship                                                                 | Critical thinking: improved at 6 and 12 months interval                              |
| 3  | Roche/2013        | Quasi experimental pilot study| 24     | New Graduated Nurse Learning Behavior Rating Guide                                  | Five weeks                                                                               | HPS simulation case for the intervention group  
Preceptorship for both group                                                                 | Satisfaction: 4.25 (Likert scale 1–5)  
Retention: all participant still employed one year after hire  
Performance: no significant differences between intervention and control group  
Helpfulness: 57.6%                                                                 |
| 4  | Rush/2013         | Mixed methods study           | Not stated | • Casey-Fink Graduate Nurse Experience Survey  
• Orientation to the employer/nursing unit  
• General transition  
• The specific new graduate nurse transition program | One year                                                                               | • Written materials  
• Classroom/theory  
• Simulation/theory  
• Hands-on/bedside learning  
• In service programs/workshops  
• Website/online materials  
• Experimental: Standard new nurse orientation, and six high-fidelity patient simulation experiences with the Laerdal Sim-Man®, a fidelity human patient simulator.  
• Control: Standard new nurse orientation  
• Preceptorship for both group                                                                 | Critical thinking: pretest score of 20.92 (SD = 3.43) compared with a mean posttest score of 21.89 (SD = 2.52) |
<table>
<thead>
<tr>
<th>No</th>
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<th>Program</th>
<th>Result</th>
</tr>
</thead>
</table>
| 6  | Hillman/2011        | Cohort                              | 251    | Casey-Fink Graduate Nurse Experience Survey         | 16 weeks               | • Centralized class day  
• Unit-specific class day  
• Preceptorship  
• Simulation lab  
• Corporate orientation  
• Computer training  
• Experiential learning | Retention: 100%  
Cost saving: 4 million dollar  
Helpfulness: Yes |
| 7  | Murphy/2017         | Cohort                              | 521    | A self-designed tool                                | 6 days                 | • New employee onboarding and central nursing orientation  
• Unit-based orientation  
• The nurse residency program | Turnover: 12.28%  
Cost saving: $156,000  
Time-effectiveness: shortened 8 hours/day  
Confidence: increase in 12 months  
Satisfaction: overall yes  
Engagement: highly engaged |
| 8  | Olson-Sitki/2012    | Non-experimental mix method design  | 31     | Casey-Fink Graduate Nurse Experience Survey         | Three months           | • Graduate Nurse  
• Internship Program (GNIP)  
• Preceptorship  
• Adult learning  
• Interactive Nurse Residency  
• Preceptorship  
• Peers | Competency: improve at 6 and 12 months  
Retention: 11.5% better than control group |
| 9  | Phillips/2014       | Quasi-experimental                  | 4      | Casey-Fink Graduate Nurse Experience Survey         | 12 months              | • VNA (volunteered nurse ambassador) from a retired nurse | Satisfaction: yes  
Engagement: yes |
| 10 | Anderson/2009       | Mix qualitative-quantitative        | 90     | Halfer-Graf tool/Work Environment Nursing Satisfaction Survey | One year                | • A Collaborative Model  
• Preceptorship  
• Simulation  
• Nurse Residency Program  
• Preceptorship | Cost saving: over $19,000 |
| 11 | Baldwin/2016        | Pilot project                       | 3      | A self-designed tool                                | 18 weeks followed mentoring for one year | • UHC/AACN New Graduate  
• Nurse Residency Program  
• Preceptorship | Retention: 78%  
Engagement: yes |
| 12 | Horwarth/2016       | Pilot project                       | 5      | A self-designed tool                                | Eight weeks            | • UHC/AACN New Graduate  
• Nurse Residency Program  
• Preceptorship | Engagement: yes  
Satisfaction: yes |
| 13 | Kowalski/2010       | Cohort                              | 55     | • A self-designed tool  
• Pagana’s clinical stress questionnaire  
• Spielberge’s state-trait anxiety inventory  
• Casey-Fink Graduate Nurse Experience Survey  
• Graduate nurse residency program evaluation | One year              | • UHC/AACN New Graduate  
• Nurse Residency Program  
• Preceptorship | Retention: before 40%, after 100%  
Engagement: yes  
Satisfaction: yes |
tion time in the study was six days, while the longest was twelve months. Comprehensive orientation processes correlated significantly to the length of orientation\(^{22}\); research suggests that the NGN orientation period should be at least four weeks long.\(^{23}\) All articles reviewed for this study met this guideline except for one, wherein the period was six days.\(^{19}\)

Most researchers reported a support system comprised of a preceptor, classes, and simulations. Although the role of the preceptor is challenging, many studies suggested that a successful preceptorship can increase NGN job satisfaction and retention of NGNs leading to decreased turnover.\(^{24}\)

One successful support system included mentoring by a VNA; NGNs reported high rates of satisfaction with the program.\(^{12}\)

In this system, retired nurses are recruited to shadow the NGNs while they provide nursing care to their patients. In addition to good mentorship, classes and simulations are also an essential part of the orientation process to provide a safe and productive learning environment. Research shows that simulations of common clinical events in a group setting help NGNs to develop clinical reasoning and decision making skills.\(^{25}\)

Classroom materials could be categorized into hospital and nursing policies, anatomical and physiological systems reviews, and international accreditation standards, with the goal of bringing theory into practice. Studies have intimated that NGNs feel underprepared for practice because expectations of registered nurses are much greater than those of students, prioritization of care is difficult to put into practice, and the workload can impede focus.\(^{26}\) Classroom materials detailing the human body systems as they relate to clinical practice help NGNs connect their education to real-life situations. Specific information about standards of accreditation and hospital nursing policies help NGNs to better assimilate into the hospital culture. Education about safety, quality improvement, patient-centered care, communication, and teamwork, all included in the standard of accreditation, resulted in fewer reported patient care errors, and fewer unsafe practices.\(^{27}\)

All orientation programs in all studies examined for this review reported positive impacts such as increased retention and reduced turnover, and increased job satisfaction among NGNs during their transition phase. Research shows that the orientation program is essential to NGN job satisfaction and increased retention rates.\(^{28}\) Other studies report other positive effects of orientation, to include better support, improved socialization, and a positive clinical learning environment.\(^{29}\) Established orientation programs were associated with higher retention rates, higher competency levels, better job satisfaction, and lower stress levels.\(^{27}\)

Orientation geared toward improved competency can also build good perceptions of interpersonal (72.4%), technical (53.4%), and critical thinking skills (58.6%) in newly hired nurses.\(^{10}\)

In addition to planning activities carried out during orientation, it is important for the hospital to establish specific objectives for the orientation program. Determining goals can be done together by the preceptor and NGNs in the form of orientation pathways.\(^{10}\) In a pathway, the objectives and means by which goals can be achieved during the orientation process are written down. This is done so that the NGNs and preceptors can remain focused on the objectives that must be achieved. It is also essential to evaluate orientation activities during the orientation process, by comparing results with stated objectives. Hospitals can design their evaluation instruments or use one that is already available. In studies analyzed for this review, four of the fourteen studies used the Casey-Fink Graduate Nurse Experience Survey in the evaluation process.\(^{8,9,17,18,20,21}\) Instruments that have been tested for validity and reliability can help to ensure usable data.

### Conclusion

Nursing managers should design and manage orientation programs aligned with evidence-based research. Modifications can be made as necessary with regards to the hospital’s available budget and existing technology. Orientation length should be determined in accordance with orientation goals and activities. Components of a successful orientation program are learning materials, support systems, and learning methods with proven efficacy. Nursing managers must also design measurable goals for the program and NGNs to enable evaluations in real time of orientation programs so managers can make continuous improvements to existing systems.

### Conflict of interests

The authors declare no conflict of interest.

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