

Strategies to promote the professional transition of new graduate nurse practitioners: A systematic review

Chandra Speight¹  | Gina Firnhaber²  | Elaine S. Scott³  | Holly Wei³ 

¹College of Nursing, East Carolina University, Greenville, North Carolina

²College of Nursing, East Carolina University, Greenville, North Carolina

³College of Nursing, East Carolina University, Greenville, North Carolina

Correspondence

Chandra Speight, College of Nursing, East Carolina University, 2205 W Fifth Street, Greenville, NC, 27889.

Email: speightc92@students.ecu.edu and chandrasp8@gmail.com

Abstract

New graduate nurse practitioner (NP) postgraduate support programs and interventions have proliferated, sparking controversy. The Institute of Medicine/National Academy of Medicine recommends residency programs for new graduate NPs; however, the NP community debates whether new graduate NPs need additional training and whether such training compromises patient access to care. This systematic review aimed to synthesize evidence regarding the effectiveness of interventions and strategies to promote the professional transition of new graduate NPs. Interventions identified in the current literature included fellowship programs and a webinar. Strategies included mentorship, experiential learning, interprofessional training, and professional socialization. The studies reviewed primarily evaluated NPs' perceptions of the interventions' effects on their professional transitions. The findings from this systematic review highlight challenges in evidencing postgraduate support programs. The small number of available studies underscores a critical problem for the NP community: additional evidence is needed to inform whether and how to support new graduate NPs as they transition to practice.

KEYWORDS

fellowship, new graduate, nurse practitioner, postgraduate education, residency, transition

1 | INTRODUCTION

More than 26,000 nurse practitioners (NPs) graduated between 2016 and 2017.¹ Systematic reviews and meta-analyses have demonstrated NPs provide safe, effective care.²⁻⁴ However, new graduate NPs doubt their competence and characterize the transition from student to certified NP as a time of anxiety and self-doubt.⁵⁻⁸ A majority of new graduate NPs express interest in postgraduate education programs: 58% reported they were extremely interested and 32% reported they were somewhat interested in postgraduate education programs.⁶ Experienced NPs also report value in postgraduate education, and an overwhelming majority (80%) would have been interested in postgraduate education had it been available.⁹

The first NP postgraduate education program was implemented in 2007.¹⁰ Support for postgraduate education programs grew when

the Institute of Medicine/National Academy of Medicine¹¹ recommended that all new graduate nurses, including advanced practice nurses, receive residency training. Advocates for postgraduate NP training programs cite IOM/NAM recommendations, new graduate NPs' interest in the programs, and increasing patient complexity.^{12,13} However, others argue that postgraduate education is expensive, unnecessary, and a potential barrier to autonomous practice and consumer access to healthcare.¹⁴⁻¹⁶

In response to the IOM/NAM recommendations, in May 2014, an NP Roundtable, composed of the AANP, the Gerontological Advanced Practice Nurses Association, the National Association of Pediatric Nurse Practitioners, the National Association of Nurse Practitioners in Women's Health, and the National Organization of Nurse Practitioner Faculties, convened to discuss postgraduate education. They issued a joint statement on NP postgraduate training

that asserted NPs are prepared for practice from the point of graduation. The NP Roundtable joint statement also argued NP postgraduate education is not necessary for competency development or patient safety and should remain optional. The NP Roundtable also advocated for the use of the term “fellowship” rather than “residency” to describe postgraduate training. Labeling postgraduate programs “fellowships” avoids the potential equation of NP programs with medical education residencies, which are a required component of physician training. Furthermore, the NP Roundtable noted that some universities call NP student clinical rotations that are required for graduation “residencies.” The term “fellowship” emphasizes the optional nature of the postgraduate programs and avoids confusion with required clinical experiences.

Despite concerns about the necessity and impacts of postgraduate NP education, in 2016 the IOM/NAM reaffirmed their recommendation that all new graduate nurses participate in residency programs.¹⁷ As a result of this recommendation, postgraduate NP transition programs have proliferated. In 2017, 68 new graduate NP programs were identified across the United States.¹⁸ By 2018, 91 programs were found.¹⁹

Evidencing the debate over whether and how to support new graduate NPs is critical to the NP community as we strive to balance supporting new graduate NPs, containing costs, and assuring consumer access to care. No researchers, however, have synthesized the available evidence on the effectiveness of interventions to promote the professional transition of new graduate NPs. This review seeks to fill this gap by identifying and synthesizing evidence surrounding interventions, transition strategies, and measured outcomes in programs supporting new graduate NPs.

2 | METHODS

The literature search was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Databases searched included CINAHL, PubMed, and ProQuest Nursing & Allied Health. To capture studies assessing the impact of interventions and strategies supporting the transition of new graduate NPs into professional practice, various combinations of keywords and subject headings including “nurse practitioner,” “nurse practitioners,” “internship,” “residency,” “postgraduate education,” “fellowship,” “onboarding,” and “role-transition” were used. Google Scholar and the reference list of each study included for full-text review were also used to identify potential studies. The search identified 1429 nonduplicate items.

Criteria for inclusion required articles to reflect research-based studies or program evaluations published between 2007, the date of the first formal NP postgraduate training program,¹⁰ and January 2019, when the review was conducted. Studies had to focus on the effectiveness or impacts of interventions and strategies to promote the professional transition of new graduate NPs, defined as NPs who had graduated within the past 5 years. Outcomes could be broadly defined, at the individual or organizational levels, and could include

NP outcomes such as competency development, job satisfaction, and role transition; organizational outcomes such as retention; and patient outcomes such as patient safety. Since education, licensing, and practice standards for NPs vary internationally, only studies conducted in the United States and published in English were included. Studies considering NPs with population focuses including acute care, adult, adult-gerontology, adult psychiatric-mental health, family, neonatal, and pediatric were considered.²⁰ Studies focused on clinical nurse specialists, nurse anesthetists, and nurse midwives were excluded.

Titles and abstracts were reviewed based on inclusion/exclusion criteria. Articles deemed not to meet criteria were excluded. The title and abstract review eliminated 1373 items, leaving 56 items for full-text review.

2.1 | Critical appraisal

Fifty-one of the 56 items reviewed were excluded based on the following: wrong outcome (10), no or insufficient outcomes (16), wrong population (16), wrong publication type (7), foreign language (1), and duplicate study (1). Several concerns arose during the appraisal that required discussion and consultation among the authors. Studies were encountered that grouped inexperienced and experienced NPs together. Often, the included NPs were new to the organization offering the intervention but were not new graduate NPs. Because this review focuses on the new graduate NP, these studies were excluded. Similarly, studies were encountered that grouped NPs with other advanced practice providers, such as physician assistants (PAs). The experience and education paths of NPs differ from PAs; therefore, these studies were also excluded.

2.2 | Methodological quality

Each study was reviewed for methodological quality using the Joanna Briggs criteria. Small sample sizes, lack of control groups, and potential bias were key concerns. Each article was included given the small number of studies that met the inclusion criteria.

3 | RESULTS

Five articles representing four studies met the inclusion criteria. The PRISMA flow chart (Figure 1) presents the stages of the literature search. For this review, transition programs will be called fellowships to reflect NP Roundtable recommendations.

3.1 | Study characteristics

Table 1 details the characteristics of the included studies. Four articles representing three studies examined fellowship program interventions^{10,22-24} and one considered a webinar intervention.²⁵ Sample sizes ranged from 7²⁴ to 36.^{22,23} Two studies implemented the intervention at single sites^{10,24} while one study described in two

FIGURE 1 PRISMA flow diagram. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses²¹

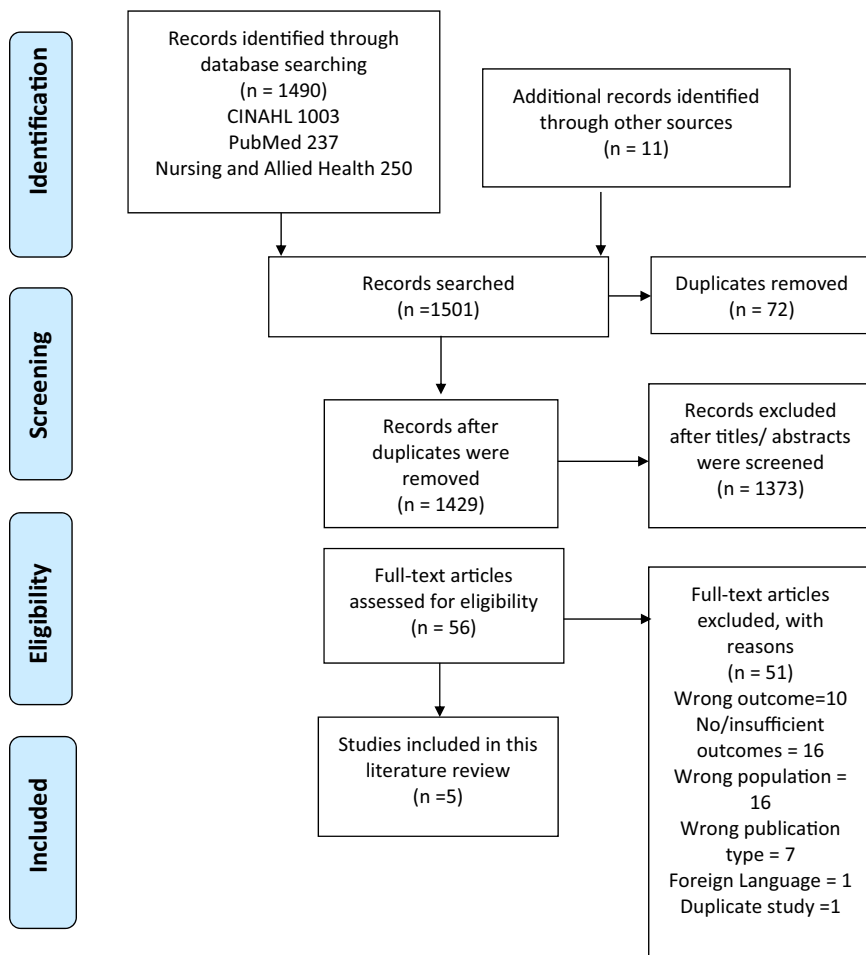


TABLE 1 Study characteristics and intervention description

Author/Year	Design	Intervention description
Flinter et al ¹⁰	Qualitative	12 mo residency
	Descriptive	2 new graduates work together, share assigned mentor Organizational onboarding, population education Didactic curriculum, precepted clinical sessions, shared visits Reduced patient assignments Specialty care rotations, reflective journaling
Rugen et al ²²	Quantitative	12 mo residency
	Descriptive/	Interdisciplinary team learning, assigned mentor
Rugen et al ²³ (Same intervention)	Qualitative	Precepted clinical sessions, shared visits
	Descriptive	Reduced patient assignments Optional specialty care rotations
Thompson ²⁵	Quasi-experimental	2 h webinar
	Pretest/posttest	Describes role transition, credentialing concerns, professional development
Zapatka et al ²⁴	Qualitative	12 mo residency
	Descriptive	Interdisciplinary team learning; NP/MD mentor dyad Precepted clinical sessions, shared visits Reduced patient assignments Didactic curriculum, specialty care rotations Mentored research activities

articles^{22,23} implemented the intervention at multiple sites. Practice environments included six Veterans Administration (VA) primary care sites and one primary care federally qualified health care center. One study²⁵ delivered an online intervention and did not report participants' practice environments, though all participants practiced in Midwestern states. Included studies range in publication year from 2014 to 2019. Among the five articles selected, three are qualitative descriptive studies,^{10,23,24} one is a quantitative descriptive study,²² and one is a quantitative quasi-experimental pretest-posttest design.²⁵

3.2 | Interventions implemented

Two main interventions were reported: fellowship programs and a webinar.

3.2.1 | Fellowship programs

Four articles described three fellowship program interventions. Three studies^{10,22-24} focused on fellowship programs for new graduate NPs in primary care settings. Fellowship programs were designed to transition new graduate NPs from academic settings into their professional roles. The three fellowship programs were each 12 months in length.

3.2.2 | Webinar

A 2-hour, recorded role transition webinar was developed and described by Thompson.²⁵ The evidence-based webinar focused on educating new graduate NPs about issues of importance to transition such as common role transition experiences, regulatory environments, liability concerns, contract negotiations, professional development theories, and certification requirements.²⁵

3.3 | Strategies

3.3.1 | Mentorship

The three fellowship programs employed the strategy of mentorship: new graduates were assigned physician or NP mentors. Content analysis of reflective journals,¹⁰ open-ended survey questions,²³ and semi-structured interviews²⁴ all found new graduate NPs valued mentorship. NPs identified engaged mentors and protected time to spend with their mentors as essential to self-described confidence and competency development^{10,23} and confidence in clinical knowledge.²⁴

3.3.2 | Experiential learning

The three fellowship programs also employed the strategy of experiential learning. Qualitative descriptive analysis across three studies^{10,23,24} found that new graduate NPs valued shared patient visits, where a senior clinician observed the new graduate and coached him or her on patient interactions and plan of care

development. Participants also identified specialty care rotations as valuable in promoting confidence and competency development¹⁰ and confidence in clinical knowledge.²⁴ New graduate NPs also found mentored procedures to be important to the development of competency in performing procedures.²³

3.3.3 | Interprofessional training

Fellowship programs used the strategy of interprofessional learning to enhance new graduate transition; new graduate NPs worked in teams with other healthcare professionals, including dietitians, medical assistants, medical residents, nurse case managers, pharmacists, and psychologists. Qualitative descriptive analysis across three studies found that new graduate NPs considered interprofessional training opportunities essential to their transition to practice.^{10,23,24} Interprofessional training helped fellows develop a deep understanding of the NP role and understanding of others' professional roles and responsibilities. These understandings facilitated purposeful interprofessional partnerships that promoted a sense of providing more effective patient care.²⁴ New graduate NPs also valued the role of specialty care rotations in the development of the communication skills needed to consult effectively with specialty care providers.^{10,23}

3.3.4 | Professional socialization

All the described interventions integrated professional socialization as a strategy. Fellowship program socialization activities included health policy and advocacy lectures, conflict resolution, time management, and interprofessional discussion about professional roles and collaboration.²²⁻²⁴ Those who completed the VA fellowship program reported that the professional development activities the program offered contributed to a smoother professional transition.²³ The online intervention focused on providing new graduates with evidence about the challenges of the transition period, thus socializing them to the demands of their new roles; however, results did not support this intervention as linked to improved role transition.²⁵

3.4 | Outcomes assessed

Most of the studies reviewed relied on NPs' perceptions of effectiveness to assess the relationship between the intervention or strategy and outcomes. Nurse practitioners' perceptions were identified via content analysis of reflective journals,¹⁰ open-ended survey questions,²³ and semi-structured interviews.²⁴ Rugen et al,²² however, developed a competency measurement tool and had both new NPs and their mentors rate the NP's competence at the beginning of the program, after 6 months, and at the program's conclusion. Both NPs and their mentors rated competencies as improving overtime in seven competency domains: clinical, leadership, interprofessional team collaboration, patient-centered care, shared decision-making, sustained relationships, and performance improvement. Competency tool analysis indicated that the NPs were

prepared to practice independently by the end of the fellowship program, suggesting the intervention as a whole contributed to NP competency development.

Thompson²⁵ measured the success of the intervention by comparing respondents' scores on the Nurse Practitioner Role Transition Scale (NPRTS) before and after the intervention. Participants were provided an electronic link to the webinar and asked to watch it 1 to 2 weeks after taking a pre-survey that included the NPRTS. They were asked to complete the post-survey with NPRTS 2 to 3 months after watching the webinar. This NPRTS has been used in several NP populations^{26,27} but has not been used in before-after studies as Thompson²⁵ employed the tool. Respondents' mean NPRTS scores were not statistically significantly different after the intervention, suggesting that the intervention did not contribute to the improved professional transition of the NPs.

4 | DISCUSSION

4.1 | Measurement challenges

Findings from this review reveal challenges in evaluating interventions for new graduate NPs. The IOM/NAM¹¹ recommended organizations assess the impacts of fellowship programs on new graduate competency development, new graduate retention, and patient outcomes. The four studies attempted to link interventions to NP competence and role transition and predominately depended on respondents' perceptions. None of the studies measured NP retention or linked NP transition interventions to patient outcomes. The small number of studies found and the relative weakness of their evaluation measures likely reflect the emerging nature of the science on new graduate NPs. The shortage of robust measurement tools also reflects the emerging nature of studies on new graduate NPs. One recent review found a lack of validated tools to effectively measure NP competency development²⁸ while another identified reluctance and difficulty measuring new graduate NP medication prescribing competence.²⁹ Rugen et al²³ use of a competency-measurement tool, the development of which is detailed in Rugen et al,³⁰ marks a significant step toward stronger evaluation measures. A strong recommendation from this review is that objective competency development measurement tools specific to various NP population foci (eg, neonatal, family, adult, oncology) be developed and refined and that these tools be used to measure competence before, during, and after interventions supporting new graduate NPs.

The relatively recent proliferation of interventions to support new graduate NPs, the controversy surrounding them, and a lack of standards may also contribute to the weak nature of evidence to support their impacts. Yet, as programs are proliferating, standards are being established. The National Nurse Practitioner Residency and Fellowship Training Consortium began accrediting programs in 2016 and had accredited five programs as of April 1, 2019³¹: the Community Health Center, Inc. Nurse Practitioner Residency in Family Practice and Community Health in Middletown, CT; the North Mississippi Medical Center Advanced Practice Clinician Fellowship in Tupelo, MS; the Western North Carolina Community Health Services

Advanced Practice Safety Net Residency in Asheville, NC, and the International Community Health Services Advanced Registered Nurse Practitioner Residency Program and the Sea Mar³² Community Health Centers Family Nurse Practitioner Residency, both in Seattle, WA. In January 2019, the Commission on Collegiate Nursing Education announced an initiative to create an accreditation program for NP residencies and fellowships.³³ As accreditation programs and expectations develop, evaluation and measurement tools may become more widespread and robust.

Finally, broader studies on NP role transition may also offer tools for measuring variables of importance to the science on new graduate NPs. Previous researchers identified links between post-graduate education and NP job satisfaction using the Misener Nurse Practitioner Job Satisfaction Scale³⁴ and linked a formal orientation to improved role transition among NPs using the NPRTS.²⁷ Organizational support was associated with improved role transition as measured by a modified Casey-Fink Graduate Nurse Experience Survey.³⁵ While these studies did not focus on new graduates, organizations offering interventions to new graduate NPs might use measures these researchers employed.

4.2 | NP competency

Although the IOM/NAM¹¹ recommended programs evaluate their impacts on competency development, the NP Roundtable³⁶ and many NP leaders maintain that NPs are competent practitioners from the point of graduation and do not require additional training.^{14,15} They raise important concerns that mandating post-graduate education may inhibit NPs from working in rural and underserved areas that do not have the resources to provide costly postgraduate support to new NPs. A focus on measuring competency may also suggest to the public that new graduate NPs lack competency, a finding not supported by research.

Public interest and policy groups including the American Association of Retired Persons, the National Governors Association, the Federal Trade Commission, and the Robert Wood Johnson Foundation recognize that NPs provide safe, cost-effective care and advocate for states to remove restrictive practice barriers.³⁷ Groups opposing the removal of barriers that restrict patients' access to NP care could exploit competency measurement to support their arguments that NPs need physician oversight to practice safely. In light of these concerns, perhaps alternative terminology should be considered. Programs could term competency related outcomes *role development* or *proficiency development*. Such terms avoid the suggestion that NPs are not competent practitioners at graduation and reflect the evolving nature of all clinicians' capabilities.

4.3 | Reporting recommendations

This review also found missed opportunities to reflect on how interventions affect new graduate NPs. Several studies that might have offered evidence for the effectiveness of strategies and interventions to support new graduate NPs were excluded because

the researchers did not isolate new graduate NPs when reporting results. When new NPs are grouped with experienced NPs, and there is limited stratification of outcome reporting, the effects of the interventions on new graduate NPs are unclear (eg,^{38,39}). We do not believe experienced NPs should be excluded from residencies, particularly if they are changing practice environments, but their transition and thus the interventions' effects likely differ from the effects on new graduates. Similarly, some studies grouped outcomes for NPs and PAs together, making it difficult to determine the actual impact on NPs (eg,^{40,41}). Although NPs and PAs sometimes work in similar roles, the disciplines' educations and roles differ. Reporting evidence independently for each profession would be more informative in evaluating the impact on each group.

4.4 | NP and RN role transition

The literature on interventions for new graduate NPs parallels the literature on the transition of new graduate registered nurses (RNs). New graduate RN transition programs are widely accepted nationally and internationally and number in the hundreds. Despite their prevalence, a recent international systematic review of these programs and the impacts on new graduate RNs included only 30 studies. The authors concluded that studies on interventions were methodologically weak and offered little evidence supporting the impact of RN transition programs.³³ In addition, an integrative review of the influences of transition programs for new graduate RNs on competency development and patient safety found relatively few studies and limited evidence supporting residency programs' impacts on these variables.⁴² Outcome studies that evaluate the influence of NP fellowships on competency and patient safety would likewise be beneficial for the development of this science. As each discipline develops more rigorous outcome measurement expectations and standards, the literatures can learn and grow from each other, as tools may be modified from RN to NP and vice-versa.

5 | CONCLUSION

This review examined research on promoting new graduate NP professional development published since 2007, the year of the first new graduate NP residency program. The IOM/NAM¹¹ recommended assessing programs' impacts on competency development, retention, and patient outcomes. The small number of available studies highlights a critical problem for the NP community. Additional evidence is needed to inform the impact of these programs. As indicated in this review, the few available studies are characterized by a lack of methodological rigor. However, though the findings are limited, they provide initial evidence for the programs' impacts and provide an opportunity for dialogue about how outcomes can be more effectively measured. Included studies also provide insight into how more robust measurement tools can be developed. Those designating and implementing postgraduate support interventions for new graduate NPs must remember the IOM/

NAM's¹¹ recommendation to collect data regarding the effects of transition programs. Without such data, the NP community lacks evidence about whether and how to support new graduate NPs as they transition to practice.

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS

CS and GF developed the search criteria in consultation with ES and HW. CS and GF completed the initial search and assessed articles for inclusion; ES resolved disagreements between CS and GF. ES also consulted when the first two authors encountered issues in assessing study quality. CS wrote the initial draft of the manuscript. GF revised significant portions of the methods sections. Wei guided the process, revised the manuscript, and served as a mentor throughout the research, writing, and editing process.

ORCID

Chandra Speight  <http://orcid.org/0000-0002-5343-2363>

Gina Firnhaber  <http://orcid.org/0000-0003-4641-0913>

Elaine S. Scott  <http://orcid.org/0000-0003-1381-6431>

Holly Wei  <http://orcid.org/0000-0001-7440-1761>

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AUTHOR BIOGRAPHIES

Chandra Speight, MSN, RN, NP-C, PhD Candidate, College of Nursing, East Carolina University, Greenville, NC.

Gina Firnhaber, PhD, RN, Clinical Assistant Professor, College of Nursing, East Carolina University, Greenville, NC.

Elaine S. Scott, PhD, RN, FNAP, Professor, College of Nursing, East Carolina University, Greenville, NC.

Holly Wei, PhD, RN, CPN, Assistant Professor, College of Nursing, East Carolina University, Greenville, NC.

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