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Instruments to Evaluate Nurse Residency Programs

CE 1.5 ANCC Contact Hours

A Review of the Literature

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The purpose of this literature review was to explore evaluation instruments used by nurse residency programs to evaluate outcomes. The 15 studies found yielded 26 instruments, and all instruments were subjective, dated, and varied in how they were used. Nursing professional development practitioners should use a combination of reliable, valid, and current evaluation methods to appraise their nurse residency programs in order to demonstrate program quality and effectiveness.

In the *Future of Nursing* report, the Institute of Medicine (2011) defines nurse residency programs (NRPs) as "planned, comprehensive periods of time during which nursing graduates can acquire the knowledge and skills to deliver safe, quality care that meets defined standards of practice" (p. 121). This report recommended the implementation of NRPs, and these programs have been increasing over the last decade (Pittman, Herrera, Bass, & Thompson, 2013). NRPs are used to facilitate the transition of new graduate nurses into the practice by providing them with time and support through a comprehensive program. In a recent update of the *Future of Nursing* report, the evaluation of NRPs quality and effectiveness was found to be inconsistent (National Academies of Sciences, Engineering, and Medicine, 2015). NRPs need to demonstrate value and effectiveness by using measureable outcomes (National Academies of Sciences, Engineering, and Medicine, 2015). The purpose of this literature review was to discover what instruments are being used by NRPs to evaluate outcomes.

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Theoretical Framework

Kirkpatrick's (1998) framework for training evaluation describes four levels of training outcomes—reaction, learning, behavior, and results. Level 1 (reaction) assesses the participant's reaction to the training program or their level of satisfaction with the program (Rouse, 2011). This level of evaluation defines the trainee's subjective perception of the quality of a program. Items used in this type of evaluation demonstrate if the trainee liked the training and whether it was a good use of their time. Level 2 (learning) evaluations are quantifiable and demonstrate a change in knowledge, skill, or attitude of the trainee compared to before the intervention (Rouse, 2011). Level 2 answers the question of whether attendees learned what was taught and is usually measured via assessments or tests. Level 3 (behavior) measures the learners' change in behavior due to the intervention (Rouse, 2011). This level answers the question of whether the learning was applied and is typically measured by observation over time. Level 4 (results) assesses the impact of the learning on the wider organization or environment (Rouse, 2011). Level 4 measures are typically organizational performance indicators, such as financial outcomes. This level of evaluation demonstrates value to an organization and provides information couched in a business perspective for key stakeholders.

Evaluating the effectiveness of NRPs is critical in gaining stakeholder support for the program. Evaluation should be done in a strategic, intentional manner with the plan for evaluation beginning during the planning phase of a program. The Kirkpatrick framework was chosen in order to analyze the instruments found according to the level with which they evaluate an NRP and because the framework is a widely used and accepted model for program evaluation.

METHODS

Search Strategy and Eligibility

A literature review was informed by Preferred Reporting Items for Systematic Reviews and Meta-analyses guidelines (Moher et al., 2015). CINAHL, ERIC, PsychINFO, and

MEDLINE databases were searched using search terms "New Graduate Nurse Program," "Nurse Residency Program," and "Nurse Intern Program" with the qualifier "AND Outcomes." Additional search limitations included January 2010 to March 2017, peer-reviewed, English language, and "find all of my search terms." Primary studies about the outcomes of postlicensed new graduate NRPs were included. Exclusion criteria included articles about nurses having greater than 1 year of experience, advanced degree nurses or other disciplines, articles about prelicensed new nurses or articles about new nurses not participating in a formal NRP. Articles that did not indicate a quantitative measurement instrument or were not available online were excluded.

Data Selection and Extraction

Data management and selection process following Preferred Reporting Items for Systematic Reviews and Meta-analyses guidelines are shown in Figure 1. Search selection was conducted independently by one reviewer. Titles were reviewed for inclusion criteria, followed by abstract review, and then full text review. Data were extracted by one reviewer. The second reviewer verified that article selection was conducted per the protocol. Using the search strategies in the four databases, 336 articles were identified. After duplicates were removed, 212 articles remained, and inclusion and exclusion criteria were then applied. After inclusion and exclusion criteria, 197 articles were excluded, leaving 15 studies.

RESULTS

After data extraction of the 15 studies, 26 individual instruments were found to evaluate 15 NRPs. NRPs implemented a variety of program curriculum using teaching strategies of simulation, clinical orientation, didactic classes, or a combination of the three. Specific curriculum programs included University Health System Consortium/American Association of Colleges of Nursing (UHC/AACN), Versant and Novice Leadership Initiative. The majority of the instruments were used to evaluate NRPs of 12-month duration, and most of the NRPs included a clinical orientation in combination with didactic learning and, in some cases, a simulation experience. Five of the 15 studies evaluated UHC/AACN curriculum NRPs, 1 study evaluated a simulation-based NRP, and 10 of the 15 studies looked at NRPs that were investigator-developed. The 26 instruments were subjective instruments that the new nurse completed at various phases of the NRP. Seven studies used the instruments in a pretest/posttest design, with five of those designs including repeated measures. Six studies used the instruments as a posttest measure only, whereas two studies measured as repeated measures during NRP implementation. A summary of the studies reviewed are included in Table 1.

The 26 instruments found were used 39 times in the studies reviewed. Descriptions of each instrument are included in Table 2, along with the frequency each tool was used in the 15 studies. The Casey–Fink Graduate Nurse Experience Survey was used in nine separate studies and was revised by the investigators in three of those studies. This alteration primarily included the solitary use of the instrument's section 2 that measures only six factors—support, patient safety, stress, communication/leadership, and professional satisfaction. The McCloskey/Mueller Satisfaction Scale was used in four separate studies in its original format. The Gerber Control Over Nursing Practice Scale, Jenkins Clinical Decision Making in Nursing Scale, and Posner and Kouzes' Student Leadership Practices Inventory were each found twice in the literature. Posner and Kouzes' Student Leadership Practices Inventory was revised and combined with a more global leadership scale in one study (Chappell, Richards, & Barnett, 2014). The remaining 21 instruments were each mentioned once. Seven of the instruments were investigator-developed for their specific NRPs. One author (Dyess & Sherman, 2011) combined the Student Leadership Practices Inventory with two items from the Clinical Leadership Survey for a 15-item instrument with Cronbach's alpha of .9 and .89 for the two instruments included.

One instrument used was developed in 1979 (Mowday, Steers, & Porter, 1979). Seven instruments were developed or revised in the 1980s. Five instruments used were developed in the 1990s. Patrick, Laschinger, Wong, and Finegan's (2011) Clinical Leadership Survey was developed in the 21st century.

DISCUSSION

Age and Availability of Instrument

The age of the instruments found in this literature review warrants further investigation into more current instruments available for use. Because of the current landscape of practice and the ever-changing needs in health care, it is important that instruments used for evaluation are rigorously tested and current. Although NRPs have shown to be significant assets to an organization, the cost of running such a program requires that nursing professional development (NPD) practitioners advocate for the benefit of these programs with viable data. In addition, the evidence regarding how an NRP can lead to successful outcomes is continually growing and changing. As a result, it is critical that NPD practitioners use data obtained from instruments that are reliable, valid, and current. Validity testing ensures that the instrument measures what it is supposed to measure, and reliability testing ensures that the instrument consistently measures the construct (Melnyk & Fineout-Overholt, 2011). By establishing reliability and validity, the NPD practitioner is ensuring that the data obtained is accurate and meaningful. Instruments should be used in the format in which they were tested and shown to be reliable and valid. In the literature review, eight programs

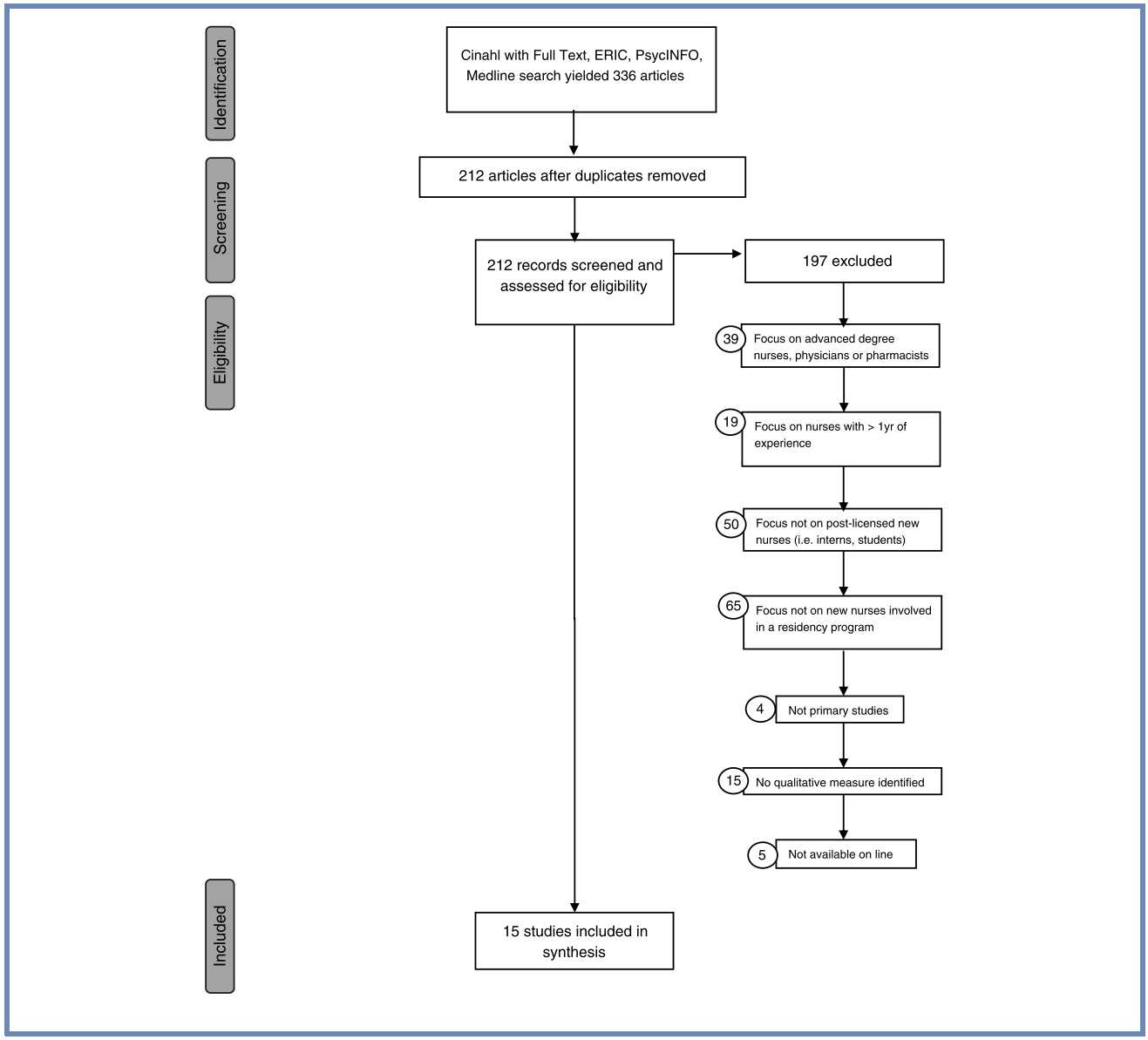

FIGURE 1 Literature review process.

develop an instrument specific for their NRP or they revised a current instrument to fit the evaluation needs of the program. As a result, nine of these subjective measures did not have reliability and validity data reported.

Evaluation Levels

Most of the 26 instruments found required nurse residents to measure their personal perceptions of the concept asked. The majority of the instruments were either self-reporting the resident's perception of the program—a Level 1 form of evaluation according to Kirkpatrick (1998)—or a perception of their change in knowledge, skill, or attitude—a Level 2 form of evaluation according to Kirkpatrick (1998). One instrument was a Level 3 evaluation according to Kirkpatrick's (1998) framework and measured the nurse resident behavior resulting from a simulation experience by facilitator observation (Beyea, Slattery, & von Reyn, 2010). Other forms of evaluation including knowledge testing (Level 2) and in-practice observation (Level 3) should be considered when evaluating the effectiveness of a program. Higher levels of evaluation (Level 4) including nurse resident retention data and organizational outcomes data—including return on investment—should be considered. The majority of the instruments found in this literature review measured only the lowest two levels of evaluation. NPD practitioners should seek instruments that assess high levels of evaluation to validate the effectiveness of the NRP.

TABLE 1 Article Search Results

Reference	Study Design	NRP Strategies and Curriculum Used in Study	Length of Program	Quantitative Instruments	Sample Size	Outcomes
Beyea et al. (2010)	Pretest/posttest	Simulation	12 months	• Investigator-developed Global Confidence, Competence and Readiness for Practice Scale • The Competency Questionnaire: Nursing Readiness for Entry to Practice • Investigator-developed Structured Simulation Clinical Scenario Instrument	260 nurse residents in 1 academic hospital	Competence, confidence, readiness for practice, learning experience, effectiveness and pertinence, retention
Bratt, Baernholdt, & Pruszynski (2014)	Pretest/posttest with repeated measures	Clinical Orientation & Didactic	12 months	• Clinical Decision-Making in Nursing Scale • Nurse Job Satisfaction Scale • Job Stress Scale • Modified 6-D Scale of Nursing Performance • Mowday et al.'s Organizational Commitment Questionnaire	468 nurse residents in 25 rural and urban hospitals	Decision-making ability, job satisfaction, nursing role performance, organizational commitment, job stress, orientation experience, work environment, skill development
Chappell et al. (2014)	Posttest (nonexperimental retrospective design)	Specific strategies not mentioned UHC/AACN NRP & Versant New Graduate RN Residency Program	4–52 weeks	• Clinical Leadership Survey[a] • General Clinical Leadership Scale[a]	306 RNs with <24 months experience in 23 U.S. hospitals	NRP predictors of clinical leadership skills
Dyess & Sherman (2011)	Pretest/posttest	Didactic and Project Novice Nurse Leadership Initiative	12 months	• Student Leadership Practices Inventory • Practice Environment Scale of the Nursing Work Index (PES-NWI)	109 program graduates	Leadership and translational research skills, influence on practice
Fiedler, Read, Lane, Hicks, & Jegier (2014)	Post-test (Descriptive)	Specific strategies not mentioned UHC/AACN NRP	12 months	• McCloskey/Mueller Satisfaction Scale	51 nurse residents at 1 academic hospital	Turnover, career satisfaction, leadership development (i.e., hospital committee involvement, certification status, pursuit of advanced degree)

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TABLE 1 Article Search Results, Continued

Reference	Study Design	NRP Strategies and Curriculum Used in Study	Length of Program	Quantitative Instruments	Sample Size	Outcomes
Friday, Zoller, Hollerbach, Jones, & Knofczynski (2015)	Pretest/posttest with Repeated Measures	Didactic, simulation and clinical orientation	12 months	• CFGNES	46 nurse residents at 1 academic hospital	CFGNES outcomes, retention rates
Goode et al. (2013)	Pretest/posttest with Repeated Measures	Didactic, Simulation Clinical Orientation, and EBP Project UHC/AACN NRP	12 months	• CFGNES • McCloskey/Mueller Satisfaction Scale • Gerber's Control Over Nursing Practice Scale • Graduate Nurse Residency Program Evaluation • Organizational Commitment Questionnaire[a]	1016 nurse residents in mostly academic medical centers. Also included some teaching, community and rural hospitals.	CFGNES outcomes, program evaluation, job satisfaction, organizational commitment
Harrison & Ledbetter (2014)	Post-test	Clinical Orientation, Didactic & Simulation	12 months	• CFGNES	461 nurse residents in 3 hospitals	Turnover rates, intent-to-stay, CFGNES outcomes
Hillman & Foster (2011)	Post-test	Clinical Orientation, Didactic & Simulation	Not noted	• CFGNES • Areas of Worklife Survey • Maslach Burnout Inventor-General Survey (MBI-GS) • Conditions of Work Effectiveness Questionnaire-II • Clinical Decision Making in Nursing Scale	11 emergency department nurse residents in 1 academic hospital	Turnover, job satisfaction, confidence and competence, program effectiveness, CFGNES outcomes
Klingbeil et al. (2016)	Pretest/posttest with Repeated Measures	Clinical Orientation & Didactic for New and Experienced Pediatric RNs	12 months	• CFGNES[a]	118 nurses in transition program in 1 pediatric hospital	Confidence, comfort, difficulties, support
Kowalski & Cross (2010)	Repeated Measures	Clinical Orientation, Didactic & Simulation	12 months	• Investigator-developed Preceptor Evaluation Instrument • Pagana's Clinical Stress Questionnaire • Speilberger's State-Trait Anxiety Inventory • CFGNES[a]	55 nurse residents in 1 academic hospital	Clinical competency & critical thinking, anxiety, stress, professional transition and retention

(continues)

TABLE 1 Article Search Results, Continued

Reference	Study Design	NRP Strategies and Curriculum Used in Study	Length of Program	Quantitative Instruments	Sample Size	Outcomes
Medas et al. (2015)	Pretest/posttest with Repeated Measures	Clinical Orientation, Didactic & Simulation	12 months	• McCloskey/Mueller Satisfaction Scale • CFGNES • Investigator-developed Intent to Leave Survey	79 nurse residents in 1 academic hospital	Program effectiveness, satisfaction, confidence, role transition, retention rates and intent-to-leave
Rosenfeld, Glassman, & Capobianco (2015)	Post-test	Didactic, Clinical Orientation and EBP Project UHC/AACN NRP	12 months	• Investigator-developed Intent-to-Stay Index • Investigator-developed Goals Value Instrument	425 nurse residents in 1 academic hospital	Retention, career trajectory, value of NRP goals, professional accomplishments, intent-to-stay
Rush, Adamack, Gordon, Janke, & Ghement (2015)	Post-test	Not identified	Varied	• CFGNES[a] • Investigator-developed Transition Questionnaire	245 new graduate nurses in 7 health authorities in British Columbia	New graduate transition to practice
Thomson (2011)	Repeated Measures	Clinical Orientation and Didactic UHC/AACN NRP	12 months	• McCloskey/Mueller Satisfaction Scale • CFGNES • Gerber's Control Over Nursing Practice Scale	84 nurse residents in 1 academic hospital	Job satisfaction, skill competency, professional autonomy

Note. UHC/AACN = University Health System Consortium/American Association of Colleges of Nursing; NRP = nurse residency program; CFGNES = Casey–Fink Graduate Nurse Experience Survey.
[a]A revised version of the instrument was used.

TABLE 2 Measurement Instruments Reported in the Studies and Frequency Found in the Literature

Instruments	Frequency of Use	Description[a]	Subscales[a]	Psychometrics [a]
Casey–Fink Graduate Nurse Experience Survey	9	Section1 N.R. Section 2 24-item 4-point Likert scale Section 3 9-item 5-pointLikert scale Section 4 Open-ended questions	Section 1 • N.R. Section 2 • Support • Patient safety • Stress (in personal relationships) • Communication/ leadership • Professional satisfaction Section 3 • Job satisfaction Section 4 • Transition to practice	Cronbach's α = .74–.89 Positive validity via expert panel
McCloskey/Mueller Satisfaction Scale	4	31-item 5-point Likert scale	• Extrinsic rewards • Scheduling satisfaction • Family/work balance • Coworkers • Opportunities for social contacts • Professional responsibilities • Praise/recognition • Control/responsibility	Cronbach's α = .89–.90 Test–retest reliability = .79 Established criterion-related and construct validity
Gerber's Control Over Nursing Practice Scale	2	21-item 7-point numerical rating scale	N.R.	Cronbach's α = .85
Clinical Decision-Making in Nursing Scale	2	40-item 5-point Likert scale	N.R.	Cronbach's α = .78
Kouzes & Posner Student Leadership Practices Inventory[b]	2	5-point Likert scale	• Modeling the way • Inspiring shared vision • Challenging the process • Enabling others to act • Encouraging the heart	N.R. in articles reviewed
Areas of Worklife Survey	1	N.R.	N.R.	N.R.
Conditions of Work Effectiveness Questionnaire-II	1	N.R.	N.R.	N.R.
Graduate Nurse Residency Program Evaluation	1	Sections 1-3 4-point Likert scale	Satisfaction with: • Recruitment/welcome • Program goals • Program topics • Professional growth • Program faculty	Cronbach's α = .78–.95
Job Stress Scale	1	22-item 4-point Likert scale	• Competence • Physical Work Environment • Staffing • Team Respect	Cronbach's α = .78–.85

(continues)

TABLE 2 Measurement Instruments Reported in the Studies and Frequency Found in the Literature, Continued

Instruments	Frequency of Use	Description[a]	Subscales[a]	Psychometrics [a]
Nurse Job Satisfaction Scale	1	23-item 5-point Likert scale	• Enjoyment • Quality of Care • Time to Provide Care	Cronbach's α = .78–.86
The Competency Questionnaire: Nursing Readiness for Entry to Practice [b]Adapted from Babenko-Mould (2004)	1	53-item (adapted) 100-point Likert scale	• Nurse–client relationship • Illness–injury prevention • Curative support care	Cronbach's α=.97–.98
Investigator-developed Global Confidence, Competence and Readiness for Practice Scale	1	3-item 10-point visual analog scale	N.R.	N.R.
Investigator-developed Goals Value Instrument	1	5-item 4-point Likert scale	N.R.	N.R.
Investigator-developed Intent to Leave Survey	1	3-item 5-point Likert scale	N.R.	N.R.
Investigator-developed Intent-to-Stay Index	1	4-item 5-point Likert scale	N.R.	N.R.
Investigator-developed Preceptor Evaluation Instrument	1	31-item 4-point Likert scale	• General clinical abilities • Interpersonal relations • Critical thinking • Competency outcomes • Employee role • Unit-specific skills	Positive validity via expert panel
Investigator-developed Structured Simulation Clinical Scenario Instrument	1	Checklist of critical behaviors	• Patterns of proficiency and confidence • Ability to "think on the fly" • Use of resources to problem solve • Ability to use reflection as a learning tool • Communication techniques and team performance	N.R.
Investigator-developed Transition Questionnaire	1	N.R.	• General transition • Specific transition	N.R.
Practice Environment Scale of the Nursing Work Index (PES-NWI)	1	31-item 4-point Likert scale	• Nursing foundations for quality of care • Nurse manager ability • Readership and support of nurses • Staff and resource adequacy • Collegial nurse–physician relations	N.R.
MBI-GS	1	N.R.	N.R.	N.R.
Mowday et al.'s Organizational Commitment Questionnaire	1	15-item 7-point Likert scale	N.R.	Cronbach's α = .82–.90

(continues)

TABLE 2 Measurement Instruments Reported in the Studies and Frequency Found in the Literature, Continued

Instruments	Frequency of Use	Description[a]	Subscales[a]	Psychometrics [a]
General Clinical Leadership Survey[b]	1	N.R.	N.R.	N.R.
Pagana's Clinical Stress Questionnaire	1	20-item 5-point Likert scale	• Threat • Challenge	Cronbach's α = .84 (threat), = .85 (challenge), established construct and concurrent validity, interrater reliability = .89
Organizational Commitment Questionnaire[b]	1	N.R.	N.R.	N.R.
Modified 6-D Scale of Nursing Performance	1	61-item	• Managing acute emergent health problems • Interpersonal relations/ communications • Leadership skills • Planning/evaluation • Professional development • Teaching/Collaboration • Positive care outcome and unit goal behaviors	Cronbach's α = .86–.95
Speilberger's State-Trait Anxiety Inventory	1	40-item 4-point Likert scale	N.R.	Cronbach's α ≥ .90, established validity

Note. N.R. = not reported.
[a] Information reported in the study found via literature review.
[b] A revised version of the instrument was used.

Extent of Use

Eleven studies used a combination of two or more instruments to evaluate the NRP. The combination of measures increases the display of effectiveness of a program and provides a more holistic picture of the extent of outcomes. Six studies reported on Level 4 outcomes in addition to lower levels of evaluation, such as retention, which showed the positive financial outcomes of the program. The concomitant use of the Casey–Fink Graduate Nurse Experience Survey and McCloskey/Mueller Satisfaction Scale was found to evaluate three of the NRPs, and Gerber Control Over Nursing Practice Scale was included in the evaluation of two of those three NRPs. This combination or grouping of evaluation instruments is also the combination that was used to evaluate the development of the UHC/AACN NRP curriculum (Goode, Lynn, McElroy, Bednash, & Murray, 2013). Utilizing multifaceted high levels of evaluation can more accurately define program effectiveness, and including Level 4 evaluative measures can help organizations deduct the efficacy of the NRP and determine the value of the investment.

LIMITATIONS

There were several limitations to this literature review. First, little detail was found in the articles about each instrument. At the most, a brief description was provided, and details regarding description of scales, subscales, and measure type were often omitted. Descriptions found in the articles are summarized in Table 2. A thorough analysis could not be conducted without further investigation into the reference section of the article and then proceeding to finding the actual instrument in the literature. A second limitation was the lack of reliability and validity statistics provided. Eleven articles reported reliability and validity statistics. However, they were reported in a general manor, and details about instrument testing methods were not included. As a result, conclusions about the instruments' accuracy in measuring the NRP could not be sufficiently drawn without reviewing the instrument.

IMPLICATIONS FOR NPD PRACTITIONERS

According to the NPD practice model, it is the NPD practitioner's role to facilitate learning by adhering to the standards of NPD practice (Harper & Maloney, 2016). The NPD practitioner applies the nursing process to the specialty and incorporates evaluation strategies into their practice. As a result, the NPD practitioner has the responsibility to ensure that evaluation strategies are evidence-based and effective. This literature review

serves to inform NPD practitioners about the instruments currently being used to evaluate NRPs. In an effort to show the effectiveness of NRPs, NPD practitioners have a responsibility to use objective instruments that are current, reliable, and valid. If an instrument is generated for the purposes of answering a specific question, NPD practitioners make every effort to determine the reliability and validity of that instrument. Furthermore, NPD practitioners should use multiple instruments that measure a variety of outcomes and should attempt to measure outcomes at all four levels of the Kirkpatrick (1998) framework. It is important, when choosing evaluative measures, to consider how many measures are self-reported and subjective, compared to how many measures are data-driven and objective. With a multifaceted approach to NRP outcome evaluation, NPD practitioners can gain needed leadership support for the work being done. Also, NPD practitioners can be certain to gain multifaceted input into how to improve upon the organization's NRP.

RECOMMENDATIONS FOR FUTURE RESEARCH

Further research is needed to determine the most effective instruments in measuring NRP outcomes. Research is needed to analyze what combination of subjective and objective measures is most appropriate and comprehensive for evaluating the effectiveness of an NRP. Hypotheses around one current streamlined instrument or evaluation measure should be explored. With strong evaluation methods and instruments, NPD practitioners can arm themselves with evidence to support their programs and can show NRP value to the organization.

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