



## **A SYSTEMATIC REVIEW OF NURSE PERFORMANCE APPRAISAL INSTRUMENTS: VALIDITY, RELIABILITY, AND IMPLICATIONS FOR NURSING PRACTICE**

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### **Abstract**

*Accurate assessment of nurse performance is essential to improving healthcare quality, patient outcomes, and organizational effectiveness. Despite the development of various performance appraisal instruments, concerns persist regarding their validity, reliability, fairness, and alignment with clinical practice. This systematic review, conducted following PRISMA guidelines, analyzed studies published between 2020 and 2025 from PubMed, Scopus, ProQuest, and Sage Journals that discussed the development, evaluation, or implementation of nurse performance appraisal tools. From 226 identified articles, 13 met the inclusion criteria. The instruments reviewed ranged from self-assessment and peer/supervisor evaluation to empowerment-based and theoretically grounded models such as self-efficacy and the balanced scorecard. Findings revealed that most instruments positively influenced job satisfaction, empowerment, organizational commitment, and patient outcomes. However, persistent challenges include subjectivity, inconsistent benchmarks, limited validation, and poor communication between appraisers and appraisees. Instruments integrating multiple perspectives and theoretical foundations demonstrated greater comprehensiveness and acceptance. Therefore, future development should prioritize standardization, validity, reliability, fairness, and alignment with organizational goals, positioning performance appraisal as a strategic mechanism to enhance nursing performance and healthcare quality rather than merely an administrative requirement.*

**Keywords:** *nurse performance appraisal, validity, reliability*

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## INTRODUCTION

Performance appraisal of nurses is a crucial component of nursing human resource management because it is directly related to service quality, patient safety, and nurse job satisfaction. Valid and reliable performance appraisal instruments are needed to ensure that evaluations truly reflect nurses' competencies, behaviors, and contributions in clinical practice. However, to date, nurse performance appraisal systems still face challenges in terms of instrument format, assessment methods, and evaluators' skills in conducting appraisals (El-Sayed, 2021; Sepahvand et al., 2020).

Several studies have shown that inappropriate appraisal systems may result in bias, subjectivity, and dissatisfaction among nurses. For example, nurses often perceive performance appraisals as merely an administrative formality that does not provide meaningful feedback for their professional development (Jerónimo & Araújo, 2023). Similar findings were reported by Jaber et al., (2024), who revealed that nurses' perceptions of unfairness or inefficiency in appraisal systems negatively affected motivation, organizational commitment, and the quality of care provided.

On the other hand, when performance appraisal instruments are well-designed, they can enhance empowerment, job satisfaction, and nurses' engagement with their work. Mohamed Abdelrahim et al., (2023) found a significant relationship between effective appraisal systems and nurses' empowerment and job satisfaction. Likewise, Elsayed et al., (2024) emphasized that positive perceptions of appraisal systems were associated with job crafting behavior, namely nurses' ability to adapt their tasks and roles to make them more meaningful. This highlights the importance of designing appraisal instruments that not only provide a comprehensive overview of competencies but also motivate nurses.

Nurse performance appraisal instruments developed in various studies demonstrate diverse approaches. For instance, Nuritasari et al., (2020) integrated self-efficacy dimensions in developing an instrument to assess nurses' performance behaviors, while Liang et al., (2021) compared multi-source appraisal methods (self, peer, supervisor) to obtain more comprehensive results. Another approach, such as the use of the balanced scorecard (Yang, 2022), reflects systematic efforts to align instruments with organizational needs and the demands of modern healthcare services.

Nevertheless, there is still no clear consensus regarding which instrument is most appropriate in terms of validity, reliability, and contextual application. This issue is particularly relevant in developing countries such as Indonesia, where variations in nursing practice

and limited resources affect the implementation of appraisal systems. Therefore, this systematic review was conducted to critically examine existing nurse performance appraisal instruments, evaluate their strengths and limitations, and provide recommendations for the development of more effective, fair, and contextually relevant instruments.

## METHODS

### ○ Selection Criteria

The articles included in this systematic review were selected based on predetermined inclusion and exclusion criteria. The inclusion criteria were as follows: (1) original research articles focusing on the development, evaluation, or utilization of nurse performance appraisal instruments; (2) published in peer-reviewed journals; (3) employing quantitative, qualitative, or mixed-methods research designs; (4) written in English or Indonesian; and (5) published between 2020 and 2024, in line with recent developments in nurse performance appraisal instruments. The exclusion criteria were as follows: (1) articles in the form of editorials, opinions, or commentaries; (2) articles that only discuss performance appraisal in general without measurable instruments; and (3) publications not available in full-text format.

Table 1. Inclusion and Exclusion criteria

PICO	Inclusion Criteria	Exclusion Criteria
<b>Population</b>	Studies involving nurses (staff nurses, nurse practitioners, charge nurses, head nurses, etc.)	Studies involving other healthcare professionals (physicians, midwives, non-medical staff) without nurse-specific data
<b>Intervention</b>	Studies that develop, evaluate, or implement nurse performance appraisal instruments (performance appraisal tools, assessment instruments, evaluation models).	Articles that only discuss nurse performance in general without specific instruments.
<b>Comparison</b>	Comparisons between instruments, methods (self, peer, supervisor assessment), or modifications of performance appraisal instruments.	Articles that do not include evaluation or comparison of instruments.
<b>Outcome</b>	Studies reporting outcomes related to validity, reliability, effectiveness, nurses' perceptions, job satisfaction, empowerment, or the relationship with patient care quality.	Articles that do not present findings or empirical data related to instrument effectiveness or validity.
<b>Study Type</b>	Original research articles (quantitative, qualitative, mixed-methods, R&D, cross-sectional, survey, experimental).	Editorials, commentaries, non-systematic reviews, or brief reports without research methodology.
<b>Language</b>	Articles written in English or Indonesian.	Articles in languages other than English or Indonesian.
<b>Publication Year</b>	2020–2025	Articles published before 2020.

### ○ Literature Search and Screening

The literature search was conducted systematically through international databases including PubMed, Scopus, ProQuest, and Sage Journals, complemented by articles from internal documents and grey literature related to nursing. The search keywords used were: “*nurse performance appraisal*”, “*nursing performance instrument*”, “*nurse competence assessment*”, “*performance evaluation tool for nurses*”, and “*critical appraisal nursing instrument*”. All

retrieved articles were exported into reference management software to remove duplicates. Screening was carried out in two stages: first, title and abstract screening to ensure relevance; and second, full-text review to assess compliance with the inclusion and exclusion criteria.

Table 2. The adjusted search terms as per searched electronic databases

Database	Search Query	Results
PubMed	("nurse performance appraisal" OR "nursing performance instrument" OR "nurse competence assessment" OR "performance evaluation tool for nurses") AND (validity OR reliability OR effectiveness)	68
Scopus	("nurse performance appraisal" OR "nursing performance instrument" OR "nurse competence assessment" OR "performance evaluation tool for nurses") AND (validity OR reliability OR effectiveness)	54
ProQuest	("nurse performance appraisal" OR "nursing performance instrument" OR "nurse competence assessment" OR "performance evaluation tool") AND (validity OR reliability OR effectiveness)	42
Sage Journals	("nurse performance appraisal" OR "nursing performance instrument" OR "competence assessment" OR "evaluation tool") AND (validity OR reliability OR effectiveness)	31

### ○ Data Extraction

Data from articles that met the inclusion criteria were extracted using a standardized format. The extracted information included: author name and year of publication, country or study setting, research objectives, study design, sample characteristics, type of nurse performance appraisal instrument used or developed, aspects of instrument validity and reliability, as well as key findings related to the effectiveness and challenges of using the instrument. The extraction process was carried out independently by two researchers to minimize bias, after which the results were compared and agreed upon.

### ○ Statistical Analysis

Data analysis in this systematic review was conducted descriptively and narratively. Data from each included article were compared based on study characteristics, the type of nurse performance appraisal instrument used or developed, and outcomes related to validity, reliability, effectiveness, and their impact on nurse performance and quality of care.

When quantitative data were available in a homogeneous format (e.g., Cronbach's alpha reliability values, validity indices, or effectiveness scores), tabulation and simple mean calculations were performed to illustrate general trends across studies. However, due to variations in study designs and instruments, a meta-analysis was not conducted, and the findings were presented as a narrative synthesis.

In addition, the methodological quality of each article was assessed using appropriate critical appraisal tools corresponding to the study design (e.g., JBI Critical Appraisal Checklist or CASP). The results of the quality appraisal were considered in the final interpretation of this systematic review.

Table 3. Quality assessment using a JBI quality assessment tool for prevalence studies

Article	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Overall appraisal
Article 1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Include
Article 2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Include
Article 3	Y	Y	A	Y	Y	Y	Y	Y	Y	Include
Article 4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Include
Article 5	Y	Y	A	Y	Y	Y	Y	Y	Y	Include
Article 6	Y	Y	S	Y	Y	Y	Y	Y	Y	Include (with caution)
Article 7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Include
Article 8	Y	Y	Y	Y	Y	Y	Y	Y	Y	Include
Article 9	Y	Y	S	Y	Y	Y	Y	Y	Y	Include (with caution)
Article 10	Y	Y	L	Y	Y	Y	Y	Y	Y	Include
Article 11	Y	Y	Y	Y	Y	Y	Y	Y	Y	Include
Article 12	Y	Y	A	Y	Y	Y	Y	Y	Y	Include
Article 13	Y	Y	Y	Y	Y	Y	Y	Y	Y	Include

\*Y=Yes; A=Adequate; S=Small; L=Large

## RESULTS AND DISCUSSION

### ○ Literature Search

The literature search and selection process followed the PRISMA guidelines, beginning with database searches (195) and registry searches (31), resulting in a total of 226 records. Before screening, 84 duplicates were removed, 23 records were automatically excluded by automation tools, and 18 records were removed for other reasons. Thus, 101 records remained for screening. During the screening stage, 15 of the 101 records were excluded for being irrelevant. Subsequently, 21 reports were sought for retrieval, but 18 could not be accessed. In the next stage, 47 reports were assessed for eligibility. Of these, several reports were excluded with the following reasons: 8 were not in English, 20 were irrelevant, and 6 had no abstract. Finally, 13 studies met the inclusion criteria and were included in this systematic review. Figure 1 illustrates the study screening and selection process.

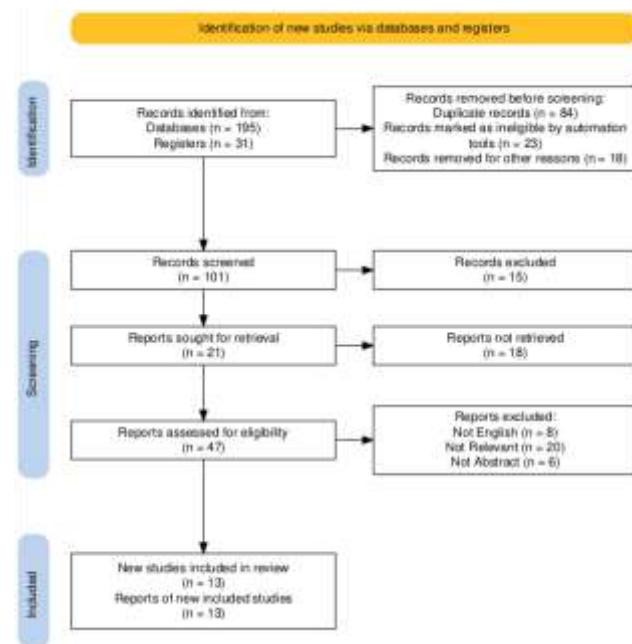


Figure 1. PRISMA flow diagram showing the screening and selection process

o **Characteristics Of Included Studies**

A total of 13 included articles were published between 2020 and 2025 and originated from various countries, including Egypt, Korea, Iran, Japan, Portugal, Indonesia, China, and Saudi Arabia. The study designs employed included cross-sectional studies, methodological studies, qualitative studies, and research and development (R&D) designs.

The instruments reviewed were diverse, such as: a self-efficacy-based instrument for assessing nurses' work behavior (Nuritasari et al., 2020); multi-source assessment (self, peer, supervisor) for evaluating nursing competencies (Liang et al., 2021); a modified appraisal format aimed at reducing bias and subjectivity in

evaluation (El-Sayed, 2021); the Balanced Scorecard Model adapted for community nurse evaluation (Yang, 2022); and appraisal systems linked to empowerment, job satisfaction, and organizational commitment (Mohamed Abdelrahim et al., 2023; Sepahvand et al., 2020; Jaber et al., 2024).

Most studies reported that conventional appraisal systems were often biased, lacked transparency, and did not fully reflect nurses' competencies. However, more structured, competency-based instruments that incorporated multi-source evaluations were found to be more valid, reliable, and positively associated with job satisfaction, job crafting, and quality of care.

Table 4. Characteristics of the Included Studies

No	Title, Author(s), Year	Country / Setting	Design	Sample	Instrument / Approach	Main Findings
1	Evaluation of Performance Appraisal Instrument Development for Nurse Based On Self Efficacy at Lavalette Hospital in Malang (Nuritasari et al., 2020)	Indonesia (Lavalette Hospital)	R&D, explorative descriptive	110 nurses	Self-efficacy-based nurse performance appraisal instrument	Existing instruments insufficient; need standard, competency-based instruments.
2	Evaluation of Nurse Practitioners' Professional Competence and Comparison of Assessments Using Multiple Methods: Self-Assessment, Peer Assessment, and Supervisor Assessment (Liang et al., 2021)	China (Teaching Hospital)	Cross-sectional	211 nurse practitioners	Multi-source appraisal (self, peer, supervisor)	Significant variation across raters; supervisors rated lower; multi-method improves accuracy.
3	Development of a Performance Appraisal Tool for Staff Nurses. (El-Sayed, 2021)	Egypt (Public Hospital)	Methodological study	80 staff nurses + 9 head nurses	Modified performance appraisal tool	Current system biased, subjective; modified format improves fairness.
4	Staff nurse's perception about performance-appraisal fairness and its relation to their	Egypt (University Hospital)	Descriptive correlational	250 staff nurses	Fairness perception of appraisal + Work Engagement Scale	High perceived fairness significantly correlated with work engagement.

	work engagement (Hamdeen et al., 2022)					
5	The construction of nursing performance evaluation model in community health service center based on the balanced scorecard and hygiene factors (Yang, 2022)	China (Community Health Service Centers)	Delphi & AHP modeling	20 experts	Balanced Scorecard + hygiene factors model	Developed structured performance model (30 unit indicators, 21 staff indicators).
6	The Performance Appraisal Of Nurses: A Qualitative Study (Jerónimo & Araújo, 2023)	Portugal (Hospitals, public & private)	Qualitative study	12 nurses	Semi-structured interviews	Current appraisal systems inadequate; ideal model should be competency-based and linked to organizational goals.
7	Nurses' Performance Appraisal System and Its Association to Their Empowerment and Job Satisfaction (Mohamed Abdelrahim et al., 2023)	Egypt (Sohag Univ. Hospital)	Descriptive correlational	300 staff nurses	Performance appraisal system questionnaire	Positive correlation between appraisal system, empowerment, and job satisfaction.
8	The Effectiveness Of Performance Appraisal On Nursing Employees In A Tertiary Care Hospital, Chengalpattu District (Agalya et al., 2023)	India (Tertiary Hospital)	Cross-sectional	135 staff nurses	Semi-structured validated questionnaire	91.9% nurses satisfied with appraisal system; effectiveness linked with age and experience.
9	Improving nurses' organizational commitment by participating in their performance appraisal process (Sepahvand et al., 2020)	Iran (Social Security Hospital)	Participatory action research	39 ICU nurses & managers	Appraisal system reform with participation	Involving nurses improved organizational commitment and job satisfaction.

10	Staff nurses' evaluation of care process quality and patient outcomes in long-term care hospitals: A cross-sectional questionnaire survey (Yamamoto-Mitani et al., 2020)	Japan (Long-term care hospitals)	Cross-sectional survey	2,508 nurses, 199 managers	Care process evaluation linked with outcomes	Nurses' appraisal of care processes correlated with patient outcomes.
11	Nurses' Views and Attitudes of the Performance Appraisal System Efficacy and Its Impact on Their Work Outcomes in a Tertiary Hospital (Jaber et al., 2024)	Saudi Arabia (Tertiary Hospital)	Cross-sectional, comparative	356 nurses	Nursing performance appraisal system efficacy	Significant perception differences by role, gender, age; poor systems affect quality and commitment.
12	Development of a Performance Appraisal Tool for Staff Nurses (El-Sayed, 2021)	Egypt (El Manial Teaching Hospital)	Descriptive correlational	105 staff nurses	Appraisal system perception + Job Crafting Questionnaire	Positive correlation between appraisal perception and job crafting behaviors.
13	Nurses' Performance Appraisal System and Its Association to Their Empowerment and Job Satisfaction (Mohamed Abdelrahim et al., 2023)	Korea (Operating Rooms, 4 hospitals)	Cross-sectional	182 operating room nurses	Competency-based appraisal & education needs	Competency levels varied by career stage; higher competence linked with lower training needs.

o **Sensitivity Analysis and Publication Bias**

Sensitivity analysis was conducted by comparing the review findings based on the methodological quality of the articles. Studies with high methodological quality (e.g., those employing systematic validity and reliability testing, or R&D designs) yielded consistent results regarding the effectiveness of the instruments. In contrast, studies with methodological limitations (e.g., assessment bias due to reliance solely on subjective perceptions) showed more variable outcomes. Nevertheless, the overall trend remained consistent, indicating that the use of standardized and validated instruments enhances the quality of nurse performance evaluation.

The possibility of publication bias cannot be ruled out, particularly since most of the included articles were published in English and indexed in international databases, which may have excluded local studies not indexed. Furthermore, most of the published studies reported positive findings on instrument effectiveness, whereas studies with negative results or failed instruments were rarely identified. However, efforts to reduce bias were undertaken by including grey literature and manual searching.

**Discussion**

The findings of this systematic review indicate that nurse performance appraisal instruments play a crucial role in supporting

nursing human resource management, improving service quality, and strengthening organizational commitment. However, the instruments used across countries and healthcare settings still demonstrate considerable variation in terms of approaches, dimensions assessed, and their reliability. These differences highlight that although performance appraisal of nurses has become a mandatory practice in many hospitals, consensus regarding the most appropriate instrument has yet to be reached.

One important finding is that many existing performance appraisal systems are still considered biased and lacking objectivity. El-Sayed, (2021) emphasized that conventional appraisal formats are often subjective and influenced by evaluators' personal preferences, resulting in dissatisfaction among nurses. Similarly, Sepahvand et al., (2020) found that ineffective instruments and poorly trained evaluators could reduce nurses' motivation and organizational commitment. These conditions underscore the need for more standardized, transparent, and competency-based appraisal instruments to produce fairer evaluations.

Beyond fairness, nurses' psychological dimensions were also found to be closely linked to the appraisal systems employed. Hamdeen et al., (2022) demonstrated a positive relationship between perceptions of appraisal fairness and work engagement. Likewise, Mohamed Abdelrahim et al., (2023) found that effective appraisal systems enhanced nurses' empowerment and job satisfaction. These findings reinforce the idea that performance appraisal should not merely be regarded as an administrative tool but as a strategic instrument to support nurses' psychosocial well-being, which ultimately improves patient care quality.

Several other studies also highlighted the importance of multidimensional approaches in performance appraisal. Liang et al., (2021) showed that multi-source methods—incorporating self, peer, and supervisor assessments—provided a more comprehensive picture of nursing competencies compared to relying on a single evaluation source. This is particularly relevant given that nurses work within multidisciplinary teams, and perspectives from multiple evaluators enrich appraisal outcomes while reducing individual bias. However, significant discrepancies among evaluators were noted, particularly supervisors who tended to assign lower scores compared to self- or peer-assessments. This suggests the need for evaluator training to harmonize perceptions and establish consistent appraisal standards.

In addition, several studies have developed performance appraisal instruments based on theoretical frameworks and modern management models. Yang, (2022) adopted the Balanced Scorecard and hygiene factors to construct a

performance appraisal model for primary care nurses, which was considered more systematic and aligned with organizational goals. This model-based approach aligns with modern quality management needs, as it not only evaluates individual performance but also links outcomes to unit indicators and organizational objectives. Meanwhile, Nuritasari et al., (2020) integrated self-efficacy dimensions into a nurse performance appraisal instrument in Indonesia, adding an extra layer to the assessment of work behavior and intrinsic motivation. These findings suggest that instrument development should take into account cultural contexts, organizational characteristics, and relevant theoretical frameworks.

From an international perspective, studies in Japan and Korea demonstrated that nurse performance appraisal affects not only individual nurses but also patient outcomes. Yamamoto-Mitani et al., (2020) reported a significant correlation between nurses' evaluation of care processes and patient outcome indicators such as urinary tract infections, pressure ulcers, and fall incidents. Similarly, Mohamed Abdelrahim et al., (2023) in Korea showed that operating room nurses' competencies varied by career stage, with higher competencies associated with lower training needs. These findings underscore that robust performance appraisal instruments can serve as a basis for continuous education planning and quality improvement in healthcare services.

Nevertheless, this review also identified the potential for publication bias. Most published studies reported positive findings regarding instrument effectiveness, while studies revealing weaknesses or failed instruments were relatively scarce. Furthermore, much of the literature originated from countries with strong academic documentation systems, suggesting the likelihood of unpublished studies from developing countries. This factor may limit the generalizability of the review findings, particularly in contexts such as Indonesia.

Overall, this systematic review emphasizes that nurse performance appraisal instruments should not only function as administrative tools but also as managerial strategies to enhance motivation, empowerment, job satisfaction, and ultimately the quality of nursing care. Instruments that are more structured, competency-based, employ multi-source approaches, and are linked to organizational indicators were found to be more effective and widely accepted by nurses. Therefore, future instrument development should prioritize validity, reliability, fairness, and alignment with organizational goals and healthcare service quality.

### Limitations

This systematic review has several limitations that should be noted. First, although

the literature search was conducted systematically through several major databases, it is possible that relevant articles were not identified, particularly from grey literature or local publications that are not internationally indexed. Second, most of the included studies originated from countries with well-established academic documentation systems, so the findings may not fully represent the context of developing countries such as Indonesia.

Third, there is a potential for publication bias, as the majority of articles reported positive results regarding the effectiveness of nurse performance appraisal instruments, while studies with negative outcomes or ineffective instruments were rarely found. Fourth, the heterogeneity of research designs, instruments, and outcome indicators used prevented the conduct of a quantitative meta-analysis, limiting the analysis to a narrative synthesis.

Finally, some studies employed appraisal methods based on nurses' or evaluators' perceptions without robust validity and reliability testing, which may have influenced the results through respondent bias. These limitations should be considered when interpreting the findings and represent opportunities for future research to develop more rigorously tested and contextually relevant instruments.

## CONCLUSION

This systematic review highlights that nurse performance appraisal instruments play a strategic role in supporting human resource management, improving service quality, and strengthening organizational commitment. However, the variations in approaches, measured dimensions, and the quality of instruments used across different countries indicate that there is still no single instrument considered most appropriate and universal.

Competency-based instruments that adopt a multi-source, structured approach and are aligned with organizational goals have been shown to be more effective in reflecting nurses' performance while simultaneously enhancing motivation, empowerment, and job satisfaction. Therefore, the development of future instruments should emphasize aspects of validity, reliability, fairness, and their linkage to organizational objectives and healthcare quality.

These findings also underscore that performance appraisal should not be viewed merely as an administrative obligation but rather as a strategic instrument to support nurses' professional development and to enhance the overall quality of healthcare services.

## AVAILABILITY OF DATA AND MATERIALS

The datasets during and/or analyzed during the current study are available from the corresponding author on reasonable request.

## CONFLICTS OF INTEREST

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## ETHICAL APPROVAL

Not applicable

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