



Article

## Performance assessment of nurse competence based on Electronic Nursing Logbook in Health Services

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### A B S T R A C T

*The era of industry 4.0, has developed an electronic logbook (E-logbook) which is used for more accurate documentation and assessing performance based on the achievement of each individual activity. The nurse's E-logbook is designed as a documentation that contains records of activity achievements, nurse skills, and updates of all activities, and is used in assessing employee behavior for one year. The purpose of this literature review is to determine whether the use of Electronic logbook has a significant impact on performance appraisal. The database search used included Google Scholar (40 articles), Pubmed (15 articles), and EBSCO (30 articles). The keywords used in the search for articles are electronic logbook, nurse, service quality, health services and only 5 articles were used that were suitable through analysis of objectives, topic suitability, research methods used, sample size, research ethics, results of each article, and limitations that occur. It was found that there was a positive impact on the use of electronic logbooks on clinical staff. The e-logbook continues to be updated to facilitate quantitative recording of the activities of each medical staff according to the details of their clinical authority and as a means of performance assessment*

## I. INTRODUCTION

The development of technology in the era of the industrial revolution 4.0 has significantly changed human life. With digital technology and the internet, everything has become borderless. In the health sector, this has had a positive impact, especially in the competition between hospitals in health services. Therefore, hospitals strive to provide quality and excellent services for clients and families. To ensure good quality health services, competent staff performance and effective management are required.

Every hospital must have a record document that includes information about qualifications, education, competencies, job descriptions, evaluation results, and individual assessments that are in accordance with standards and updated in accordance with applicable regulations. The knowledge, skills, and attitudes that nurses must possess are referred to as core competencies, which enable them to adhere to appropriate standards (Faraji et al., 2019)

The results of research from anesthesia nursing students at several universities in Iran

showed that the use of smartphone-based E-logbooks provided greater benefits in increasing the satisfaction of anesthesia nursing students compared to the use of manual logbooks. (Khalafi et al., 2023) In Indonesia, nurses' knowledge of technology-based documentation is still low due to educational factors, abilities and skills and the use of information technology (Kamil et al., 2018). In the nursing field, one of the individual performance indicator assessments that can be used is the nursing logbook (Komsiyah & Indarti, 2019)

There is often a void of nursing logbooks in health services. This is evident from data taken in January 2016, where as many as 456 nurses (32.88%) have undergone the credentialing process, while 67.12% of nurses have not followed it (Komsiyah & Indarti, 2019). research conducted by Komsiyah in 2018 shows that there are several factors that become obstacles for nurses in filling out manual logbooks. These factors include nurses' lack of knowledge, high fatigue and busyness, lack of self-motivation, lack of feedback from leaders, difficulty in filling out logbooks, and the absence of special awards for filling out logbooks. Komsiyah also revealed that manual logbooks have shortcomings in terms of the time needed to fill them out. Because of this, it is often difficult to consistently fill in the logbook every day. In addition, if the writing process is done in a rush, this will make it difficult to understand in the future (Komsiyah et al., 2018)

Unclear writing can negatively impact the documentation and assessment process. Assessments will be subjective due to bias and lack of competence in reflecting the clinical authority of each profession. The inability to differentiate individual activity levels also has the potential to lead to clinical staff dissatisfaction and distrust of the individual performance appraisal system, which in turn can lead to prejudice. In addition, it also has the potential to cause demotivation in clinical staff which can result

in decreased productivity and quality of healthcare (Spence & Keeping, 2011).

To reduce the impact of logbook blanks and make documentation easier for nurses in the industry 4.0 era, an electronic logbook (E-logbook) has been developed that can be used for more accurate documentation and assess performance based on individual achievement of activity utility. Electronic documentation of nurses' logbooks is designed as a record that contains nurses' skill achievements and activity updates, such as Continuous Professional Development (CPD). In addition, the electronic logbook is also used to evaluate employee behavior for one year.(Komsiyah & Indarti, 2019). A journal by Shayan at all, introduced an assessment pattern in the form of a clinical performance logbook that can be a valuable tool, a tool to assess clinical competence (Shayan et al., 2012). The E-Logbook system was considered a convenient means of (Shayan et al., 2012) monitoring postgraduate training and was well received by supervisors. It was felt that there is a need to raise awareness regarding the importance and usefulness of this system (Ullah et al., 2019).

## II. METHODS

The method used in this literature review uses a comprehensive strategy, such as searching for articles in research journal databases, searching via the internet, reviewing articles. using the PRISMA flow, with database searches including Google Scholar (40 articles), Pubmed (15 articles), and EBSCO (30 articles). *Keywords used in the article search include* The keywords used in the article search were electronic logbook, nurse, service quality, performance appraisal. There were articles obtained and 5 articles were analyzed through analysis of objectives, suitability of topics, research methods used, sample size, research ethics, results of each article, and limitations that occurred.

III. RESULTS

Tabel 3. Literatur Review

Peneliti (Tahun)	Judul	Metode	Hasil
Lusia Dian Wahyu Winarti1, Tuti Afriani2, Dudi Mashudi3 (2023)	Implementation of digitization-based nurse competency logbook	Case report approach with interviews and using divided questionnaires	The research shows that the SPO (Standard Operating Procedure) of the competency logbook, the operational flow of the digitized logbook, the competency logbook link and the spreadsheet link have been compiled. Logbook implementation and evaluation of implementation, 81.5% of emergency room nurses apply digitization-based competency logbooks. Conclusion: digitization-based competency logbook as one of the efforts in solving problems related to not optimal nurse competency logbooks.
Sonang Veronika Butarbutar1 Kesehatan Insan Sehat Vol .10 Nomor. 1, Juni 2022	E-logbook as an activity to substantiate nurses' clinical activities through electronic medical record	Literature review	Regarding e-logbooks, 4 journals were found that met the criteria for discussion and the results showed that the use of e-logbooks can make it easier for nurses to document their activities, but e-logbooks also have disadvantages, namely the need for large costs to use them. Conclusion: There is convenience in using e-logbooks for nurses but e-logbooks also have disadvantage
Marwiati Marwiati1, M. Fahrurozi1 ( 2021)	E -Log Book for Clinical Nurse Competency Performance Assessment	quasy experiment with one group pretest posttest design approach	The results of the t test analysis obtained p value <0.05, so there is an effect of using effective e logs in seeing the performance of clinical nurse competence according to the clinical appointment they have. The results in the e log book are effective for assessing nurse

			<p>competency performance because it describes the entire process of providing nursing care in nursing services. E- Log Book makes the competence of clinical nurses can be recorded properly so as to facilitate the assessment of competency performance.</p>
<p>Komsiyah1), Dwi Indarti 2) ( 2019)</p>	<p>Logbook as a requirement for career advancement for nurses in hospitals</p>	<p>Qualitative research method by conducting indepth interviews</p>	<p>The results of indepth interviews obtained 3 themes of logbook functions, namely evidence of competency implementation, as a requirement for career advancement, evidence of personal records. Conclusion: This study concludes that it is necessary to establish clear rewards related to the implementation of filling out nurse logbooks and more detailed technical instructions are needed, and can be socialized evenly to implementing nurses so that the same understanding between nurses is produced.</p>
<p>Alireza Yousefy, Shahram Shayan1, Assadolah Mosavi 2 ( 2012)</p>	<p>Developing a clinical performance logbook for nursing students receiving cardiac care field training</p>	<p>Sampling was done in the form of multi-stage clusters and then after selecting the colleges, their coaches were included in the study in the form of a census.</p>	<p>Result: After literature review and focus group, 23 modules and 142 skills in the first section and 14 general procedural skills and 15 special procedural skills in the second stage were compiled. Finally after passing the Delphi stages, 150 skills in the form of 23 mod- ules in the first section and 14 general procedural skill and 13 special procedural skills were obtained in the second section. The expectancy levels of all the skills were also determined Conclusion: This study has introduced an assessment pattern in the form of clinical perfor- mance</p>

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logbook which can be a valuable tool for assessing the clinical competency of nursing students receiving field training in cardiac care units (CCU).

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#### IV. DISCUSSION

In this digital era, logbooks have developed into Electronic logbooks, which provide convenience for nurses in carrying out their duties in various areas such as service areas, teaching, research, and student practice. By using electronic logbooks, nursing quality can be improved in accordance with established standards. Improved performance will also have a positive impact on patient safety and satisfaction, resulting in improved service quality

Research conducted by Ullah in 2019 also provides support for the use of Electronic logbooks or Electronic logbook systems that explain the daily notes entered by nurses into the action menu during the data input process. After successful data input by the nurse, the data will be available to the supervisor. With this system, supervisors can know the activities and performance achievements of clinical nurses at any time. Supervisors have the ability to provide structured feedback to nurses in accordance with applicable standards. The use of e-logbook is very efficient in documenting and analyzing data related to nurses' daily clinical activities. The nurse's e-logbook also acts as a tool to monitor and evaluate the implementation of clinical competencies

In the assessment of nurses' work performance, there are supporting data recorded in the logbook. Organizations can prove the quality of their performance by using objective, measurable, accountable, participatory, and transparent job performance appraisals through Electronic logbooks. It is important for individual performance appraisals to reflect staff competencies and performance objectively and transparently to increase work

motivation. If it is not done well, then there is the potential for dissatisfaction and decreased motivation and performance of staff. The results of research conducted by Marwiati (2021) show that the use of Electronic Logbook is very effective in evaluating the performance of nurse competence because it covers all stages of providing nursing care in nursing services. With the Electronic Logbook, the competence of clinical nurses can be well documented, making it easier to assess competency performance (Marwiati & Fahrurrozi, 2021).

In addition, individual achievements also have an impact on performance achievement in the hospital. In the evaluation process, transparency is very important and is supported by clinical staff through digital programs. This digital program can be accessed by all staff and supervisors, thus providing more objectivity (Spence & Keeping, 2011). As a tool for monitoring and evaluating the implementation of clinical competencies, the E-Logbook method is used by nurses. In addition, this method also serves as a means of nurse accountability for the clinical tasks that have been assigned and as a periodic evaluation of individual performance assessment (Spence & Keeping, 2011)

Research conducted by Butarbutar in 2022 concluded that although there are shortcomings in the use of e-logbooks in their implementation, the use of e-logbooks can make it easier for nurses to document their activities so that with the complete documentation of activities carried out by nurses, nurses are expected to focus more on providing nursing care (Butarbutar, 2022). Research on the use of e-logbooks in implementing preceptorship and mentorship programs in hospitals also concluded that the use of e-logbooks can overcome the barriers that occur in the program. The role of managers needs to increase the motivation

and commitment of nurses in supporting change, by supervising and evaluating the implementation of e-logbooks (Winarti et al., 2023) . One of the main benefits of an E-logbook is that it simplifies the process of analyzing the recorded data, as well as providing easy storage of information while requiring minimal physical space. In addition, another advantage is that it reduces paper usage and supports environmental sustainability (Harrington et al., 2020).

Based on the article that has been submitted, it can be concluded that the use of the Electronic logbook has a positive impact on individual performance assessment. This reflects the competence and performance of nurses objectively and transparently. In addition, the use of Electronic logbooks also has the potential to increase the motivation of clinical nurses, which in turn can increase the productivity and quality of health services. There are several studies that support the use of E-logbooks in education and research. E-logbooks have been used in various areas, ranging from service, education, to research with the same functions of documentation, reporting, and performance evaluation

will have a positive impact on the productivity and quality of health services

## **V. CONCLUSION**

Electronic logbook is a tool that can be utilized by nurses to document more accurately and assess performance based on individual activity achievements. The electronic logbook continues to be improved to facilitate quantitative recording of the activities of each clinical staff in accordance with the details of clinical authority that have been determined. The electronic nurse logbook was created as a documentation tool that contains records of nurses' activity and skill achievements, and automatically updates all activities, including Continuous Professional Development (CPD). This electronic logbook is used to evaluate employee behavior for one year. The use of electronic logbooks has a significant impact on individual performance appraisal. By using electronic logbooks, staff performance appraisals can be conducted objectively and transparently, thus reflecting their competencies and performance more accurately. In addition, the use of electronic logbooks also has the potential to increase the motivation of clinical staff, which in turn

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