

Development of an Online-based Problem-oriented Record (POR) Model and Its Impact on Nurses' Documentation Ability

By ardenny ardenny

ORIGINAL ARTICLE

Development of an Online-based Problem-oriented Record (POR) Model and Its Impact on Nurses' Documentation Ability

Ardenny*, R.Sakhnan

¹Nursing, Health Polytechnic, Ministry of Health, Pekanbaru, 28281 Riau, Indonesia

¹**ABSTRACT**

Introduction: Documentation is an essential recording and reporting activity performed by nurses, as all nursing activities will be well-documented through recording and reporting. In hospitals, the implementation of nursing care documentation serves as a tool for measuring and monitoring the efficacy of nursing care services. The objective of this study was to develop a Nursing Care Instrument Design Problem Oriented Record (POR) Online Model based on the nurses' ability to complete the documentations. **Methods:** The research designs employed were qualitative and quantitative; the population consisted of 28 nurses, and the sample size was 15 nurses selected using a purposive sampling strategy. Five open-ended queries were posed to the samples, which were analysed using the Collaizi Methods. After testing the online version of the POR model, we analysed the evaluation form using a paired t-test. **Results:** The Collaizi Method analysis of the interview revealed a saturation of themes regarding the need for an online and integrated documentation system. Following this, POR Online Model-Based was developed. The result of the paired t-test indicated that the average difference in the ability of nurses to complete documentation prior to and after POR Online Model Based is 31.17, with a standard deviation of 0.116. In contrast, this difference is statistically significant, with a p-value of 0.000. It indicates that nurses will be able to complete documentations more easily after implementing POR Online Model Based. **Conclusion:** The development of an online documentation system can facilitate the documentation of nursing care by nurses and speed up the processing of nursing care services; therefore, it is feasible to develop this system.

Keywords: Documentation; Nursing Care; POR; Online

Corresponding Author:¹denny, M.Kep

Email: ardenny_2010@yahoo.co.id

Tel: +081372321907

INTRODUCTION

Implementation of documentation is crucial for evaluating the performance of nurses in ambulatory and inpatient environments. Nursing care documentation is a mechanism used by implementing nurses to evaluate the nursing care provided to patients (1). This is supported that all written or printed material can serve as evidence and records for authorised parties (2). The model for delivering nursing care must be modified according to the conditions and requirements of the patients. SOR (Source - Oriented Record), POR (Problem-Oriented Record), Progress Notes, CBE (Charting by Exception), PIE (Problems Intervention and Evaluation), and Focus (Process Oriented System) are the current models for

documenting nursing care. Every model has both benefits and drawbacks (3).

Study conducted on the effectiveness of the POR model nursing documentation format on its feasibility of use by nurses in inpatient rooms at Petala Bumi Pekanbaru Hospital showed significant differences in the length of time it took to fill out the format, the completeness of filling, the correctness of filling, and the perceptions of nurses before and after using the POR model (4). The POR model format that has been implemented thus far continues to encounter obstacles, such as nurses' lack of time and motivation to improve the veracity of the data patients complain about when they are examined. This is in accordance with research entitled evaluation of the implementation of integrated medical records at the inpatient installation of Dr. RSUP. Sardjito Yogyakarta. The results of this study, which also utilised POR-model nursing documentation, indicated that the implementation must be enhanced (5).

The recording and reporting nursing care functions are closely related to coordination efficacy, and someone within the organisation must be in charge of recording and reporting current events (6). The implementation of care documentation is appropriate since nursing is used as a metric to identify and monitor the service quality of hospital nursing services (7). All activities performed by the nurse as executor or manager must be documented and reported as a performance report that can be used for retrieval decision evaluation. A preliminary survey conducted at Petala Bumi Pekanbaru Hospital via interviews with the Manager and Head of the Inpatient Room revealed that the POR model has been implemented since 2016. However, this model's implementations never appear to be optimal. This model was not utilised by all nurses, and the system was never intended to be revised. Based on the preceding description, the researcher wished to develop a POR online model to more effectively document nursing care.

MATERIALS AND METHODS

Design

The design consists of a total of three steps; the first of which was the collection of qualitative data through in-depth interviews, direct observation, and document review in Focus Group Discussion (FGD). The second step was the development of the POR online model based on the results of the first step's analysis. The development of POR online model based was using the System Development Life Cycle (SLDC). SLDC is a system development cycle that serves to describe the primary stages and steps at each stage and attempts to discover the user-desired formula or structure for the system. The system development phase of the SDLC comprises of four phases: planning, analysis, design, and implementation. The third step employed a quantitative approach by evaluating the nurse's ability to complete documentation using the POR online model based.

Population, Samples, and Sampling

The population consisted of 28 nurses, and the sample size was 15 nurses chosen using a purposive sampling strategy. Inclusion criteria include nurses who have worked in an inpatient room for a minimum of three years, whereas exclusion criteria include nurses who have been exposed to COVID-19. The variables of this study were the development of an online-based POR model and the need to make the nursing care documentation completion process simpler and more efficient.

Instruments

Five open-ended questions were used to determine the requirements and current issues in the hospital,

particularly in the inpatient rooms. The indicator was questions about causes of non-optimal documentation system in the hospital. The second instrument was an evaluation form that assessed the impact of an online POR model on the nurses' documentation abilities. Using a paired t-test, this evaluation form was analysed. Validity and reliability were determined using the r product moment test on a sample of 10 individuals. The result was very valid and reliable.

Procedure

During the stage of preparation, the researcher obtained permission from the Poltekkes Kemekes Riau and the Petala Bumi Hospital. The researcher also obtained informed consent from the samples and began data collection by evaluating documents in the medical record. At the Implementation stage, researchers identified samples data and characteristics based on age, gender, duration of employment, and most recent level of education. Direct observation and interview session were done in Focus Group Discussion (FGD) utilized in the Petala Bumi Hospital inpatient rooms. Implementation of the FGD aimed to describe the outcomes of observations made by researchers during previous research, and then solicit participant feedback on the implementation of the POR model documentation, which was anticipated to serve as a resource for researchers in preparing instrument development for an online POR model. After gathering all the information needed, the development of POR model online based was carried out. In this stage, the researcher used System Development Life Cycle (SDLC) based on prototyping that believed as the best way to picture the inpatient room requirements by designing a system, building it, and delivering it to users. The SDLC which was the system development stage consists of four stages, namely planning, analysis, design, and implementation. The experiment was carried out directly by the sample involved. The last step was evaluation session that gathered by giving the sample a series of questions that evaluate how the samples' experience before and after using the online POR model.

Data Analysis

The Colaizzi's method used in this research to articulate the experiences of samples before the development of POR online model based. The result was the foundation of developing this research main goal; to develop POR online mode based. After that, as the evaluation mark, we gave the samples a series of question that later were analysed by using paired t-test, software that assisted the analysis using a recorder and computerized statistics, and which carried out the researcher's analysis.

Ethical Clearance

This research has complied with ethical principles with the number LB.02.03/6/79/2020 by Poltekkes Kemenkes Riau.

RESULTS

Characteristics of Samples

This study's samples demographic findings were: Twelve (80 percent) of the twenty-eight to thirty-three-year-old respondents were of this age range. 66.7% of Nurses' education were comprised of up to 10 individuals. The majority, comprised of 13 individuals (66.7%), were over 5 years old experience in inpatient room.

The results of the FGD

The results of the interview session using the Colaizzi method revealed the existence of a saturation theme. This result pertains to the design of nursing care instruments that will be implemented in inpatient rooms, specifically the documentation of POR-model nursing care that essentially focuses on the patient's primary issues. Additionally, it must be online and integrated.

Evaluation of the ability of nurses in the use of POR online model based

The results of socialization and trials conducted on all fifteen samples indicated that this application was simple to implement because it met the requirements of nursing care that had previously been implemented manually. The nursing evaluation and Integrated Patient Development Records are the focal points of comprehension when completing the POR model nursing care instrument. The trial concluded that this tool would facilitate online collaboration between nurses and other professions, particularly during the current COVID-19 pandemic. After the trial, we evaluate the samples' ability in documenting nursing care by using the POR online model based. The average difference in the ability of nurses at Petala Bumi Hospital to implement online and manual nursing care instruments was 31.17, with a standard deviation of 0.116; statistically, this difference was highly significant with a p value of 0.000. This indicated that nurses can employ online instruments for nursing care more easily than manual instruments.

DISCUSSION

The average age of the samples ranged between 28 and 33 years, the majority of samples were female with 57 nurse that have nursing education (66.7%), and the majority of samples have been in their current position for at least 5 years as many as 13 people (86.7%). Observational findings revealed that 80% of nurses had not provided comprehensive

nursing care, particularly in the patient's progress record. The majority of nurses have not yet filled out the nursing care documentation completely and accurately (8). This is due to the fact that more than 80 percent of hospital staff still hold Associate's Degree qualifications. In addition, nurses must still fill out numerous documentation formats, the majority of which were still in the form of an open field without a checklist. Research conducted by utilized a pre-experimental design pre- and post-treatment by combining the assessment format, action plan, and progress notation into a single format (9). It comes out that the test results can increase nurses' knowledge, as well as the thoroughness and accuracy of nursing documentation and nursing care documentation.

Observations made by researchers indicate that the challenge encountered is that health care professionals are more concerned with medical records than with patients (10). In contrast, with integrated care, health care employees reported focusing more on writing documentation than these patients due to the growing number of documentation sheets generated by the implementation of integrated care documentation, in conclusion nurses perform numerous non-nursing duties. This is consistent with the findings which discovered that nurses who perform a significant amount of non-nursing work will have difficulty making the correct decisions to meet client requirements if they lack adequate facilities and infrastructure (11). In addition, there is no checklist for administrators to oversee the documentation of evaluation, necessitating follow-up.

A quarter of nurses' time is spent on documentation (12). Information system users play a role in the progression of nurses and patients in terms of workflow, efficiency, and the quality of inpatient care (13). Utilizing the nursing procedure as a guide is advantageous for patients and carers (14). For that, documentation with a paper base that is performed continuously will have an impact on the quality of providing nursing care, one of which can reduce the quality of services provided, in other words, hospital management must pay attention and be able to overcome factors that affect the length of time in documentation as mentioned above, then nurse work will be efficient, improving the quality of nursing care and quality of service.

Online documentation has a significant impact on hospital nursing care documentation services (15). The results of interview analysis through FGD indicated that the recommendations for the design of developing nursing care instruments to be used in inpatient rooms were online documentation of

nursing care based on the POR model that focuses on the patient's primary concern. The objective of the design of the nursing care documentation system is to facilitate nurses' assessment, planning, implementation, and evaluation of patient development in an integrated, accountable manner, while reducing paper usage and contributing to the improvement of hospital data system.

System Development Life Cycle (SDLC) based on prototyping that believed as the best way to picture the inpatient room requirements by designing a system, building it, and delivering it to users. The SDLC which was the system development stage consists of four steps, namely planning, analysis, design, and implementation (16). During this phase, the operation of the system, its hardware, software, network infrastructure, user interface, forms and reports, and the required programs, databases, and files are determined. In this instance, the researchers centred their attention on the POR model, which was geared towards evaluating patient progress. The results of the interviews also indicated that it is essential to complete the evaluation of patient development through collaboration with professionals involved in patient nursing care, which is very helpful in meeting the patient's fundamental requirements. Therefore, a nursing care model-appropriate design must be implemented in a comprehensive documentation system.

The POR online model-based experiment was conducted directly by the sample at the Petala Bumi Hospital in the province of Riau. The evaluation of nurses' capacity to implement online and manual nursing care instruments yielded a mean score of 31.17 and a standard deviation of 0.20. In comparison to manuals, the implementation of online-based nursing care instruments has improved and become more straightforward. With a p-value of 0.000, a statistical test revealed that this difference is highly significant. This indicated that nurses can more readily utilise online instruments for nursing care than manual instruments. This is supported by research showing that the performance of nurses in performing documentation yielded nearly the same amount of data for nurses who made complete and accurate documentation compared to nurses who made incomplete and inaccurate documentation (17). The results of this study indicate that nurses' perceptions of completeness, based on their observations, are dynamic and continuously changing. According to the results of a distinct study that evaluated nurses' performance based on the completeness of their nursing care documentation, nurses frequently failed to complete documentation formats (18). To facilitate the administration and processing of nursing data, information, and

knowledge in support of nursing practise and care delivery, computerised nursing documentation was developed. It is anticipated that this computerised nursing care documentation will be implemented in every hospital once its benefits become apparent.

In further research, it was determined that input, process, and output have a significant effect on the variance in the application of the nursing documentation format during the post-test. Technical factors, behavioural factors, and organisational factors make up the input factors in nursing. The procedure is evaluated in terms of data acquisition, data analysis performed by nurses, data quality assurance, and feedback given to inpatients by nurses. The POR online model based used by nurses is effective and user-friendly in terms of completeness.

CONCLUSION

The development of online-based POR nursing care instruments is required to increase the completeness of the nursing care documentation system and enhance the performance of nurses. Based on the POR online model based, it indicated that nurses are better equipped to utilise online nursing care instruments than manual instruments. The practical implications of this study can be applied by hospital inpatient nurses, and it is recommended that further research be conducted to improve nursing care documentation.

ACKNOWLEDGMENT

The Riau Health Polytechnic of Ministry of Health is thanked for its contribution to research through the provision of technical assistance and financial support, as well as the enhancement of research results by a team of domestic specialists by Teuku Tahlil, S.Kp, M.S, Ph.D.; NIP. 197202042001121001, and abroad (Malaysia) by Prof. Dr. Nurul Huda; ID 181211-04218.

REFERENCES

1. Houston S, Leveille M, Luquire R, Fike A, Ogola GO, Chando S. Decisional involvement in Magnet®, magnet-aspiring, and non-magnet hospitals. *JONA J Nurs Adm.* 2012;42(12):586–91.
2. Iyer PW, Camp NH. Nursing Documentation: A Nursing Process Approach. *J Healthc Qual JHQ.* 1993;15(1):44.
3. Perry AG, Potter PA. *Mosby's Pocket Guide to Nursing Skills and Procedures-E-Book.* Elsevier Health Sciences; 2010.
4. Berman A, Snyder SJ, Levett-Jones T, Dwyer T, Hales M, Harvey N, et al. *Kozier and Erb's Fundamentals of Nursing [4th Australian edition].* 2018;

5. Marquis BL, Huston CJ. Leadership roles and management functions in nursing: Theory and application. Lippincott Williams & Wilkins; 2009.
6. Ardenny A, Hirzal H. Efektivitas Format Pendokumentasian Keperawatan Model Problem Oriented Record (POR) terhadap Kemudahan Penggunaannya oleh Perawat di Rawat Jalan RSUD Petala Bumi Pekanbaru. *J Kesehat*. 2016;7(3):366–76.
7. Ryandini TP. Pengembangan instrumen evaluasi asuhan keperawatan dalam format catatan perkembangan pasien terintegrasi pada pasien diabetes mellitus. 2018;
8. Cubbon M. Motivational theories for clinical managers. *Nurs Manag* 2013. 2000;7(6):30.
9. Gulick Jr SL. A Chesterfield Bibliography to 1800. *Pap Bibliogr Soc Am*. 1935;29:2–114.
10. White M, Waldron M. Effects and impacts of Productive Ward from a nursing perspective. *Br J Nurs*. 2014;23(8):419–26.
11. Peivandi S, Ahmadian L, Farokhzadian J, Jahani Y. Evaluation and comparison of errors on nursing notes created by online and offline speech recognition technology and handwritten: an interventional study. *BMC Med Inform Decis Mak*. 2022;22(1):1–6.
12. Hamzah F, Mat KC, Bhagat V, Amaran S, Hassan H. Assessing test anxiety among the first year nursing students' of university Sultan Zainal Abidinb. *Res J Pharm Technol*. 2018;11(4):1448–51.
13. Foster NM, Waldron NG, Donaldson M, Margaria H, McFaul A, Hill AM, et al. A quality improvement project to prevent, detect, and reduce delirium in an acute setting. *Aust J Adv Nurs*. 2010;28(2):24–32.
14. Fischbach FT. Documenting care: communication, the nursing process and documentation standards. FA Davis Co; 1991.
15. Sari RP, Sri WF, Efitra E. Analysis of health perception and the function case manager for completion of communication for the development of integrated patient care in the non-surgery room of dr. M. Djamil padang 2016. *Malays J Nurs MJN*. 2019;10(3):69–75.
16. Sarkar A. Overview of web development life cycle in software engineering. *Int J Sci Res Comput Sci Eng Inf Technol*. 2018;3(6):2456–3307.
17. Sockolow P, Bowles KH. Including information technology project management in the nursing informatics curriculum. *CIN Comput Inform Nurs*. 2008;26(1):14–20.
18. Morrow R, Rodriguez A, King N. Colaizzi's descriptive phenomenological method. *The psychologist*. 2015;28(8):643–4.
19. Bakon S, Wirihana L, Christensen M, Craft J. Nursing handovers: An integrative review of the different models and processes available. *Int J Nurs Pract*. 2017;23(2):e12520.
20. Kurniasari E, Ilham MIA. Hubungan Pengetahuan dan Sikap terhadap Kinerja Perawat dalam Pendokumentasian ASKEP di RSUD I Lagaligo Wotu. *Nutr Sci Health Res*. 2022;1(1):36–50.
21. Ariani N. Analisis faktor-faktor yang berhubungan dengan mutu pendokumentasian asuhan keperawatan di rsud dr rasidin padang tahun 2012. *Menara Ilmu*. 2018;12(80).
22. Potter P, Wolf L, Boxerman S, Grayson D, Sledge J, Dunagan C, et al. An analysis of nurses' cognitive work: a new perspective for understanding medical errors. 2005;
23. Wolf LD, Potter P, Sledge JA, Boxerman SB, Grayson D, Evanoff B. Describing nurses' work: combining quantitative and qualitative analysis. *Hum Factors*. 2006;48(1):5–14.
24. Jansson AB, Engstrum E. Working together: critical care nurses experiences of temporary staffing within Swedish health care: A qualitative study. *Intensive Crit Care Nurs*. 2017;41:3–10.
25. Vieira MA, Ohara CV da S, Domenico EBL de. The construction and validation of an instrument for the assessment of graduates of undergraduate nursing courses. *Rev Lat Am Enfermagem*. 2016;24.
26. Andriyanto A. Communication barrier between nurse and patient at the hospital: a systematic review. *J Health Policy Manag*. 2019;4(2):105–10.
27. Yerushalmy-Feler A, Ron Y, Barnea E, Nachum A, Matalon S, Dali-Levy M, et al. Adolescent transition clinic in inflammatory bowel disease: quantitative assessment of self-efficacy skills. *Eur J Gastroenterol Hepatol*. 2017;29(7):831–7.
28. Kelley TF, Brandon DH, Docherty SL. Electronic nursing documentation as a strategy to improve quality of patient care. *J Nurs Scholarsh*. 2011;43(2):154–62.
29. Gugerty B, Maranda MJ, Beachley M, Navarro V, Newbold S, Hawk W, et al. Challenges and opportunities in documentation of the nursing care of patients. *Baltim Md Nurs Workforce Comm*. 2007;
30. Dennis A, Wixom BH, Roth RM. Systems analysis and design. John wiley & sons; 2008.
31. Ratanto R, Mustikasari M, Kuntarti K. Pengembangan Karir Sebagai Faktor Paling Mempengaruhi Kinerja Perawat Pelaksana. *Indones J Nurs*. 2013;16(2):114–9.
32. Wolo PD, Trisnawati R, Wiyadi W. Faktor faktor yang mempengaruhi kepuasan kerja perawat pada RSUD TNI AU Yogyakarta. *J Manaj Dayasaing*. 2017;17(2):78–87.

Development of an Online-based Problem-oriented Record (POR) Model and Its Impact on Nurses' Documentation Ability

ORIGINALITY REPORT

10%

SIMILARITY INDEX

PRIMARY SOURCES

1	event.ners.unair.ac.id Internet	116 words — 6%
2	medic.upm.edu.my Internet	25 words — 1%
3	core.ac.uk Internet	23 words — 1%
4	"1st Annual Conference of Midwifery", Walter de Gruyter GmbH, 2020 Crossref	11 words — 1%
5	kclpure.kcl.ac.uk Internet	11 words — 1%
6	repository.pkr.ac.id Internet	11 words — 1%
7	psasir.upm.edu.my Internet	5 words — < 1%

EXCLUDE QUOTES

OFF

EXCLUDE SOURCES

OFF

EXCLUDE BIBLIOGRAPHY ON

EXCLUDE MATCHES

OFF