Jurnal Aisyah: Jurnal Ilmu Kesehatan

Volume 7, Issue S2, 2022, p. 303–308
ISSN 2502-4825 (print), ISSN 2502-9495 (online)

The Application of Practice-Based Simulation to New Nurses on Clinical Skills and Self-Confidence

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ARTICLE INFO

Article history:

Received 15 July 2021
Accepted 29 October 2022
Published 10 November 2022

Keyword:

Practice-Based Simulation
Clinical Skills
Self-Confidence
New Nurses

A B S T R A C T

To enhance the self-confidence and clinical skills of new nurses, it is necessary to have a learning process (education and training) utilizing the simulation learning method or Practice-Based Simulation. This study aims to analyze the effect of Practice-Based Simulation on the clinical skills and self-confidence of new nurses at Islamic General Hospital of Harapan Anda, Tegal. This study used the Quasy-Experiment method with a pretest-posttest approach using a control group design. A total of 40 respondents from both the intervention and control groups were sampled using a simple random sampling procedure. The study was conducted for four weeks. The instruments used were questionnaires and SPO. Data analysis was performed using Paired t-Test and Independent Samples t-Test. The study's findings revealed that the difference in clinical skills of ECG insertion in the intervention group was 9.65 points and 6.90 points in the control group. Mean while, the difference in clinical skill of infusion in the intervention group was 10.30 points and 7.20 points in the control group. Furthermore, the difference in the increase in self-confidence in the intervention group was 34.90 points and 23.35 points in the control group. Statistical test using Independent Samples t-Test for clinical skills found that p= 0.00, which was <0.05 while for self-confidence, p = 0.00, which was<0.05. It was concluded that Practice-Based Simulation affects clinical skills and self-confidence in new nurses at Islamic General Hospital of Harapan Anda, Tegal.

Kata kunci:

Practice Based Simulation
Keterampilan Klinis
Kepercayaan Diri
Perawat Baru

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DOI: 10.30604/jika.v7iS2.1443

A B S T R A K

Untuk meningkatkan kepercayaan diri dan keterampilan klinis perawat baru perlu adanya proses pembelajaran (pendidikan dan latihan) dengan menggunakan metode pembelajaran simulasi atau Practice Based Simulation. Penelitian ini bertujuan untuk menganalisis pengaruh practice based simulation terhadap keterampilan klinis dan kepercayaan diri pada perawat baru di RSU Islam Harapan Anda Tegal. Menggunakan metode Quasy – Experiment dengan pendekatan pretest-posttest with kontrol group design. Pengambilan sampel dengan teknik simple random sampling dengan jumlah 40 responden baik kelompok intervensi maupun kelompok kontrol. Penelitian dilakukan selama empat minggu, Instrumen yang digunakan adalah kuesioner dan SPO. Analisis data menggunakan uji Paired T-Test dan Independent Samples T-Test**.** Hasil penelitian selisih peningkatan keterampilan klinis pemasangan EKG pada kelompok intervensi sebanyak 9,65 poin dan pada kelompok kontrol 6,90 poin , dan untuk keterampilan klinis pasang infus pada kelompok intervensi sebanyak 10,30 poin dan kelompok kontrol sebanyak 7,20 poin, sedangkan untuk selisih peningkatan self confidence pada kelompok intervensi sebanyak 34,90 poin dan kelompok kontrol sebanyak 23,35 poin. Uji Statistik

menggunakan Independent Samples T-Test untuk keterampilan klinis didapatkan bahwa P=0.00<0.05 sedangkan untuk kepercayaan diri P=0.00<0.05. Disimpulkan bahwa practice-based simulation mempengaruhi keterampilan klinis dan kepercayaan diri pada perawat baru di RSU Islam Harapan Anda Tegal.

INTRODUCTION

According to World Health Organization (WHO) (2014), in (Kemenkes RI, 2018) Hospitals are an integral part of a social and health organization with the function of providing complete services (comprehensive), curing disease (curative), and disease prevention (preventive) to the community as well as training for health workers and medical research centers.

One type of service provided at the hospital is nursing. According to Law No. 38 of 2014 concerning Nursing, nursing service is a professional service that is an integral part of health services based on nursing knowledge and tips aimed at healthy and sick individuals, families, groups, or communities supported by human resources who perform according to competence. The human resource in question is a nurse, a person who has completed higher nursing education, both at home and abroad, and has been recognized by the government in line with the provisions of the applicable laws and regulations (Undang-Undang Republik Indonesia Nomor 38 Tahun 2014 tentang Keperawatan, 2014).

In recent times, new nurses face challenge sand new professional roles in a new and increasingly complex work environment where skills in clinical judgment, decision making, or decision to act is crucial and essential for patient healt hand safety(G. et al., 2006).

The first few months are challenging and stressful for new nurses; the shift of shock manifests as an experience from a familiar role, specifically as a student, to an unfamiliar role, namely as a professional nurse(Sofia Gusnia & Saragih, 2013).Confidence and clinical skills are factors that significantly affect the new nurses' professionalism. Self-confidence is a mental attitude in which a person evaluates something in order to take independent action based on their ability (See et al., 2011). While clinical skills are defined as health practitioners' actions toward patients where the outcomes of these actions can be measured.

Self-confidence is essential for a nurse to have since it allows a nurse to establish a positive assessment of herself as well as the environment or circumstance she has encountered. Nurses who are self-confident have a basic belief in their talents in a variety of settings and may urge themselves to mobilize their abilities to attain goals (White, 2009).

To increase the confidence and clinical skills of nurses in solving problems in their duties and responsibilities, a process of learning and practice is required. One of the learning methods that can be developed at this time is the adult learning method (andragogy) which places students at the center of the learning process (student-centered learning). In student-centered learning, students are required to be active and creative so that learning outcomes are expected to be better than the implementation of teacher-centered learning(Rangachari, 2010).

One of the methods of student-centered learning that could be applied in education and training for new nurses is the Practice-Based Simulation approach, which is a student-centered learning model established to achieve the integrity of an effective and innovative simulation. Students are expected to be able to be directly involved in the learning process. It is based on constructive learning theory, which states that knowledge is constructed by learners through processing experiences and interactions with their environment rather than passively transferred from learners (Parker & Myrick, 2009).

The Practice-Based Simulation approach for new nurses is crucial because it allows them to analyze clinical situations, think critically, be confident, formulate appropriate care, prioritize and provide nursing care.(Boling et al., 2016)stated that the transition from nursing students to nurses was highly challenging, and the use of simulation as part of the training of new nurses was very effective because the scenarios were created in accordance with real-world conditions in the nursing ward.

METHOD

The research design employed a quantitative method (Quasy Experiment) using a pretest-posttest design with a control group design (Sugiyono, 2017). The population in this study consisted of all new nurses at Islamic General Hospital of Harapan Anda, Tegal City with a working time of fewer than six months totaling 123 new nurses, the sample size was 40 respondents. The sampling technique utilized is probability sampling, which is a sampling technique that provides equal opportunities or possibilities for each element or member of the population to be selected as a sample(Sugiyono, 2017).

The design of this study was a provision of a clinical skills pretest (KK1) to the intervention and the control groups on the installation of the ECG which was assessed by the head of each ward when the new nurse served. In the second week, both the control and the intervention groups received a self-confidence (SC1) pretest. Previously, however, the intervention group was given Practice-Based Simulation (PBS) regarding infusion while the control group was not given. Similarly, in the second and the third weeks the control group received no Practice-Based Simulation (PBS), while the intervention group received PBS regarding ECG installation. At the end of the activity in the third week, each group, both the intervention and the control groups, were given a posttest related to self-confidence (SC2). In the fourth week, each group, both the intervention and the control groups, were given a post-test related to the installation of the ECG (KK2) which was reassessed by the head of the room. It is hoped that the treatment results would be more accurately known in order to compare before and after treatment.

RESULTS AND DISCUSSION

Table 1
Frequency Distribution Based on Respondents' Age

Category	Intervention Group	Control Group
Mean	23.40	23.85
Median	23.00	23.00
Mode	23(a)	23
Std. Deviation	1.667	1.268
Minimum	21	22
Maximum	28	27
Sum	468	477

According to the table above, the intervention and control groups in the study have the same average age, namely 23 years old, with a difference in the age range of 21-28 years for the intervention group and 22-27 years for the control group.

Table 2
Frequency Distribution Based on Respondents' Gender

Category	Intervention Group		Control Group	
	f	%	f	%
Male	6	30.0	7	35.0
Female	14	70.0	13	65.0
Total	**20**	**100.0**	**20**	**00.0**

Based on gender, the majority of respondents were female, with 14 (70.0%) in the intervention group and 13 (65.0%) in the control group. Male respondents were 6 (30.0%) in the intervention group and 7 (35%) in the control group.

Table 3
Frequency Distribution

Category	Intervention Group		Control Group	
	F	%	f	%
Never	13	65.0	15	5.0
Once	6	30.0	5	5.0
Twice	1	5.0	0	0.0
Total	**20**	**100.0**	**20**	**100.0**

According to the table, the intervention group had a better experience because there were 1 (5.0%) respondents who had two simulation experiences, 6 (30%) respondents who had one simulation experience, and 13 (65.0 %) who did not. In the control group,5 (25.0%) respondents have had one simulation encounter, and 15 (75.0%) have never had one.

Table 4
Differences in Self-Confidence Between Pre and Posttest Interventions in the Intervention and Control Groups

Category	Intervention Group	Control Group
Mean	-13.950	-.650
SD	8.121	1.182
Sig. (2-tailed)	.000	.024

The table above shows that thesignificance value(2-tailed) of Self-Confidence between pre and posttest in the intervention and the control groups was 0.000 and 0.024 respectively, (*p*-value <0.05). based on this value, it can be assumed that there is a difference in self-confidence between the pre and posttest in the intervention and the control groups because the *p*-value is <0.05.

Table 5
Differences in ECG Installation Between Pre and Posttests in the Intervention and the Control Groups

Category	Intervention Group	Control Group
Mean	-2.750	.000
SD	1.293	.918
Sig. (2-tailed)	.000	1.000

The table above shows that thereis a difference in the value of ECG installation skills between the pre and posttest scores in the intervention group with a *p*-valueof 0.000 (*p*-value<0.05). Mea while, there is no difference in the control group in the pre and posttest scores because the *p*-value is more than 0.0 more than 0.05.

Table 6
Differences in Infusion Between Pre and Posttests in the Intervention and the Control Groups

Category	Intervention Group	Control Group
Mean	-3.800	-.250
SD	1.642	.786
Sig. (2-tailed)	.000	.171

The table above shows that there are differences in the pre and posttest scores in the infusion activity for the intervention group with a *p*-value of 0.000 (*p*-value <0.05). Mean while, there is no differencein the pre and posttest scores in the control group because the *p*-value is 0.171, which is more than 0.05.

Table7
Differences in Clinical Skills Between Pre and Posttests in the Intervention and Control Groups

Category	Intervention Group	Control Group
Mean	-6.550	-.250
SD	2.305	1.251
Sig. (2-tailed)	.000	.383

The result softhe study demonstrate thatthere are differences in the pre and posttest scores in clinical skills activities for the intervention group with a *p*-valueof 0.000. Mean while, there is no difference in the pre and posttest scores in th control group because the*p*-value is more than 0.05. (0.383). Based on these results, it can be interpreted that the intervention group has a betterability in clinical skills activities after learning when compared to the control group.

Practice-Based Simulation (PBS) is a structured learning method that combines theory with practice in the form of a simulation based on a real-world situation(Husebø et al., 2015). In addition to structured steps, Practice-Based Simulation includes simple recommendations that allow

new nurses to learn autonomously and with guidance (Ruslan & Saidi, 2019). This is what enables Practice-Based Simulation to improve novice nurses' self-confidence through clinically relevant learning and practice, allowing them to be better prepared for actual practice. The findings of this study are consistent with a previous study (Omer, 2016)which suggests that the simulation method can enhance self-confidence in real life. These findings suggest that a structured and targeted Practice-Based Simulation can improve new nurses' confidence before they enter the clinical setting.

Self-confidence is described as a mental attitude in which a person judges something independently based on their abilities (Ghufron, 2011). (Walgito, 2010)also defines self-confidence as the beginning of the development of one's character such as independence, professionalism, and responsibility as characteristics obtained by a person in dealing with problems. This trust can be built by significant self-preparation and experience, one of which can be achieved through the Practice-Based Simulation program. Nurses are taught to manage patients, determine nursing attitudes and actions, and think critically by combining cognitive, affective, and psychomotor abilities in this program(Amal, 2016).

According to Bloom's taxonomy, Practice-Based Simulation falls between stages C5 and C6. C5 (synthesis) means that someone at the synthesis level can describe the structure or pattern of a previously invisible event and recognize the data or information that must be collected to reach the appropriate solution. C6 (evaluation) refers to a person's capacity to examine solutions, ideas, and techniques using appropriate criteria or current standards to assure the value of their efficacy or benefits. Meanwhile, affective ability is at A3 and psychomotor ability is at P2. Affective ability at level A3 refers to the ability to assess or determine attitudes, where at this level the ability to assess something and carry oneself accordingly is required. n accepting, rejecting, or disregarding attitude is started to form, such as accepting other people's viewpoints. While at the P2 level, psychomotor signifies readiness, where a person's ability to place himself in starting a movement, physical, mental, and emotional readiness to take an action are all present (Gunawan & Palupi, 2016). Therefore, according to this taxonomy, Practice-Based Simulation is an effective learning method for increasing new nurses' self-confidence through learning and simulations based on the actual situation.

In addition to self-confidence, the study's findings reveal the impact of Practice-Based Simulation on clinical skills. This effect has a *p*-value of 0.000 and an F-value of 0.032. These statistical findings suggest that using Practice-Based Simulation to train new nurses can help them enhance their clinical abilities.

Clinical skills are described as a person's capacity to undertake acts or perform in the clinical sector where the outcomes can be quantified or scored (Strand et al., 2017). Skills are performed not only on the basis of knowledge but also on the basis of affective and psychomotor abilities. This is consistent with the theory of skills, which states that the ability to employ thoughts, ideas, and knowledge in producing, modifying, or making anything more meaningful provides value from the activity (Hasanah, 2015).In this study, the context of the skills framework is described as cognitive (involving the use of logical, intuitive, and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools, and instruments). Meanwhile, the affective and psychomotor domains are shown as appreciation and ways of adjustment in taking action, whereas psychomotor is shown as a skill or ability to act after a person has received prior learning experiences (Quendler & Lamb, 2016).

In this study, the clinical action in question is an ECG examination and infusion, where these two actions are the most basic treatments administered to practically all hospitalized patients so nurses must learn these abilities (Noviestari et al., 2020). In practice, a nurse relies not only on knowledge to do these skills but also on affective and psychomotor ability to ensure that these acts are measured and produce the intended effects. It is necessary to develop training and experience in line with procedures, one of which employs Practice-Based Simulation.

Practice-Based Simulation is a learning method that combines simulation with a real-world situation (Park Young et al., 2013). The deployment of Practice-Based Simulation aims to provide students with knowledge as well as a realistic learning environment before they enter the service(Parker & Myrick, 2009). The existence of this simulation is supposed to increase the experience of students (new nurses), allowing them to be better prepared and proficient in carrying out their duties as nurses later on. This is consistent with Omer's (2016) study, which suggests that the simulation method can improve the experience. Therefore, it is thought that with good expertise and more experience new nurses have, they will be able to increase their clinical abilities of new nurses. This demonstrates that Practice-Based Simulation has an effect on enhancing clinical skills in new nurses due to the simulation's ability to provide experience to new nurses as students.

RESEARCH LIMITATIONS

The intervention and control groups occasionally met (for example, when eating at the food court, taking patients for additional examinations, and other activities), allowing respondents to communicate and biasing the study's results.

The clinical skills assessment was carried out by only one person, namely the head of each room, hence the assessment could be not objective.

Because the new nurse has been on duty as usual, it is possible that the infusion and ECG installation were done previously, even though it is still under the supervision of the nurse in charge of duty (PPJP) and the head of the room, and the results of the assessment can cause bias in the study results.

During the simulation procedure, particularly during the infusion, the presenter was unable to raise the pain threshold that the patient genuinely felt, including the patient's emotion when holding pain. This is due to the fact that everyone's pain reaction differs and they all have various pain experiences.

CONCLUSIONS AND SUGGESTIONS

Based on the research results, there are several things that can be concluded from the results of this study including;

1. The application of Practice Based Simulation to new nurses can improve clinical skills and self-confidence;
2. Self-confidence in the intervention group was higher than the control group;

3. Clinical skills in the intervention group were higher than in the control group;
4. There are significant differences in clinical skills and confidence of new nurses in the intervention group and the control group after being given Practice Based Simulation.

ETHICAL CONSIDERATION

This study has passed the ethical test by the Research Ethics Commission of the Faculty of Nursing, Sultan Agung University, as evidenced by the issuance of the letter of ethics 075/A.1-S1/FIK-SA/I/2020.

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 ISSN 2502-4825 (print), ISSN 2502-9495 (online)