

Conference Paper

Effect of Problem Solving Cycle (PSC) on Nursing Student's Leadership Competencies

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Abstract

Background: Problem Solving Circle (PSC) is a learning method used to build up a leadership characteristic to meet the clinical practice outcome especially in nursing management subject. The characteristic includes 3 aspects, there are knowledge/intelligence, personality, and ability. The way of thinking critically, systematically, and creative are basic characters in facing a competitive future ahead. **Objective:** This study aimed to identify the effect of PSC to student's leadership competencies on nursing management subject. **Method:** One group pre-post test design was used in this study with total 35 nursing student as samples. Data collecting have done accord to questioner as an instrument in this study which divided the competencies as 3 domains, intelligence, personality, and ability. Univariate and bivariate analysis have conducted used paired T-Test. It used to find out the difference between leadership competencies before and after implementation. Result: there was a significant difference in leadership competencies after using PSC method with p-value 0.000 (α : 0.005). **Conclusion:** Nursing education especially in clinical practice area not only to increased students skill competencies but also the leadership competencies to make them ready at their future job as nurse professional. This study showed that PSC can be an alternative learning method for improving student leadership competencies. Another study should conduct in PSC implementation with larger samples.

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1. Introduction

Learning process in educational institutions have done by various learning method which adjusts with the needs of the students and the policy of institution. Choosing the learning methods correctly can increase student's interest to follow all the program till the end. As an educator, they have to deliver the learning material effectively to get the learning competencies through righteous learning method.

Clinical learning method involves various method like experience, problem-solving, conference or group discussion, observation, bedside teaching, nursing care study, and nursing round. Practically, students often to have to practice and learn independently. It is because some difference between theory which given on bachelor degree with

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the reality in clinical setting. Therefore, the interactive and creative learning method is needed by the students to become active, independent, creative, also independent according to their concern in nursing [1].

There are many innovative learning methods developed by an educational institution, one of them is Problem Solving Circle (PSC) with 6 steps. They are problem identification and inventory, determine the priority of the problems, identification alternative of problem-solving, making practice plan, activities practice, monitoring, and evaluation of practice [2].

Achieving learning outcomes in implementation of clinical practice learning in nursing management subject still encountered many kinds of obstacles such as lack in interpersonal communication between students and supervisors and anxiety due to the interaction process with new learning environment at the hospital that causes physical and psychological burden to the students. It leads to students failure to solve the problem in the management units thereby it can affect the clinical learning outcomes.

The preliminary study conducted involving students of STIKep PPNI Jawa Barat on nursing management phase in 15 March-07 April 2018 showed that the achievement of management leadership competencies practices competence is below 80%. This low achievement of leadership competencies was due to the difference in supervising methods of each supervisor both from academic institution and clinical instructors at hospital.

Various factors can cause lower learning outcomes achievement like the student, lecturer, facility, and even an environment surround the clinical settings. While the clinical learning process is affected by the characteristics of the students, the role of clinical instructors, student management at clinical practice, the ratio between students and academic/clinical instructors, and limitation of practical and supervising time, energy and competence of clinical instructors. It can lead to maximal learning outcomes can't be achieved. Beside of that, hospital problem in procedures or regulations also collaboration arrangements between hospitals managerial team with nursing staff/department often experienced by students when in clinical practice, especially in management subject.

Well management in clinical learning process including increasing the abilities and competencies of supervisors (academic and clinical instructors), fulfill the need of good facility, fit curriculum, supervising arrangements, and collaboration with hospital are the ways to increase the achievement of learning outcomes in nursing management subject. Regulation of clinical learning management can be done through a structured clinical learning training so the students can adjust they learning styles during clinical

practice and improving their critical thinking skills, clinical understanding to solve the problems, and clinical decisions making [3].

PSC is a learning method that can build up the leadership characteristic accordance with clinical practice learning outcomes especially in nursing management subject. The characteristics are knowledge, personality, and ability as primary characters to face a competitive future ahead

2. Methods

This study was quasi-experimental design as one of quantitative research with one group pre-post test design approach. The sampling methods in this study was total sampling with 35 nursing students in the academic year 2018-2019 class A as samples. The implementation conducted with involving all the components in clinical study such as clinical instructor, student, nurses, and any other health care provider in the unit.

2.1. Data Collection

The instrument in this study used a Standard Operational Procedures which described the implementation stages of PSC. The instrument was adopted [4]. This instrument contains 28 statements in Guttman's scale to define three indicators of leadership characteristics, they are intelligence, personality, and ability.

2.2. Data Analysis

Univariate analysis was performed to describe leadership competencies before and after the implementation of PSC while bivariate analysis was performed using the paired T-Test.

3. Results

TABLE 1: Leadership Competencies Based on PSC Implementation.

Variable Learning Achievement	Mean	Median	SD	Min – Max	95 % CI
Pre-PSC	17,94	18,00	2,645	13-23	17,03
Post-PSC	20,14	20,00	2,116	15-25	19,42

Table 1 showed that the value of leadership competencies in nursing student before implementation of PSC has an average value of 17.94. The lowest value was 13 and the highest value is 23, while the value of leadership competencies post-PSC has an average score 20.14 with the lowest score was 15 and the highest score was 25.

Before conducting the bivariate analysis, normality test was conducted using skewness ratio score. The following table showed the results of a normality test.

TABLE 2: Normality test of Implementation PSC.

Learning achievements	Skewness value	Std Error	Description
Pre-PSC	0.096	0,398	Normal distribution
Post-PSC	0.058	0,398	Normal distribution

Table 5.2 showed that both of data pre or post PSC normally distributed. Based on these results, the bivariate test to determine differences between dependent and independent variable is dependent t-test or known as paired t-test.

3.1. Bivariate Analysis

TABLE 3: Leadership Competencies.

Variabel	Mean Diff	CI 95%	SE	p-value
<i>Leadership Competencies</i>	2.200	(-2.732) – (-1.668)	0.262	0.000

Table 5.3 showed that there was a significant difference in leadership competencies score after PSC’s implementation with a p-value of 0,000 ($\alpha = 0.05$)

4. Discussion

Leadership Competencies are leadership characteristics that describe the actual state of an individual which make difference for every each person. Competence refers to behaviors that describe motives, personal characteristics, self-concept, values, knowledge or skills that are brought by someone as superior performance. Nursing students are required to master the knowledge, skills, and has characters as a leader to support the clinical learning process. Clinical practice outcomes in nursing management subject include knowledge, personality, and ability to perform a role as leader in the future.

The results showed that there were differences in results before the implementation of Problem Solving Cycle (PSC) and the implementation with p-value 0,000 ($\alpha = 0.05$).

It means that there was an effect of PSC on the leadership competencies in nursing students who were practicing nursing management subject. Student's leadership competencies were formed by process that emphasizes the clinical situation. PSC is a learning method involving problem discovery, analysis, and problem solving. The main goal of problem solving is to overcome problems and find the best solution in solving it [5].

Learning the nursing management subject for students means they need to facing a lot of situations that require problem solving in various stages. By the implementation of problem solving process, leadership characteristics can be build up. Learning can happen in group and any kind of environment which pushed the students to have intelligence, ability, and alsogood personalities. The environment in this context means study group, practitioners, research, education, and practice. Therefore educational institution required to be able to design an effective learning method that can improve students abilities includes their knowledge, skill, and personality.

Increasing student ability, intelligence, and personality will make leadership competencies as an outcome. Some strategies need to develop in case to improve student competencies by encouraging students to analyze their own and other people's leadership styles also leadership skills practice.

5. Conclusion

The learning method in nursing students is a process that will determine the achievement of learning outcomes. The needs for clinical learning that triggers such problems and push them to use their critical thinking to solve the problems. The students leadership competencies will be very helpful in every process of problem solving. It is not only the learning outcome in nursing management course but also integrated with other competencies that lead to the improvement of nursing services.

The results showed that there were significant differences in leadership competencies scores between before and after implementation of PSC. It means that the PSC has a positive impact on achieving student leadership competencies. It can be one of learning method for clinical practice not only to improve skill competencies but also to increase the leadership competencies. Another study should conduct to

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Conflict of Interest

The authors have no conflict of interest to declare.

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