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Research Article

The Effectiveness of Leadership Styles and Strategies to Improve Nurses' Electronic Medical Record Quality Based on Kurt Lewin's Theory

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Abstract

Aims: This research aims to determine the effectiveness of the leadership style and strategy to improve the quality of nurses' electronic medical records through Kurt Lewin's theoretical

Methods: This research was quasi-experimental. A total of 91 nurses were participate as a respondents. Data collection was used leadership style questionnaire, Kurt Lewin-based leadership strategies and electronic medical record quality form. The intervention was carried out for 2 weeks and was divided into 3 stages, namely the unfreezing stage, moving stage and refreezing stage. The data analysis used was Wilcoxon test.

Results: The study found that a leadership style change from authoritarian to democratic was observed in the nursing profession. The intervention led to an improvement in the quality of Electronic Medical Records (EMR) from not achieved to achieved. The intervention also led to a significant improvement in EMR quality, with 73 respondents experiencing a change from not achieved to achieved.

Conclusions: Leadership style changes based on organizational conditions. Leaders must analyze members' characteristics to choose the right style. Kurt Lewin's theory provides leadership strategy training, guiding leaders in making changes step by step. Hospitals should facilitate training to improve nursing room heads' knowledge and quality.

Keywords:

Electronic medical record, improve nurse, leadership style, leadership strategy, quality of nurse

INTRODUCTION

The implementation of electronic medical records is a notable technical advancement inside hospital settings (1,2). The utilization of technology in the collection, processing, and retrieval of patient medical information within a healthcare facility is commonly referred to as electronic medical records. This approach involves the implementation of data management systems that aggregate many sources of medical data (3). Medical records play a crucial role in the healthcare profession, particularly for health workers

such as nurses. These records serve as a foundation or reference point for assessing and strategizing interventions for various illnesses. By leveraging medical records, nurses may enhance the quality of their services and safeguard their efforts in attaining optimal public health outcomes (4).

According to the Ministry of Health (5), as many as 39% of hospitals in Indonesia already use electronic medical records, and this has increased to 57% in 2021. Even though most hospitals have followed

changes in computerized technology, there are still several obstacles caused by the lack of resources that support the program (6). One of the factors is when the head of the nursing room or even the manager cannot manage effectively the change from manual records to electronic medical records, so that other staff are not able to actively follow the update (7). According to the research findings of Sulastris (8) employee empowerment necessitates the adoption of a participative leadership style, wherein the leader demonstrates competence in managing and collaborating with subordinates as equal partners in the workplace. In essence, the leader must possess an appropriate leadership strategy and be supported by capable staff members who can effectively execute it (9).

In order to provide leaders with a foundation or image that will allow them to generate more supportive forces and fewer opposing forces, Lewin's theory can be utilized as a method in leadership strategy. This can be accomplished by executing three phases of change (10,11). This is backed by the findings of study that was carried out by Rosdiana and Aslami (12), which shows that leadership style techniques that make use of Lewin's theory approach have the potential to affect changes in organizational processes. This research has the potential to make a contribution to the field of nursing, specifically to enhance the quality of care that is provided to patients. One of the ways in which this can be accomplished is by improving the amount of interaction that is had with patients.

METHODS

This research was quasi-experimental research with a pre-test and post-test research design without control group. The location of this research was in the Inpatient and Intensive Care Room at RS X Tangerang. The research was carried out in May - June 2023. The sample in this study was all nurses in the inpatient wards and

intensive care unit. The sample size was determined by total sampling, that is, the entire population was selected as a sample with inclusion criteria, namely work period of more than 1 year, not currently on maternity leave or annual leave. Meanwhile, the heads of nursing room who were given intervention had the criteria of serving for more than 1 year and participating in the intervention with a minimum of 50% of the total attendance when given for 7 days. There are a total of 6 inpatient rooms and 2 intensive care units. Wilcoxon test was used to analyze the effectiveness of leadership style and strategy to improve the quality of nurses' electronic medical records through Kurt Lewin's theoretical.

Instrument

Data collection techniques used leadership style questionnaires, Kurt Lewin-based leadership strategies and electronic medical record quality. The validity test showed that all leadership style and leadership strategy questionnaires were declared valid with a calculated r greater than the r table of 0.361. Meanwhile, the validity test for the medical record quality questionnaire was not carried out because the questionnaire was issued standardly by the Ministry of Health in 2013. The reliability test for the leadership style and leadership strategy questionnaires was carried out with the results of all questionnaires having an alpha coefficient above 0.700.

Procedure

After providing informed consent, the researcher gave a pretest to 91 nurses (respondents). At the intervention stage, the researcher provided training related to leadership strategies using Kurt Lewin's theoretical approach which was given once by the presenter and provided modules to the head of the room, totaling 8 people, in the following order:

- *First step*: the leader of nursing room receives an explanation and training on how to implement leadership strategies based on Lewin's unfreezing theory. The

leader of the group discusses with the members the factors that hinder and facilitate the use of electronic medical records. Nurses were encouraged to embrace and implement changes by the motivation provided by the leader. in the use of electronic medical records more efficiently

- *Second step:* the leaders were given an explanation and training in carrying out leadership strategies using Lewin's theory approach, namely moving. After all leaders understand the moving stage, then the leaders invite all nurses to put these changes into practice by applying methods that can make it easier to use electronic medical records from the results of discussions in the previous stage (unfreezing).
- *Third step:* the leaders were given an explanation and training in carrying out leadership strategies using Lewin's

theoretical approach, namely refreezing. After the leaders understand the refreezing stage, then leaders build stability by carrying out reinforcements and evaluating the efforts that have been carried out in the previous stages both in relation to human resources and the tools used.

After these 3 steps, the researcher conducted a post test

Research Ethics

This research was approved ethical approval from the STIK Sint Carolus Health Research and Development Ethics Committee under the reference number No.055/KEPPKSTIKSC/V/2023, and also from the Ciputra Hospital Tangerang Health Research Ethics Committee under the reference number No.011/EC-KEPK/CHCRT/VIII/2023.

RESULTS

Univariate Analysis
Sample Characteristics

Table 1.

Characteristics of Nurses at Inpatient and Intensive Care Room at RS X Tangerang (n=91)

Respondent Characteristics	F	%
Gender		
Man	14	15,4%
Woman	77	84,6%
Work period		
2 years	1	1,1%
3 years	15	16,5%
4 years	14	15,4%
5 years	3	3,3%
6 years	2	2,2%
7 years	10	11,0%
8 years	25	27,5%
9 years	21	23,1%
Mean Score		6,47

Most of the respondents were female (84.6%) with an average length of work period of 6 years.

Table 2.
Leadership Style in Inpatient Rooms and Intensive Care Rooms at RS X Tangerang (n=91)

Leadership Style	Pretest	Post-test
	F (%)	F (%)
Authoritarian	87 (95.6)	6 (6.6)
Democratic	4 (4.4)	85 (93.4)
Laissez-Faire	0 (0.0)	0 (0.0)

The majority of room heads apply an authoritarian leadership style (95.6%) based on nurses' perceptions before the intervention. Furthermore, after intervention was given, the leadership style applied was mostly democratic leadership style (93.4%).

Table 3.
Results of the Wilcoxon Test

Variable	N (-) Ranks	N (+) Ranks	N Ties Rank	Mean (+) Ranks	Sum of (+) Ranks	P Value
Leadership Style (X1)	0	82	8	42,00	3444,00	0,000

Based on the table above, it shows that 82 respondents stated that during the pretest the leadership style applied by their superiors was Authoritarian which then changed to Democratic during the posttest. Meanwhile, the N Ties value shows that there are 8 respondents who think that their leaders has not experienced a change in leadership style. The Mean Positive Rank increased by 42 while the Sum of positive ranks was 3444. Furthermore, the P-value: 0.000 (≤ 0.05), which means there was a change in Leadership Style.

Table 4.
The Quality of Electronic Medical Records Before and After the Intervention (n=91)

EMR Quality	Pre-test f (%)	Post-test f (%)
EMR Quality		
Not achieved	90 (98.9)	17 (14.7)
Achieved	1 (1.1)	74 (85.3)
Assessment		
Not achieved	88 (96.7)	8 (88)
Achieved	3 (3.3)	83 (91.2)
IDHS Diagnosis		
Not achieved	87 (95.6)	17 (14.7)
Achieved	4 (4.4)	74 (85.3)
Planning (SLKI)		
Not achieved	91 (100)	17 (14.7)
Achieved	0 (0)	74 (85.3)
Intervention (SIKI)		
Not achieved	84 (92.3)	15 (16.5)
Achieved	7 (7.7)	76 (83.5)
Evaluation		
Not achieved	58 (63.7)	6 (6.6)

Achieved	33 (36.3)	85 (93.4)
Documentation		
Not achieved	86 (94.5)	12 (13.2)
Achieved	5 (5.5)	78 (86.8)

Based on the table above, before the intervention respondents rated the Quality of Electronic Medical Records (EMR) in the Not Achieved category (90%), but after being given treatment the Quality of Electronic Medical Records changed to the majority being in the Achieved category (85.3%). Likewise, for each dimension, there was an improvement after being given the intervention from not being achieved at the pretest to being achieved at the posttest.

Table 5.
The Wilcoxon test in the achievement of Electronic Medical Record Quality from the pretest and posttest

Variable	N (-) Ranks	N (+) Ranks	N Ties Rank	Mean (+) Ranks	Sum of (+) Ranks	P Value
EMR Quality (Y)	0	73	18	37,00	2701,00	0,000
Assessment (Y1)	0	80	11	40,50	3240,00	0,000
IDHS Diagnosis (Y2)	0	71	19	36,50	2591,50	0,000
Planning (SLKI) (Y3)	0	74	17	37,50	2775,00	0,000
Intervention (SIKI) (Y4)	0	69	22	35,00	2415,00	0,000
Evaluation (Y5)	0	52	39	26,50	1378,00	0,000
Documentation (Y6)	0	74	17	37,50	2775,00	0,000

Based on the Wilcoxon analysis of the EMR Quality variable (Variable Y) it is known that N negative ranks 0 indicate that there were no respondents who experienced a change in EMR Quality during the pretest. Achieved to Not Achieved during the posttest, and positive N ranks indicate that there were 73 respondents who experienced a change in EMR Quality during the pretest in the category Not Achieved became the Achieved category during the posttest. After being given Leadership Strategy Training based on Kurt Lewin, 18 respondents did not experience changes (N ties ranks). The Mean Positive Rank or average increase is 37 while the number of positive ranks or sum of positive ranks is 2701. P-value: 0.00 (≤ 0.05) which indicates that providing Kurt Lewin-based Leadership Strategy Training is proven to be effectively able to change EMR quality from Not Achieved during the pretest to

Achieved during the posttest in each dimension.

DISCUSSION

According to Andiwilaga (13), the authoritarian or authoritarian leadership style has the characteristic that all policies are determined by the leader, the steps and technicalities in activities are determined by the leader at a certain time, so that in the following steps there is usually no certainty, and the leader tends to criticize or praise personally. and remain distant from group activities. After being given intervention, it changed to a democratic leadership style. According to Andiwilaga (13), the democratic leadership style has the characteristics of a leader who is wise and always discusses problems with his subordinates. According to Henderson (14) Leaders in the nursing scope should have a

leadership style so that the ability to direct change can run well. Based on Minister of Health Regulation No. 24 of 2022, the government has begun to require all health facilities (hospitals) to use electronic medical records. This policy requires that all departments, especially nursing, be able to implement these changes. Apart from that, implementing EMR requires good cooperation or communication between leaders and subordinates so that this can be a trigger or stimulus for changes in leadership style. The above statement is supported by the results of research conducted by Euis Soliha and Hersugondo (15) with the title effective leadership and organizational change which states that effective leadership for a leader in an era of change is a leader who has a leadership style that is able to communicate negotiated and persuasive well. so that organizational goals can be achieved.

Based on Wilcoxon's analysis of EMR Quality, it shows that there were 73 respondents who experienced changes in EMR Quality, from "Not Achieved" at the pretest to "Achieved" at the posttest after being given Kurt Lewin-based Leadership Strategy Training. Wilcoxon test results with P Value: 0.00 (≤ 0.05), meaning that there was a significant change in EMR Quality in the intervention group. Changes that occur in the quality of electronic medical records are influenced by changes in the leadership style of the head of the room from an authoritarian leadership style to a democratic leadership style. According to (14) Leaders in the nursing scope should have a leadership style so that the ability to direct change can run well. . Meanwhile (13), assumes that with this democratic leadership style when members are involved in the decision-making process it will be more possible and effective and change the behavior of members. Then involving members will create a much greater commitment to the goals and objectives of the organization. According to Djunaedi and Gunawan (16), a democratic leadership style is able to direct

subordinates to use their cognitive abilities and reasoning in solving a problem. Apart from that, this leadership style can increase innovation and creativity in carrying out their duties and obligations. The application of a democratic leadership style makes members participate with each other when making decisions or when solving problems.

Providing intervention by providing leadership style and strategy training is able to change leadership style and improve the quality of Electronic Medical Records. The leadership strategy in this case is part of the behavioral changes carried out by the head of the room to the implementer using Kurt Lewin's theoretical approach. (17) said that Lewin developed the concept of force field analysis to help analyze and understand the forces of a change initiative in nursing services. This model can be applied when an organization needs to make changes effectively by changing behavior.

Paul's research (17) with the title "Draw it, Check it, Change it: Reviving Lewin's Topology to Facilitate Organizational Change Theory and Practice" The results of this research are to explain how Kurt Lewin's theory is able to support behavior change through an approach Kurt Lewin's 3 steps by thinking and discussing so that a change can be well accepted by all targets.

CONCLUSION

The leadership style applied by a leader can change according to the conditions or demands of the organization. Every leader must be able to analyze the characteristics of his members need to be able to choose or apply the right leadership style. Leadership strategy training based on Kurt Lewin's theory is able to provide leaders' views and knowledge in analyzing the characteristics of their members and the need for change in their organization. This theory also provides guidance on how a leader should make changes step by step. It is hoped that the hospital will be facilitate training that can improve the knowledge and quality of

heads of nursing room in carrying out their duties.

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