

# Effectiveness of a Patient Safety Culture Based Leadership Model on Incident Reporting and Learning about Patient Safety

Tutiany<sup>1</sup>, Ani Nuraeni<sup>1</sup>, Mumpuni<sup>1</sup>, Ridwan Setiawan<sup>2</sup>, Heru Santoso Wahito Nugroho<sup>3</sup>

<sup>1</sup>Department of Nursing, Health Polytechnic of Jakarta I, <sup>2</sup>Department of Nursing, Health Polytechnic of Bandung <sup>3</sup>Health Polytechnic of Surabaya

## Abstract

Patient safety incidents in hospitals are still common, but reported incidents are relatively small so that there will be an impact on the lack of improvement efforts. This study aims to identify the effectiveness of the leadership model based on patient safety culture on incident reporting and ongoing learning about patient safety, using pretest-posttest with control group design. The study was conducted in hospitals that have implemented patient safety programs in Jakarta and Bandung. The study sample was 145 implementing nurses, selected by simple random sampling technique, 90 for the intervention group and 55 for the control group. Data were analyzed by T-test and Mancova. The results of the study showed that in 3 months, there was an increase in the leadership capacity of the head of the room, the frequency of incident reporting and learning; and there is a decrease in the factor of reporting incidents. The component of the leadership model that increases incident reporting and learning is self-confidence, ideal influence, and intellectual stimulation. Other influential factors are staffing status and gender. The dominant factor is intellectual stimulation.

**Keywords:** *leadership model, intellectual stimulation, patient safety culture, incident reporting, continuous learning about patient safety*

## Introduction

The incident reporting system is the main tool to help identify patient safety problems and provide data to provide learning, as well as help to realize safer health services for patients. Patient safety has become a global issue since a report from the Institute of Medicine (IOM), United States (2000) which revealed the results of studies in hospitals in Utah and Colorado that found adverse events = 2.9%, and 6.6% of them died. In Indonesia, based on the KKP-RS Monitoring & Evaluation Report (2012), the incidence of patient safety in a number of hospitals in 6 years (2006-2011) was 555 incidents, including almost injuries in 283 cases, an unexpected incidence of 272 cases.<sup>(1)</sup>

Reporting the incidence of patient safety in the treatment room that is not optimal and the frequent occurrence of KNC or KTD cannot be separated from the performance of nurse managers in the inpatient room in applying their leadership roles. Casida<sup>(2)</sup> states that the factors that influence the application of patient safety measures include the leadership behavior of the head of the room with the strong blaming culture, lack of trust, not understanding the benefits, and not optimal role of the head of space in mentoring, supervision, monitoring and evaluation. One effort to build and develop a safety culture (including a culture of incident reporting) is with structural empowerment, including through empowering care unit managers<sup>(3)</sup>.

This study aims to examine the effectiveness of a leadership model based on patient safety culture on incident reporting and ongoing learning in hospitals.

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## Corresponding author:

**Heru Santoso Wahito Nugroho**

E-mail: heruswn@gmail.com

Address: Pucang Jajar Tengah Street 56 Surabaya

## Method

This study used a pretest-posttest with control group design. The population of this study were implementing

nurses working in 2 hospitals in Jakarta who had implemented patient safety programs (as intervention groups and control groups) and one hospital in West Java (intervention group). The sample size was 145 nurses (90: intervention group and 55: control group), which were selected by simple random sampling technique. Data was collected using a questionnaire developed by Tutiany<sup>(4)</sup>, which had passed validity and reliability tests. The collected data was analyzed using the T and Mancova tests.

The model implemented is a patient safety culture based leadership model that is an integration model of the concept of transformational leadership models, leadership for change and the concept of patient safety culture to build a patient safety culture. Patient-based culture based leadership consists of 14 components<sup>(4)</sup>, but in this study only 9 components with the highest correlation were tested, including: 1) confident and increased staff confidence, 2) trust, 3) political skill, 4 ) effective communication, 5) ideal influence, 6) individual consideration, 7) intellectual stimulation, 8) change and renewal of self and staff, and 9) mentoring.

### Findings

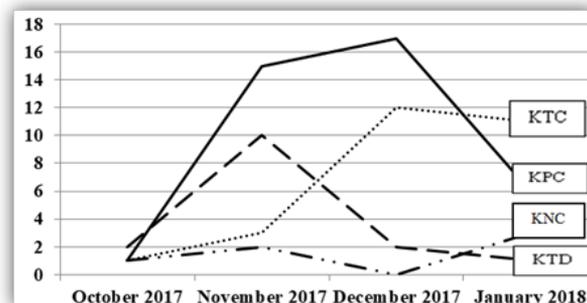
**Table 1. Differences in Head Room Leadership Before and After Intervention**

Variable	P-value	Interpretation
Confident	0.145	NS
Trust	0.032	S
Political skill	0.118	NS
Individual consideration	0.031	S
Effective communication	0.095	NS
Pengaruh ideal	0.161	NS
Intellectual stimulation	0.116	NS
Perubahan & pembaharuan	0.343	NS
Mentoring	0.282	NS

Note: S=significant, NS=not significant

There are only 2 subvariables that change after the intervention, namely individual trust and consideration.

Based on the monitoring and evaluation report of the Hospital Quality and Patient Safety Committee, it was found that there was an increase in incident reporting after the research intervention in the hospital where the intervention was (Figure 1.)



**Figure 1. Increased frequency of reporting of patient safety incidents, both reporting on KTD, KNC, KTC, and KPC.**

### Discussion

This study aims to identify the effectiveness of a leadership model based on patient safety culture on reporting incidents and learning about patient safety against incident reporting and learning about patient safety. The leadership model intervention included training, practical guidance (role play) about leadership and incident reporting for 2 days to the head of the room who applied the model and to the nursing supervisor in the hospital. Before the training, researchers collected data (pre-intervention) from the implementing nurses. After completing leadership training, the head of the room applies leadership every day, including briefings, socialization of the importance of incident reporting, hand off / hand over, pre / post-conference, and monitoring. Leadership implementation is carried out by the head of the room for 12 weeks. Mentoring for the application of leadership by supervisors is conducted every week for 4 weeks, followed by supervision every week for 8 weeks. Each supervisor is in charge of accompanying 1-3 heads of space. Every mentoring or supervision, the supervisor uses the observation guide provided. The researcher did not make a guidance and supervision guide, but the supervisor used the same leadership application manual as the head of the room.

The research team supervised (monitored and evaluated) the application of leadership in the Hospital directly or indirectly, namely monitoring the headroom diary and the results of supervision of data collection II (post intervention), this was done after the implementation of leadership for 2 weeks.

Leadership is the ability and individual process to influence, motivate, facilitate, and make other people (individuals and collectives) able to understand what needs to be done and how the task is carried out effectively, and agree to contribute to the effectiveness and success of achieving organizational goals. Patient-based leadership in safety culture consists of 9 components, namely confident, trust, political skills, individual consideration, effective communication, ideal influence, intellectual stimulation, change & renewal, and mentoring.

Confident means having confidence in yourself and what you do, believing in physical and proof by making this belief clear and explicit to others<sup>(5)</sup>. The results of confirmatory factor analysis for the chief financial leadership model (Tutiany)<sup>(4)</sup> show that the component of leadership that contributes most is confident and the ability to increase followers' confidence. Ergeneli et al.<sup>(6)</sup> explain that followers' self-confidence and motivation can be built by the presence of communication leaders who inspire their followers.

The study results of Tutiany<sup>(4)</sup> show that trust is an important component for leadership in an organization. Trust is a dimension of leadership behavior that can be formed by developing a vision, positive relationships, developing participatory culture, and mutual respect<sup>(7)</sup>. Mora<sup>(8)</sup> explains that trust is an important factor to make workers do something the leader wants. Avolio & Bass (2004) cit. Mora<sup>(8)</sup> add that trust in leaders can increase if the leader is able to issue charisma that makes the worker have a sense of admiration for his boss. Charisma is also an aspect that has a big influence on follower satisfaction with leadership.

Political skill is one of the important components of the leadership construct for change. Tutiany<sup>(4)</sup> reported that political skills contributed greatly to leadership development.

The descriptive analysis results for individual consideration dimensions show a value of 2.98. Mora<sup>(8)</sup> explains that individual consideration is the understanding of leaders in looking at differences in needs between members, and adapting to their behavior. The leader delegates his power, but still provides guidance if needed and treats each follower as equal and in accordance with each individual<sup>(6)</sup>. Individual consideration influences the transformational leadership that

will be carried out. But the results of research conducted by Hoffmeister et al.<sup>(9)</sup> state that individual consideration is less related to leadership in the context of safety. The study reports that the most important is the dimension of ideal influence.

In this study, the communication component of the head of the room significantly contributed 88% to the success of the leadership of the head of the room. The results of this study are in accordance with the Concept of Dynamic Interaction proposed by King<sup>(10)</sup> that the factors that contribute to success in interacting or carrying out interpersonal relationships are communication skills, transactions in achieving organizational goals, application of roles, and management of stress. It can be said that communication is one of the important dimensions in leadership and must also be supported by other dimensions to build ideal transformational leadership.

The results of Tutiany's study<sup>(4)</sup> show that the correlation value of the leadership construct with the components of ideal influence is 0.86. The ideal influence is associated with the level of trust, respect, and admiration gained by the leaders of their followers. This also relates to the awareness of the followers that the leader has something different compared to other members (honor and dignity).

Intellectual stimulation is an effort to increase employee interest and awareness of problems and increase their capacity to think about various problems in new ways<sup>(11)</sup>. Leaders must make their workers think about problems and support them to offer creative solutions and challenge them to think again about some basic assumptions and ideas that were never asked before. Efforts to improve the ability of intellectual stimulation, namely by reading the results of the latest research, attending seminars and scientific activities so that knowledge and insight can increase.

From the results of the descriptive analysis, the average score of the intellectual stimulation capacity of the head of the room was 71.5%, which means that it is still below the standard set. In this study, the relationship of leadership constructs with dimensions of intellectual stimulation was also significant. In other words, referring Bass (1985) cit. Ergeneli et al.<sup>(6)</sup> intellectual stimulation makes transformational leaders become more proactive, more creative, new-minded, and innovative in every idea

Tutiany<sup>(4)</sup> reports that changes and renewal of oneself and others have a significant correlation with the leadership construct. This is in line with the ICN statement (2005) cit. Shaw<sup>(5)</sup> that transformational leadership influences changes in motivation that increase. Nurses who participated in the training developed by ICN some of them also attended different workshops and seminars to get a change. Other nurses register as participants in new skills programs such as computer technology and clinical practice. Most of them report receiving approval that this becomes an experience and stimulates to continue learning. In some countries there has been an increase in recipients of approval to continue their studies to obtain a higher nursing degree or PhD.

Updates and changes are needed to respond to new influences and emergency pressures. Effective leaders must proactively initiate change, and plan strategies as needed. Leaders who implement change see a way to improve strategies and systems that are related, creative, and innovative, not afraid to try new ideas. This may be risky, but effective leaders accept that learning review and renewal is also carried out at the individual level. Changes occur unplanned. But in the organizational context, activities make different things intentionally and have goals<sup>(12)</sup>. Changes that have goals can have an impact on the organization. Every change takes place at the macro level or on a large scale, can affect micro or small scale levels to the team and each individual<sup>(13)</sup>.

The results of the Tutiany study<sup>(4)</sup> showed that there was a strong correlation between the role of the mentor and the head leadership variable. The application of the mentor role significantly has an important role in implementing leadership. The mentor is expected to be able to benefit from the experience and provide wise advice to his followers. Referring ECSACON (2003) cit. Shaw<sup>(5)</sup>, the role of the mentor in leadership can also influence followers to be able to identify problems and be able to adopt attitudes that provide a sense of self-confidence as a nurse leader.

Referring to the manager's role, the head of the room as manager and leader is responsible as a role model, motivating and directing implementing nurses and other employees to implement patient safety. Leadership and safety have complex relationships and emphasize that different aspects of leadership will produce different results. Furthermore, less concrete leadership aspects (such as attributes and ideal behavior) are often considered the most important.

Based on the results of the study it was concluded that there was no significant difference between the value of conscious reporting, frequency, reporting barriers, and learning in the intervention group and the control group. However, it is substantially apparent that there are differences between the intervention and control groups. Likewise, changes in the value of report frequency and learning in the intervention group were higher than the control group. The average reporting barrier in the control group was higher than the intervention group.

In general, from the results of the pretest and posttest tests in the intervention group, it was seen that there were only two variables that applied patient safety culture-based leadership that changed significantly, including individual trust and consideration.

## Conclusion

The comparative analysis between the control and intervention groups, before and after the intervention, found two components of the leadership model that changed / differed significantly, namely trust and individual considerations. As for the incident and learning reporting variables there were no significant differences.

The test results influence the leadership model based on patient safety culture on incident reporting and learning, showing that self-confidence has a negative effect on barriers, and has a positive effect on learning. Trust has a positive effect on awareness of incident reporting and learning about patient safety (the increased trust in the head of the room, the awareness of incident reporting and learning about patient safety will be higher), and negatively affects barriers to reporting incidents. Intellectual stimulation and mentoring have a negative influence on barriers to reporting, but have a positive effect on learning about patient safety.

Factors that influence incident reporting and learning about patient safety are staffing, gender, confidence, ideal influence, and intellectual stimulation. And the dominant factor is intellectual stimulation.

## Additional Information

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**Conflict of Interest:** No

**Ethical Clearance:** Yes

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