RESEARCH ARTICLE

Changing the Behavior of Doctors in the Prevention and Control of Infections in Hospitals

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ABSTRACT

Background and Purpose. Health Care-Associated Infections, hereinafter abbreviated as HAIs, are infections that occur in patients during treatment in hospitals and other health care facilities where when they enter there are no infections and are not in the incubation period, including infections in the hospital but appear after patients returning home, as well as infections due to work for hospital staff and health workers related to the process of health services in health care facilities. Health Care-Associated Infection (HAIs) is a serious problem for all healthcare facilities worldwide, including in Indonesia. The purpose of this study was to analyze the influence of organizational culture, knowledge and motivation simultaneously or individually on the behavior of doctors in infection prevention and control. Methods: This study uses a quantitative approach with an explanatory causality research design. The technique of collecting data was using a questionnaire and tested using Path Analysis. Results: The research shows that the above confirms Lawrence's theory that a person's behavior in carrying out an activity wherein this study is infection prevention and control measures are determined by three factors, namely Predisposing factors (self-initiated factors), Enabling factors (enabling factors) and Reinforcing factors. (reinforcing factor). Implications: This research helps hospital management develop a more structured infection prevention and control committee (PPI) program and develop a reporting system for each action in infection prevention and control based on electronic or web.

Keywords: Behavior, Organizational Culture, Knowledge, Motivation.

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I. Introduction

Health Care-Associated Infections, hereinafter abbreviated as HAIs, are infections that occur in patients during treatment in hospitals and other health care facilities where when they enter there are no infections and are not in the incubation period, including infections in the hospital but appear after patients returning home, as well as infections due to work for hospital staff and health workers related to the process of health services in health care facilities. Health Care-Associated Infection (HAIs) is a serious problem for all health care facilities worldwide, including in Indonesia. Research conducted by the National Nosocomial Infections Surveillance (NNIS) and the Centers for Disease Control and Prevention's (CDC's) in 2002 reported that 5 to 6 cases of HAIs per 100 hospital visits. An estimated 2 million cases of HAIs occur each year in the United States, costing $2 billion. Another study conducted by the World Health Organization (WHO) in 2002 showed that about 8.7% of the 55 hospitals in 14 countries representing 4 WHO regions with a prevalence of Europe 7.7%, Middle East 9.0%, Asia Southeast at 10% and West Pacific 11.8% (Ministry of Health, 2008).

Infection prevention and control is a measurement system using epidemiological diagnosis aimed at preventing the spread and transmission of infectious diseases in health facilities (Palmer, 1984). Infection prevention and control in hospitals and health care facilities in an effort to minimize or prevent infection in patients, staff, visitors and the community around the hospital (Kemenkes, 2011). Infections that occur in hospitals can not only be controlled but can also be prevented by taking steps by applicable procedures. To minimize the risk of infection in hospitals and other health facilities, it is necessary to implement an Infection Prevention and Control (PPI) program, which includes activities including planning, implementation, coaching, education and training as well as monitoring and evaluation (Depkes, 2008).

Green *et al.* (1980) analyzed human behavior related to health problems. That the health of a person or society is influenced by 2 main factors, namely behavioral factors (behavior causes) and non-behavioral causes. Furthermore, the behavioral factor itself is formed from 3 factors, namely:

1) Predisposing factors (factors from oneself) are factors that precede behavior to determine thoughts or motivations

consisting of knowledge, attitudes, perceptions, values, beliefs, and so on.
2) Enabling factors (enabling factors) is the ability of the resources needed to shape behavior. Enabling factors to consist of supporting facilities, regulations, and resource capabilities.
3) Reinforcing factors are factors that enable workers to behave at work, manifested in the form of supervision carried out by supervisors and supervisors, rewards and punishments, and co-workers.

According to Robbins (1996) the notion of organizational culture is a system of shared meaning held by members that distinguish an organization from other organizations. This system of shared meaning, when examined more closely, is a set of key characteristics that an organization values. Organizational culture is concerned with how employees perceive the characteristics of organizational culture, not with whether employees like the culture or not. According to Robbins (1996), there are 7 dimensions of organizational culture, namely:

1) Innovation and risk. The extent to which employees are supported to be innovative and take risks.
2) Attention to detail. The degree to which employees are expected to demonstrate thoroughness, analysis and attention to detail.
3) Result orientation. The degree to which management focuses on results rather than on the techniques and processes used to achieve those results.
4) People orientation. The degree to which management decisions take into account the effects on people within the organization.
5) Team orientation. The degree to which work activities are organized around teams, rather than individuals.
6) Aggressiveness. Related to the aggressiveness of employees.
7) Stability. The organization emphasizes maintaining a good organizational culture.

By assessing the organization based on these seven characteristics, a composite picture of the culture of the organization is obtained. This image forms the basis for the feeling of shared understanding that members have about the organization, how things are done within it, and the way members behave (Robbins, 1996).

According to Gordon (1994) the notion of knowledge is the organizational structure of knowledge which is usually a fact of procedure that if carried out will fulfill the possible performance. Based on the Revised Blom Taxonomy theory, Anderson and Krathwohl (2010) explain that the dimensions of knowledge are categorized into four dimensions of knowledge, namely: Factual knowledge which is knowledge about the basic components that students must know to explore a scientific discipline or to overcome problems in learning. disciplines (Anderson *et al*., 2001). Conceptual knowledge is the knowledge that relates between components in a large structure/ arrangement and allows everything to function together. Conceptual knowledge includes categories, classifications, principles, and generalizations as well as theories, models, and structures (Anderson *et al.* 2001). Procedural knowledge is knowledge about how to do something and procedural knowledge often takes the form of a set of procedures to be followed. This knowledge includes skills, algorithms, techniques, and methods, all of which are referred to as procedures (Lwanga, 2012). And the last is metacognitive knowledge which is knowledge about general understanding and awareness of self-knowledge (Anderson *et al.*, 2001).

Chaplin (1997) states that motivation is energy that organizes behavior in a maintained, goal-directed manner caused by tension within the individual as a driving factor for the organism. The theory of motivation was first proposed by Abraham Maslow. He argued about the hierarchy of needs that underlie motivation. According to Maslow, if a leader wants to motivate someone, then he needs to understand which rung of the ladder the subordinate is on and focus on meeting those needs or his needs at that level. Meanwhile, according to Herzberg (1966), people (employees) want two kinds of need factors, namely internal factors, and external factors.

RSUD Kembangan is a Public Health Center in Kembangan District which was developed into a Kembangan Hospital with the background of increasing community demands for secondary health services. The location of the Kembangan General Hospital is on Jalan Topaz Raya Blok F II No.3, North Meruya Village, Kembangan District, West Jakarta Administrative City.

II. Research Methods

This study uses quantitative research methods with the type of research is causality explanatory. This study uses a survey method through data collection carried out to doctors who work in RSUD Kembangan as many as 46 people. The population in this study was 46 doctors consisting of 23 specialists, 1 specialist dentist, 17 general practitioners and 5 dentists. In this study, the authors used a sampling technique using total sampling, which is equal to the total population.

III. Research Instrument

A demographic data questionnaire was used to see the characteristics of respondents. This instrument consists of gender, age, and last education.

The data in this study were collected through questionnaires distributed to respondents. The research questionnaire consisted of 60 question items which were divided into four variables, namely the behavior of doctors in infection prevention and control, organizational culture, knowledge and motivation. The research questionnaire was prepared by submitting a closing statement and answer choices to be submitted to the research sample with a Likert interval scale.

The physician behavior questionnaire in infection prevention and control was used to measure the assessment of physician behavior in infection prevention and control. Researchers modify the behavioral instrument based on theory

and research (Green *et al.*, 1980) where the behavioral instrument consists of 3 dimensions, namely predisposing factors, reinforcing factors and enabling factors. The measurement scale of the questionnaire uses a Likert scale of 1-4. 1 = Disagree, 2 = Uncertain, 3 = Agree, 4 = Strongly Agree.

The organizational culture questionnaire was used to measure the assessment of organizational culture in terms of infection prevention and control behavior. The researcher modifies the organizational culture instrument based on Robbins (1996) theory.

A knowledge questionnaire was used to measure knowledge in infection prevention and control behavior. Researchers modify the knowledge instrument based on the theory and research of Anderson and Krathwohl (2010).

The motivation questionnaire was used to measure the motivation of doctors in terms of infection prevention and control. The researcher modified the motivational instrument based on Herzberg's (1966).

IV. Result

Characteristics of respondents in this study showed that respondents of male were 15 people (32.6%) and respondents of female were 31 people (67.4%). The majority of respondents were female and the majority of respondents were in the age range of 30-40 years, which was 47.8%, followed by the age range of 40-50 years as much as 32.7%. In addition, the majority of respondents are in the last undergraduate education as much as 50%, followed by postgraduate as much as 47.8% and doctoral as much as 2.2%.

Then after the questions were declared valid and reliable, the researchers conducted sampling using descriptive data analysis techniques using the Three Box Method which divided the item score questions into low, medium, and high. The researcher analyzed with descriptive analysis in which this analysis technique got a picture of the respondents' answers regarding the research variables used. This analysis was carried out using the Index Analysis Technique. Based on the average index score of the Three Box Method, the average score for each variable is shown in Table I.

The analysis used in this research is path analysis where path analysis is used to describe and test the model of the relationship between variables in the form of cause and effect. In this study, path analysis is used to determine the effect of variables X1, X2, and Y on Z can be described in Fig. 1.

TABLE I: Respondent Response Matrix Based on Three Box Method

Variable	Score			Behaviour
	Low (11,5 – 23,0)	Middle (23.01 – 34,6)	High (34.7 – 46,1)	–
Organizational Culture	–	–	v	Enough in understanding
Knowledge	–	–	v	Sufficient in ability and knowledge
Motivation	–	v	–	Lacking in motivation and desire
Behavior in infection prevention and control	–	–	v	enough in intention

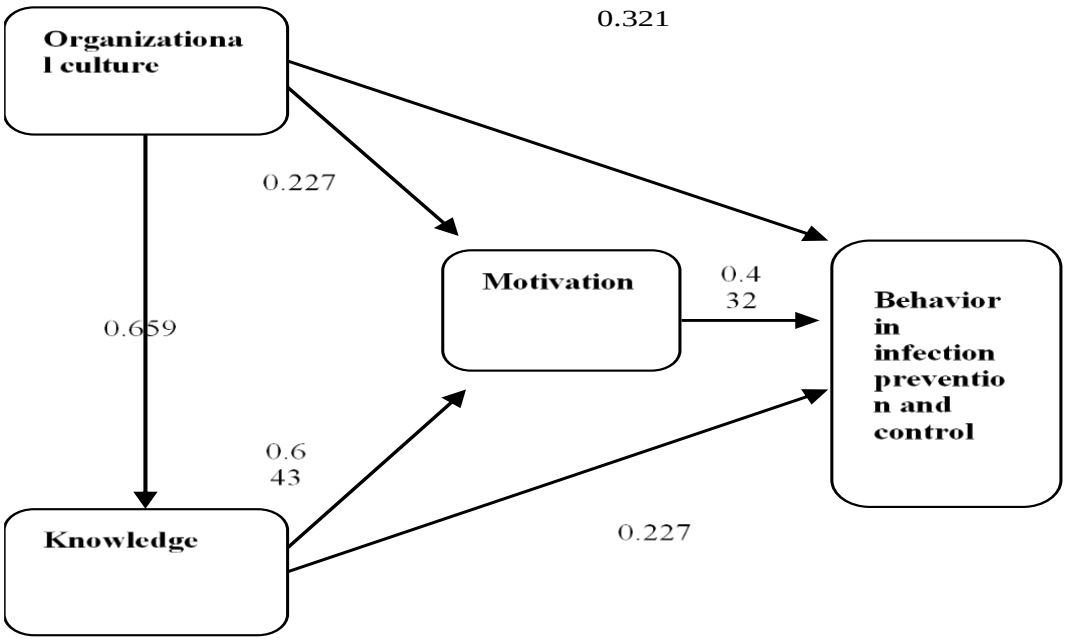

Fig. 1. Path Analysis Structure.

This study is divided into 3 sub-structures, namely sub-structure 1 which examines the influence of organizational culture on knowledge, sub-structure 2 examines the influence of organizational culture on motivation and knowledge on motivation, and sub-structure 3 examines the influence of organizational culture on behavior in infection prevention and control, the effect of knowledge on behavior in infection prevention and control, and the influence of motivation on infection prevention and control.

From the results of data processing that has been carried out, it can be discussed the following matters:

1) Organizational culture has a significant influence on knowledge where the resulting effect is 0.434.
2) Organizational Culture has no significant effect on motivation where the total effect generated is 0.227.
3) Knowledge has a significant effect on motivation where the total effect generated is 0.643
4) Organizational culture has a significant influence on the behavior of doctors in infection prevention and control where the resulting effect is 0.599.
5) Knowledge does not have a significant influence on the behavior of doctors in infection prevention and control where the resulting effect is 0.325.

V. Discussion

A. Organizational Culture Has A Significant Effect On Physician Behavior In Infection Prevention And Control

The results showed that organizational culture had a significant effect on the behavior of doctors in infection prevention and control. This is evidenced by statistical results where the t-value is 0.599. This shows that there is innovation and risk taken, attention to detail in results-oriented work, as well as employees and the stability of the team, is less than doctors in terms of taking infection prevention and control measures in hospitals. According to Wood *et al.* (2001), organizational culture is a system of beliefs and values developed by an organization where it guides the behavior of members of the organization itself. In research conducted by Edwards (2012), behavioral changes in health workers are needed to improve adherence to infection prevention and control (PPI) guidelines. Therefore, according to research conducted by Adriana (2018), for infection prevention and control interventions to be effective in health facilities around the world, recognition of sociocultural factors is very important with interventions that are adapted to local cultures.

B. Knowledge Has No Significant Effect On The Behavior Of Doctors In Infection Prevention And Control

The results showed that knowledge had no significant effect on the behavior of doctors in infection prevention and control. This is evidenced by statistical results where the t-value is 0.325. This shows that the knowledge of doctors factual knowledge, conceptual knowledge, procedural knowledge, and metacognitive knowledge do not affect the intentions of doctors to behave or take infection prevention and control measures. The results of this study are irrelevant and in line with research conducted by Jain *et al.* (2020) which states that knowledge of PPIs can affect PPI practice, whereas according to Gilbert and Kerridge (2019) doctors are aware of the importance of infection prevention and control. In addition, the results of this study are also not supported by research conducted by Alsahafi and Cheng (2016) which states a poor level of knowledge about the mode of transmission, which has implications for the rapid spread of infection in hospitals that it can be said that poor knowledge reflects poor behavior in prevention and treatment). infection control in hospitals.

C. Motivation Has A Significant Effect On The Behavior Of Doctors In Infection Prevention And Control

The results showed that motivation had a significant effect on the behavior of doctors in infection prevention and control. This is evidenced by statistical results where the t-value is 0.432. This shows that motivation can increase doctors' intentions to behave in infection prevention and control activities. This research supports the previous research conducted by Tokan and Imakulata (2019) whose research results show that intrinsic motivation has a direct effect on behavior and is supported by research conducted by Omotayo *et al.* (2021) which states that apart from intrinsic factors, extrinsic factors also affect a person's behavior. Furthermore, Houghton *et al.* (2020) also stated that some health workers feel motivated to follow guidance for fear of infecting themselves or their families, or because they feel responsible for their patients. Some healthcare workers find it difficult to wear masks and other equipment when it makes patients feel isolated, frightened, or stigmatized. Some of the things above motivate health workers to behave well in infection prevention and control.

D. Organizational Culture Has No Significant Effect On Motivation

The results showed that organizational culture had no significant effect on motivation. This is evidenced by statistical results where the t-value is 0.227. This shows that the organizational culture that exists within the hospital does not increase the influence on the motivation of doctors to take infection prevention and control measures. The results of this study are not supported by previous research conducted by Al-Sada *et al.* (2017) who research stating that organizational culture has a significant and positive influence on employee motivation. In other words, the higher the organizational culture, the higher the employee's motivation to work. This is also revealed by previous research conducted by Yusof *et al.* (2016) wherein it was said that organizational culture can be categorized into 2 main types: bureaucratic culture and supportive culture.

E. Knowledge Has A Significant Effect On Motivation

The results showed that knowledge had a significant effect on motivation. This is evidenced by statistical results where the t-value is 0.643. This shows that increasing one's

knowledge can increase one's work motivation. The results of this study are relevant to the research conducted by Nguyen (2020) which states that knowledge and positive attitudes are key factors that stimulate the motivation of social worker students to work. and between these two the most influential factor is knowledge. it is said that the addition of knowledge can increase motivation at work. The same thing was also expressed by David (2020) that knowledge greatly influences motivation, especially extrinsic motivation where extrinsic motivation can increase if employee knowledge is increased.

F. Organizational Culture Has A Significant Effect On Knowledge

The results showed that organizational culture had a significant effect on knowledge. This is evidenced by statistical results where the t-value is 0.434. This shows that increasing one's knowledge can be influenced by organizational culture which is by the theory proposed by Robbins (1996) which states that innovation and risk-taking, attention to detail, results in orientation, people orientation, team orientation, aggressiveness, and stability influence increasing knowledge of doctors in infection prevention and control. The results of this study are in line with the research conducted by Lai and Lee (2007) who in his research revealed that there is a significant correlation between organizational culture and knowledge. His research revealed that there are good benefits from an organization if it improves the culture within the organization in terms of implementing knowledge to its employees. this is in line with subsequent research conducted by Ahmady *et al.* (2016) which states that strengthening organizational culture in a company can increase employee knowledge and management.

VI. RESEARCH FINDINGS

The results of the current study confirm Lawrence's theory that a person's behavior in carrying out an action which in this study is infection prevention and control measures are determined by three factors, namely Predisposing factors (self factors), Enabling factors (enabling factors) and Reinforcing factors (factors from oneself). amplifier). The results of this study also obtained knowledge and motivation which are variables in Lawrence's theory and organizational culture can increase the behavioral intention of doctors in carrying out infection prevention and control activities.

Based on the results of the research above, it can be summarized that the findings in this study are organizational culture, and motivation influence the behavior of doctors in infection prevention and control either individually or simultaneously. In addition, knowledge does not affect the behavior of doctors in infection prevention and control and organizational culture does not affect the motivation of doctors in infection prevention and control.

VII. CONCLUSION, IMPLICATIONS AND SUGGESTIONS

A. Conclusion

Based on the results of the research and discussion, several conclusions can be drawn as organizational culture, knowledge and motivation influence the behavior of doctors in infection prevention and control either individually or simultaneously.

B. Implication

The implications that can be given by this research are as follows:

1) This research helps hospital management in developing a more structured infection prevention and control committee (PPI) program.
2) This research helps management in developing a reporting system for every action in the prevention and control of infection based on electronic or web-based so that it can monitor infection prevention and control activities carried out by medical personnel, especially doctors.
3) This research can help management to support infection prevention and control programs by providing regular socialization on how to carry out these activities.
4) This research can help management to make policies on infection prevention and control socialization in employee orientation programs.

C. Suggestions

After reviewing the five hypotheses that have been tested, the suggestions from the researchers include:

1) Management, especially at the hospital leadership level, needs to have a full-time Infection Prevention Control Nurse (IPCN) whose job descriptions in IPCN work can be assisted by several IPCLNs (Infection Prevention and Control Link Nurse) from each unit, especially those at risk of infection. The provisions of the IPCN are IPCNs who work full time, with a ratio of 1 (one) IPCN for every 100 - 150 beds in hospitals.
2) Maximizing the provision of training and socialization by increasing the commitment of human resources, in this case, doctors, to attend these activities. Commitment can be given by mutual agreement through a system of rewards and punishments.
3) Conduct basic PPI training through in-house training, where training is carried out in hospitals by inviting and using modules and resource persons from Perdalin or the Ministry of Health so that all human resources, especially doctors in hospitals, can be involved. In this case, the hospital can coordinate with the Health Service or the Ministry of Health.
4) Completing hand washing facilities and infrastructure by attaching hand washing procedures to every available antimicrobial liquid placement.

5) Management must build a hospital organizational condition system in a better direction so that employees who work in this case doctors will be comfortable working.
6) Management can facilitate cooperation and mutual support between doctors by holding joint gatherings so as to create a good relationship between doctors and support each other's achievements.

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