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Factors Influencing Innovative Management of In-Patient Departments among Community Hospitals, Ministry of Public Health

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Abstract

Background: Innovative management of in-patient department has played a crucial role in developing quality nursing services and outcomes as well as enhancing patient safety. Consequently, factors affecting innovative management should be determined. **Objectives:** This descriptive study aimed to examine outcomes and analyze factors influencing the innovative management of in-patient departments. **Methods:** Head nurse who have at least three-year experience in the management of in-patient departments in community hospitals were selected using stratified sampling and simple random sampling techniques. Data were conducted using questionnaires regarding the topics of knowledge creation and innovative management performance with reliability at 0.87 and 0.91 respectively, as well as personal information. The data were analyzed using percentage, mean, standard deviation, and Pearson correlation coefficient as well as stepwise multiple regression analysis. **Results:** The study revealed that the mean of knowledge creation, overall of innovative management performance, the compositions of knowledge creation as well as innovative management's performance of in-patient departments were high. Factors including knowledge creation, experiencing the training of knowledge management and experiencing research related to innovation were statistically significant with outcomes of innovative management (p-value < 0.01). In addition, these factors could collaboratively predict 48.7 percent of innovative management performance. **Conclusion:** Nursing administrators should impose policy and create action plans to enhance the skills of head nurses of In-Patient Departments such as creating new knowledge in wards and encouraging head nurses to conduct innovative research and training regarding knowledge management. Consequently, these will result in effective and efficient innovative management of In-Patient Departments.

Keywords; Innovative management performance, knowledge creation, In-patient departments, Community hospital

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Introduction

Rapid changes in advanced sciences and technologies have created societies with knowledge and innovation (Drucker, 1993). Currently, the Thai government has realized the importance of this issue and has announced a policy focusing on producing innovative products, encouraging people to develop innovative services, developing organization by using technologies, creativity, and innovation (Chanocha, 2015) as well as implementing this policy to all government agencies.

Bureau of Nursing has imposed this policy by encouraging hospitals to create and develop a variety of innovation since this will enhance quality-nursing services in their organizations (Bureau of Nursing, 2012). In addition, community hospitals have implemented the policy regarding creativity of innovation because this can assist hospitals to develop quality nursing services more effectively (Jirapaet, 2012), improve nursing outcomes (Oecon, 2006) as well as ensure clients safer (Klangtamnian, 2012). Hence, innovation is a key factor, which results in the development of nursing quality services in nursing organizations (McGregor, 2015). However, an assessment of innovative management among in- patient departments revealed that hospitals could not implement innovation in every unit and it could partly use in nursing services (Nursing organization, 2015).

Factor influencing a success of innovative management performance among in-patient departments consisted of knowledge creation, which could create relevant information and knowledge. Ultimately, these led to potentially enhance practical innovation and were useful in organizations (Nonaka, & Takeuchi, 1995; Berraies, et al, 2014; Tidd & Bessant, 2014). As a reviewed literature regarding personal factors (age), a study reported that younger people had a more creative idea in creating innovation (Amabile, 2013). Due to experiencing research related to innovation, this age is the crucial factor influencing a success innovative management performance in organizations. Integrating between research methodology and make of innovation could solve problems resulted from routine work, developed outcomes of innovation more valuable and useful for organizations (Jirapaet, 2010; Hughes, 2006). In addition, experiencing a training of innovation and knowledge management helped officers to be more knowledgeable in this area. This assisted organizations in achieving their ultimate goals. Furthermore, a result of training programs resulted in exploring new knowledge faster and potentially enhanced the skills of innovative creation (Smith et al, 2008).

Currently, knowledge about factors influencing innovative management performance among nurses is still limited. Consequently, the researcher would like to examine factors that affect innovative management performance of in- patient departments since this will enhance the skills of knowledge management and can be applied in creating an innovation of in-patient departments in the future.

Objectives

1. To examine knowledge creation and innovation management performance of in-patient departments.
2. To analyze the factors regarding establishing of knowledge, age, experiences of innovative research, experiences of trainings of innovation as well as knowledge management that affect innovation management performance of in-patient departments.

Conceptual Framework

The conceptual framework was based on the concept of innovative management (Tidd & Bessant, 2014). This resulted from resources management and knowledge creation supported innovation management performance. This framework concerned innovative management performance that could be used in nursing practice which three component included input to the innovation process, organizations with focused on innovation can be described as requiring necessary and sufficient input resources, process as an organization structure consistent with innovation creation, flexible structures, distributed power, teamwork

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supporting innovation such as allowing personnel to express opinions and participate in decision- making leading to learning and innovation creation and output that assess capabilities or success of organizations in creating innovations. The four knowledge creation were applied consisting of crucial and included socialization, externalization, combination, and internalization (Nonaka & Takeuchi, 1995) since knowledge cycles these were believed to be a very factor that could affect innovative management performance of in- patient departments support as shown in figure 1.

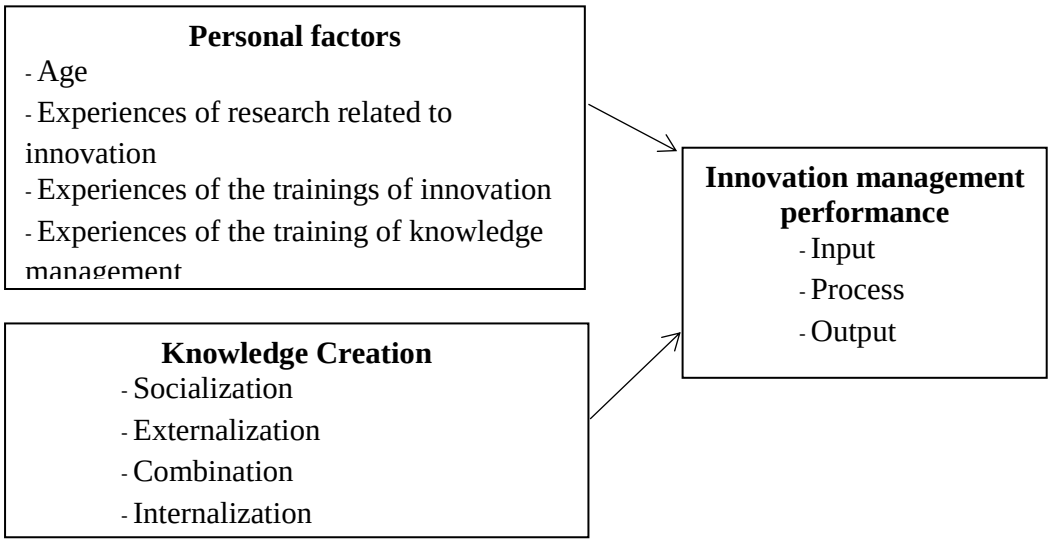


Figure 1 Conceptual Framework

Material and Method

The study was prediction research.

Population and Sample

Populations were 454 head nurses in 88 community hospitals in health region 12. The samples included three hundred head nurses who have at least three- year experience in the management of in- patient departments in community hospitals. This study used stratified sampling and simple random sampling without replacement technique to select hospital and nurse samples. The study was conducted from September to November 2016.

Research instrument

The research tool for data collection was a questionnaire composed of 3 parts;

Part 1 personal data: the question were developed by the researcher. This consisted of age, experiences of conducting innovative research as well as experiences of training regarding innovation and knowledge management.

Part 2 knowledge creation: the researcher applied the tool from of Schulz and Huagel(2008) with a content validity at 0.84 and used cross- cultural translation. The questions consisted of the perception of nursing directors regarding behavior of nursing staffs in creating new knowledge. The four- knowledge transformations were socialization, externalization, combination, and internalization. Sixteen questions were applied using Rating Scale including strongly agree (5), quite agree (4), neutral agree (3), less agree (2), and least agree (1) . Due to reliability, the researcher tried out the questionnaires with 30 head nurses who have at least three years' experience in the management of in- patient departments in community hospitals and the Cronbach's alpha coefficient was at 0.87.

Part 3 innovative management performance: the questionnaire was created by the researcher based on the theory of an innovative management by Tidd and Bessant (2014) . Questions aimed to examine of the perception of head nurses of in- patient departments. In order to measure this part, the

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researcher used three components including input, process and output. Twenty- three questions were applied using the Likert Scale regarding strongly agree (5) agree (4) neutral (3) disagree (2) and strongly disagree (1). In term of validity, the questionnaire of this part was approved by nine experts and the content validity index was calculated at 0.84. To enhance reliability, the researcher tried out the questionnaires with 30 head nurses who have at least three-year experience in the management of nurse units in community hospitals and the Cronbach's alpha coefficient was at 0.91. Defining the criteria, interpreting the mean of knowledge creation and innovative management performance of in- patient departments were classified using the scores as the highest mean (4.51 – 5.00), the high mean (3.51 – 4.50), the moderate mean (2.51 – 3.50), the less mean (1.51 – 2.50) and the lest mean (1.00 – 1.50) (Sristhitnarakul, 2012).

Data Collection

The researchers made a letter of permission in collecting data to the directors of community hospitals and requested the ethical approval of human research from community hospitals. Before the data collection, there was a process to clarify the purposes of this study and details of methodology with head nurses. After this process, the researcher sent out the questionnaires to either head nurses or research coordinators and asked them for their participation. The information obtained in this study was kept confidentially and finally, 294 complete questionnaires were collected, presenting 98 percent of the sample.

Data Analysis

This study used computer programs to analyze the data as the followings.

1. Used descriptive statistics regarding frequency and percentage to analyze the personal information.

2. Applied mean and standard deviation in analyzing the scales of the opinion, knowledge creation as well as innovative management performance.

3. Analyzed the associations among personal factors, knowledge creation and innovative management performance using the Pearson's Correlation Coefficient.

4. Analyzed the prediction of personal information, knowledge creation affecting innovative management performance in in-patient departments using Multiple Regression Analysis.

Results

Part 1 Personal information of two hundred nighties four participants. The results showed that approximately sixty percent of participants were 41 – 50 years old. The average of aged was 48.66 years. More than half of participants (58.8 percent) had experienced research related to innovation. Of those 30.6 percent and 22.1 percent once and twice, respectively. Around sixty-two percent of participants had experienced the training of innovation 40.5 present of those attended a training for one time and 12.9 percent for two times two times. Approximately 80 percent of participants had experienced the training of knowledge management. Those people participated in the training one time (24.5 percent) and followed by two (19.4 percent) and five times (13.9 percent) respectively.

Part 2 Mean ($\overline{X}$), standard deviation (SD) of knowledge creation as well as innovative management performance of in-patient departments among community hospitals were presented in the table 1.

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Table 1 Mean ($\overline{X}$), standard deviation (SD) and interpretation of knowledge creation and innovative management performance.

Variables	$\overline{x}$	S.D	Level
Knowledge creation	3.81	0.39	High
Socialization	3.88	0.42	High
Externalization	3.83	0.49	High
Combination	3.81	0.41	High
Internalization	3.73	0.47	High
Innovative management performance	3.87	0.41	High
At the period of process	4.14	0.47	High
At the period of output	3.78	0.54	High
At the period of input	3.70	0.47	High

Part 3 Analytical results of the association among variables

The table 2 Analytical results of the association among variables including age, experiencing research related to innovation, experiencing the training of innovation, experiencing the training of knowledge management, knowledge creation as well as innovative management performance.

Table 2 The results of the associations among variables including age, experiencing research related to innovation, experiencing the training of innovation, etc.

Variables	X_1	X_2	X_3	X_4	X_5
Age (X_1)	1.000				
Experiencing research related to innovation (X_2)	-.106*	1.000			
Experiencing the training of innovation (X_3)	-.144**	.172**	1.000		
Experiencing the training of knowledge management (X_4)	.031	.275**	.440**	1.000	
Knowledge creation (X_5)	-.227**	.446**	.265**	.374**	1.000
Outcomes of innovative management (Y)	-.195**	.421**	.233**	.414**	.665**

*p< 0.05, **p< 0.01

The table 2 revealed that knowledge creation, experiencing research related to innovation, experiencing the training of knowledge management as well as experiencing the training of innovation were found to be positively correlated with innovation management performance at r= 0.665, p-value< 0.01; r= 0.421, p-value< 0.01; r= 0.414, p-value< 0. 01; r= . 233, p- value< 0. 01 respectively. However, age was found to be negatively correlated with innovative management performance at r= -0.195, p value< 0.01, while, all variables were found to be multicollinearity.

Part 4 Analytical results of the prediction regarding personal information and

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knowledge management, resulting in outcomes of innovative management.

Table 3 Analytical results of the prediction regarding personal information and knowledge management, resulting in outcomes of innovative management of in- patient departments (n=294)

Table 3 Analytical results of the prediction regarding personal information and knowledge management, resulting in outcomes of innovative management of in-patient departments (n=294)

Variables	b	SE b	β	t	p-value
Constant	1.604	0.187		8.594	<0.001
Knowledge creation (X_5)	0.567	0.052	0.540	10.997	<0.001
Experiencing the training of knowledge management (X_4)	0.067	0.007	0.175	3.837	<0.001
Experiencing research related to innovation (X_2)	0.050	0.018	0.132	2.784	<0.001

R= 0.698, R^2= 0.487, F= 91.877**, Durbin- Watson= 1.784

The table 3 showed that knowledge creation, experiencing research related to innovation and experiencing the training of knowledge management predicted innovative management performance at 48.7 percent. In addition to the prediction, knowledge creation predicted innovative management performance most using a formulation as the following.

$$Y = 0.540 (X_5) + 0.175 (X_4) + 0.132 (X_2) + e$$

Discussion

The study revealed that the factors influencing innovative management performance included knowledge creation, experiencing the training of knowledge management and experiencing research related to innovation of head nurses and these could be explained as the followings.

Knowledge creation

This study found that knowledge creation has the most impact on the innovation management of in- patient departments. This implies that knowledge creation is a significant factor in creating innovation. Setting a goal to create new knowledge by head nurses and apply this strategy with a routine work leads to a success of innovation management. Sharing knowledge from experiences among nurses (Tacit Knowledge) and developing to be explicit knowledge can create new knowledge and apply to establish innovation of nursing practice. This is consistent with a study by Schulze and Hoegl, [16] reviewing the prediction of innovation management performance. Knowledge creation predicted innovation management performance (R^2=0.60). In addition, a study conducted by Berraies, Chaher and Yahia (2014) revealed that knowledge creation influenced innovation management performance (β = 0.79). This is also consistent with a knowledge creation theory by Nonaka and Takeuchi (1995). New knowledge resulted from knowledge creation could potentially enhance innovation and application in organizations.

Experiencing the training of knowledge management

As a result, experiencing the training of knowledge management has influenced innovation management performance. This implies that head nurses with knowledge management skills are knowledgeable. This results in creating new knowledge, disseminating knowledge to nursing staffs as well as creating innovation of in- patient departments regularly. This is also consistent with a study conducted by Smith, Busi, Ball, and Meer (2008). Participants with experience in knowledge management influenced innovative

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management with β = 0.195. In addition, a study by Li, Zhou, and Liu (2006) supported that leaderships who experienced a training related to knowledge management was found to be positively associated with a innovation management performance (r= 0. 41, p- value< 0.01).

Experiencing research related to innovation.

The study showed that experiencing the training of innovative management is one of the crucial factors influencing innovative management. This affirms that head nurses with three years' experience in innovation management could apply research skills to solve the problems resulted from their routine work(Jirapaet, 2010) [4]. Research related to innovation is a new concept test using the empirical findings and it can be usable (Hughes, 2006). Hence, head nurses with experiences are more understandable and manageable in this field and this result in effective innovation which can be used in health care units. The study is consistent with a study by Prajogo, and Ahmed (2006) which found that the leaders with experience in research was found to be positively associated with the development of innovation (r = .534 and p-value < 0.01).

Recommendations

1. In order to enhance knowledge about innovation, advance nursing science and management for head nurses, it is crucial to impose a relevant knowledge management and innovation management policy and action plan which should be applied with in- patient departments since these can create innovation management and result in an application among patients.

2. Human resource development plan regarding knowledge management and research skill are needed for head nurses because this can be applied to develop effective and efficient innovation management performance.

3. Head nurse should be taken training about creation of innovation and knowledge management with other organization about innovation management.

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References

Amabile, T. M. Componential theory of creativity; Retrieved February 5, 2016, from http://www.hbs.edu/faculty/Publication.pdf;2013.

Bureau of Nursing, Ministry of Public Health. National nursing service strategy. Nonthaburi: Veterans Affairs Organization; 2012. (in Thai).

Drucker, P.F. Post-capitalist Society. New York: Harper Business; 1993.

Chanocha, P. Policy statement of the Council of Ministers. Bangkok: Cabinet and Royal Gazette Publishing office; 2015. (in Thai).

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E& ham Ronald L. Multivariate Data analysis. 7th ed. New Jersy: Prentice Hall; 2010.

Hughes, F. Nurses at the Forefront of Innovation. International Council of Nurses, Int Nurs Rev J. 2006; 53: 94-101.

Jirapaet, V. Guidelines for the development and design of nursing innovations. Proceeding of the National Conference on nursing innovation for sustainable quality development; 2010 May 15- 16; Bangkok: SD Avenue Hotel, 2010. (in Thai).

Klangtamniam, K. Nursing Service Innovations. J. of Phrapokklao Nursing College, Chanthaburi. 2012; 22 (2): 71-9. (in Thai).

Li, Y., Zhou, Y., & Liu. The Relationship between HRM, Technology innovation and performance in China. International Journal of Manpower. 2006; 27(7): 679-96.

McGregor, J. The world's most innovative companies; Retrieved December 10, 2015, from http://www.bloomberg.com/bw/stories/2007-05-04.

Nonaka, I. & Takeuchi, H. The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation? New York: Oxford University Press; 1995.

Berraies, S., Chaher, M., & Yahia, K.B. Knowledge Management Enablers, Knowledge Creation Process and Innovation Performance: An Empirical Study in Tunisian Information and Communication Technologies Sector. Business Management and Strategy. 2014; 5(1): 1-26.

Nursing Organization. Report of Nursing Indicators. Community Hospitals, district 6 (Unpublished); 2015. (in Thai)

Oecon, B. W. A. Employee innovation behaviour in health care: The influence from management and colleagues. Int Nurs Rev. 2006; 53: 231-7.

Prajogo, D.I., & Ahmed, P.K. Relationships between innovation stimulus, innovation capacity, and innovation performance. R & D Management. 2006; 36(5): 499- 515.

Smith, M., Busi, M., Ball, P., & Meer, R. Factors Influencing an Organizations ability to Manage Innovation: a Structured Literature Review and Conceptual Model. International Journal of Innovation Management. 2008; 12: 655-76.

Schulze, A. & Hoegl, M. Organizational knowledge creation and the generation of new Product ideas: A behavioral approach. Res Policy. 2008; 37: 1742–50.

Sristhitnarakul, B. Development and Quality Assurance of Research Instruments: Psychological Measurement Qualities. Bangkok: Chulalongkorn University Press; 2012 (in Thai).

Tidd, J and Bessant, J. Management innovation. (5th ed). West Sussex: Wiley; 2014.