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ORIGINAL ARTICLE

Effect of top-level nursing management team characteristics and strategic implementation on nursing organization performance at community hospitals under the ministry of public health

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ABSTRACT

This predictive research was to analyze the effects of top-level nursing management team (TNMT) characteristics and strategic implementation on nursing organization performance. The conceptual framework of this study was synthesized from Upper Echelon Theory by Hambrick & Mason (2007), the strategic implementation concept by Pearce & Robinson (2003) and the concept of organizational performance by the Baldrige Excellence Framework for Healthcare (2013). The samples were composed of 326 team members of TNMT in community hospitals under the Ministry of Public Health, Thailand. The research instruments comprised of 4 questionnaires including: 1) demographic data, 2) TNMT characteristics, 3) strategic implementation, and 4) nursing organization performance. The content validity indices of the questionnaires were 0.93, 1.00, and 0.91, respectively. Analysis of the structural validity of each questionnaire showed that each model was congruent with the empirical data (CMIN/DF = 1.51, 1.37, 1.07, RMR = .03, .02, .02, GFI =.97, .96, .94). The reliability of each questionnaire was 0.86, 0.89, and 0.93, respectively. Descriptive and inferential statistical methods were used for data analysis, which included frequency, mean, standard deviation, independent t- test and multiple regression analysis. The results revealed that TNMT characteristics, strategic implementation and nursing organization performance were at a high level ($\overline{X}$= 3.80, SD= 0.46, $\overline{X}$= 3.73, SD=0.48 and $\overline{X}$ = 3.64, SD= 0.44 respectively). TNMT characteristics and strategic implementation could predict nursing organization performance at 52.9% (R^2 = .529). TNMT characteristics affected nursing organization performance with β =0.503 (p-value< .01), while strategic implementation affected nursing organization performance with β = 0.313 (p-value < .01). Therefore, the TNMT of nursing organizations should develop suitable team characteristics concerning demographic, psychographic and behavioral characteristics as well as strategy implementation, including operationalization and institutionalization strategies for achievement of nursing organizational performance of community hospitals.

Key words: top management team, top nursing management team, strategic implementation, nursing organization performance

INTRODUCTION

Excellent health organizations tend to assess six dimensional performances, which include healthcare outcomes, customer-focused outcomes, financial and market outcomes, workforce-focused outcomes, process effectiveness outcomes and leadership outcomes.[1] In the nursing organizations of community hospitals, performance still has problems concerning customer-focused outcomes, nursing personnel-focus outcomes, nursing care outcomes, leadership-outcomes and process effectiveness outcomes. First of all, the problems concerning customer-focused outcomes such as service user complaints, patient dissatisfaction about nursing services; nursing personnel-focus outcomes such as low job satisfaction; nursing care outcomes such as pressure ulcers, falls, medication errors and nosocomial infections[2]; leadership-focused outcomes such as unachieved strategic implementation and unachieved indicators according to a strategic plan; lastly, process effectiveness outcomes such as minimal innovation and research, unqualified productivity and incidences of needle sticks/sharp injuries/blood as well as exposure to body fluids.[3]

With regard to the aforementioned data, it is evident that the organizational performance outcomes in community hospitals still have problems that need to be solved.[2,3] These organizational performance outcomes reflect the administrative performance of the top-level nursing management teams in community hospitals required to achieve the goals. In community hospital organizations, top-level nursing management teams are responsible for orders to position and specify roles and duties in writing. There are two forms of management teams as follows: teams where all members are leaders and teams including a leader and followers. These teams organize monthly meetings, communicate information, and consider individual achievements.[3]

Top management teams must direct their organizations and take responsibility for organizational performance.[4, 6] The top management team determines key strategies and mechanisms for efficient organizational administration.[5,] According to Upper Echelon Theory, the characteristics of the top management team are directly related to organizational performance.[6] Studies of the characteristics affecting organizational performance should explore all potential characteristics including demographic characteristics,[7, 8, 9] behavioral characteristics[10,11] and psychographic characteristics,[12, 13] whereas previous researches studied only each characteristics affecting organizational performance.[14]

Apart from top management characteristics, strategic implementation is another factor affecting organizational performance.[15, 17] However, organizations succeed due to strategic implementation by only 10%.[18] Success in implementing strategic plans requires the following two operations: 1) operationalization of the strategy to alter long-term objectives to short-term objectives, specifically on the scope of performance to employees, and design a reward system; 2) institutionalization of strategy means to restructure the organization, to improve the working process, to change the leadership in accordance with strategy, and to modify organizational culture to match strategy.[19, 20]

According to previous research, the characteristics of top management teams with diversity of the characteristics have been explored in the contexts of business[8,9,12,13] and industry[10, 11, 14] but no studies have been found in the context of

nursing organizations. At the same time, strategic implementation in many studies, assesses operationalization and institutionalization from various contexts[15,16,17,18,23] including nursing organizations, but nursing organizations at tertiary level hospitals.[26] To date, the community hospital context has not been selected. For the abovementioned reasons, this study aimed to study 1) the characteristics of top-level nursing management teams (TNMT), strategic implementation and nursing organization performance at community hospitals and 2) the influences and predictability of TNMT characteristics and strategic implementation affecting nursing organization performance at community hospitals.

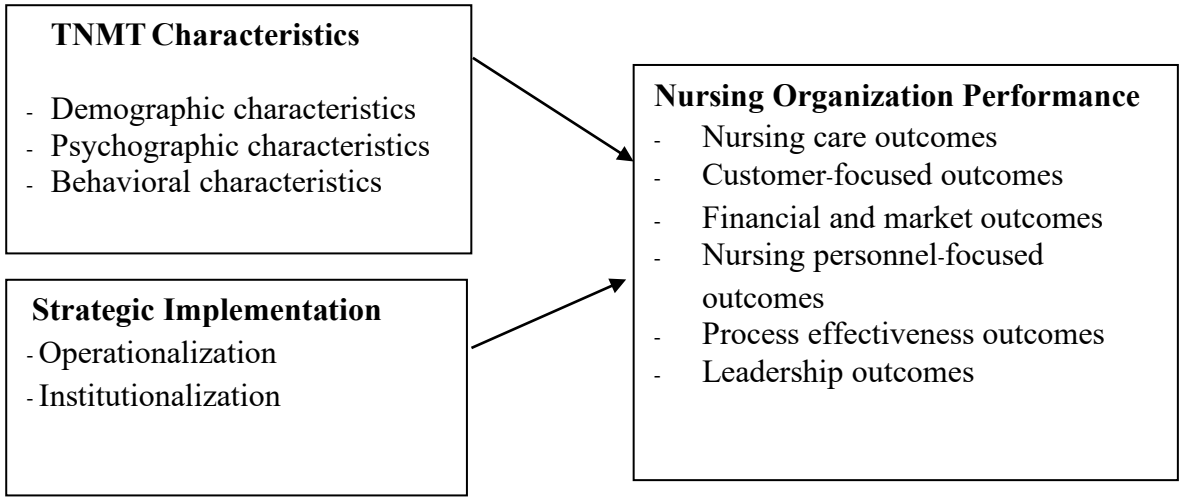

Figure 1: Conceptual Framework

RESEARCH METHODS

This quantitative research followed a predictive study design.

Population and Sample

The population in this study was 2,158 TNMT members from first-level hospitals (F1) and middle-level community hospitals (M2) under the Ministry of Public Health.

Sample

The formula of Krejcie & Morgan [20] was applied to calculate the number of samples was 362. The cluster sampling was randomly divided according to the following regions: North, Northeast, Eastern, Southern and Central regions. After that, simple sampling was selected in one team at a time by all team members to complete the calculated number of samples.

Research Instruments

The researcher developed the concept of TNMT characteristics from Upper Echelon Theory[6] and concept nursing organizational performance from Baldrige Excellence Framework for Healthcare[1] according to the instrument development steps of Burns & Grove.[22] The researcher adapted the strategic implementation Kobuthi's questionnaire [23] by back-translation.

The demographic data questionnaire for TNMT members collected data on age, education attainment, position of TNMT, received administrative training and administrative work experience. The

nursing organization performance questionnaire contained five questions on leadership outcomes, seven questions on nursing personnel-focused outcomes, four questions on customer-focus outcomes, three questions on process effectiveness outcomes, four questions on financial and marketing outcomes and three questions on nursing care outcomes. The questionnaire of the TNMT characteristics contained five questions on psychographic characteristics, three questions on behavioral characteristics and three questions on demographic characteristics. The strategic implementation questionnaire contained four questions on operationalization and six questions on institutionalization.

The scale design was a 5-level Likert scale rating from most strongly agree (5) to strongly agree (4), moderately agree (3), disagree (2) and strongly disagree (1). The criteria and interpretation of the mean scores of the study were categorized into 5 levels based on Best and Kahn[30] as follows: 4.50 - 5.00 means the highest, 3.50 - 4.49 means high, 2.50 - 3.49 means moderate, 1.50 - 2.49 means low, 1.00 - 1.49 means the lowest.

Quality of Research Instruments

With respect to the research instruments, TNMT characteristics, strategic implementation and nursing organization performance questionnaires were evaluated for content validity by the experts. The overall content validity index values (CVI) for the entire research were 0.91, 0.93, and 1.00, respectively. The construct validity of each questionnaire was analyzed by exploratory factor analysis ь (EFA) and confirmatory factor analysis (CFA).

The nursing organization performance questionnaire contained 26 indicators on the following six components: leadership outcomes, nursing personnel-focused outcomes, customer-focus outcomes, process effectiveness outcomes, financial and marketing outcomes, and nursing care outcomes with a total variance of 60.33%. The model was construct valid and well-fitted to the empirical data (P-value = .22, CMIN/DF = 1.07, GFI=.94, AGFI = .92, CFI = .99, RMR = .02, RMSEA = .01). All factor loading values for the 6 components were .89, .90, .86, 76, .83, and .76, respectively.

The questionnaire of the TNMT characteristics contained 11 indicators and 3 components, namely psychographic characteristics, behavioral characteristics, and demographic characteristics with a total variance of 65.51%. The model was construct valid and well-fitted to the empirical data (P-value = .03, CMIN/DF = 1.51, GFI=.97, AGFI = .95, CFI = .99, RMR = .03, RMSEA = .04). The factor loading values for the 3 factors were .90, .73, and .56, respectively.

The strategic implementation questionnaire contained 10 indicators and 2 components, namely operationalization and institutionalization. The model was construct valid and well-fitted to the empirical data (P-value = .099, CMIN/DF = 1.37, GFI=.98, AGFI = .96, CFI = .99, RMR = .02, RMSEA = .03). The factor loading values of the two factors were .81 and .78, respectively.

In the test of reliability for TNMT characteristics, strategic implementation and nursing organization performance questionnaires resulted in Coefficient alpha values of .93, .86, and .84 respectively.

Ethical Considerations

Ethical considerations were taken from the ethical committee of Christian University of Thailand (Registration No. N.25/2561). The protected samples were

obtained as personal information and ethical concerns, which included informed-consent and maintaining confidentiality. The samples had the right to cancel participation in the study at any time without any impact.

Data Collection

The researcher requested Christian University to forward the request of approval from hospital directors to collect data with certification from ethics review for research involving humans. After ethics certification, the researcher met with the head nurse of each hospital to reviewing study objectives and data collection procedures with sending questionnaires by mail. The research spent three months collecting data in August– October 2019.The researcher sent 362 questionnaires and received 326 questionnaires back (90.05%).

Data Analyses

The results were analyzed by using a statistical analysis and component analysis program. The statistics used for data analysis were as follows. Descriptive statistical analysis consisted of mean, standard deviation and percentage for analysis levels of TNMT characteristics, strategic implementation and nursing organization performance. Inferential statistical analysis consisted of EFA and CFA for construct validity, independent sample t- test for comparison of executive teams and executive-professional nurse teams with multiple regression analysis (MRA) for the influence analysis of TNMT characteristics and strategic implement-tation affecting the nursing organization performance of community hospitals.

RESULTS

Table1 Number and percentage characteristics (n=326).

Characteristics for TNMT Members	Number	Percentage
Team composition (n= 30 TNMT)		
Executive Team	19 (teams)	66.33
Executive and registered nurse Team	11 (teams)	36.67
Age		
Generation Y (22-39 years old)	19	5.83
Generation X (40 – 54 years old)	197	60.43
Generation B (55 - 60 years old)	110	33.74
($\overline{X}$ = 50.44 years old, SD =6.40, , Max=60, Min 27, Mode =55)		
Education		
Bachelor's Degree	234	71.78
Master's Degree	92	28.22
- Nursing Administration	34	10.40
- Other Administration	29	8.90
- Nursing	29	8.90
Positions of Top-level Nursing Management Team		
Chief Nurse Officer	23	7.06
Deputy Chief Nurse Officer	12	3.68

Characteristics for TNMT Members	Number	Percentage
Head nurse	264	80.98
Registered nurse	27	8.28
Received Administration Training		
Yes	179	54.91
No	147	45.09
Administrative Work Experience		
< 5 Years	110	33.74
5 – 10 Years	100	30.68
> 10 Years	116	35.58
($\overline{X}$ = 9.55 year, SD = 7.96 , Max=38, Min =1)		
Received Strategic Training		
Yes	106	32.52
No	220	67.48

Top- level management team types included both executive teams (66.33%) and executive and registered nurse teams (36.67%). Most of the samples belonged to Generation X (40 – 54 years old) at 60.43%. The percentage of those who had graduated with a master's degree in administration was 19.30%, while 54.91% and 32.53% had been trained in administration and strategy, respectively. The average administrative working experience was 9.55 years, and 72.00 % had worked for more than 5 years.

Table 2 Descriptive statistics of TNMT characteristics, strategic implementation, and nursing organization performance (n=326).

Variable	min	max	$\overline{X}$	SD	Level
TNMT Characteristics	**2.27**	**4.82**	**3.80**	**0.46**	**High**
- Psychographic characteristics	2.60	5.00	3.88	0.50	High
- Behavioral characteristics	1.67	5.00	3.81	0.59	High
- Demographic characteristics	1.33	5.00	3.50	0.67	High
Strategic Implementation	**2.20**	**4.90**	**3.73**	**0.48**	**High**
- Operationalization	2.25	5.00	3.87	0.54	High
- Institutionalization	1.83	5.00	3.64	0.54	High
Nursing Organization Performance	**2.35**	**4.85**	**3.64**	**0.44**	**High**
- Leadership outcomes	2.60	5.00	3.84	0.48	High
- Process effectiveness outcomes	2.00	5.00	3.83	0.59	High
- Nursing care outcomes	2.33	5.00	3.71	0.57	High
- Customer-focused outcomes	1.75	5.00	3.65	0.53	High
- Financial and market outcomes	1.75	5.00	3.60	0.61	High
- Nursing personnel-focused outcomes	1.71	5.00	3.38	0.48	Moderate

Table 2 shows the mean score of TNMT characteristics were at a high level ($\overline{X}$ = 3.80, SD = 0.46). When classified by components, it was found that psychographic characteristics had the highest mean score ($\overline{X}$ = 3.88, SD = 0.50).

The mean score of strategic implementation average scores were at a high level ($\overline{X}$ = 3.73, SD = 0.48). When classified individually, it was found that all aspects had high scores as follows: Operationalization ($\overline{X}$= 3.87, SD = 0.54) and institutionalization ($\overline{X}$ = 3.64, SD = 0.54). The mean score of nursing organization performance was at a high level ($\overline{X}$ = 3.64, SD = 0.44). When classified by each side, the results of the leadership outcomes had the highest mean scores ($\overline{X}$ = 3.84, SD =0.48), while the results of focusing on nursing personnel-focused outcomes ($\overline{X}$ = 3.38, SD =0.48) had the lowest average score.

Table 3: Comparison of executive and registered nurse team and executive team of TNMT characteristics, strategic implementation and nursing organization performance (n=326).

Variable	**Executive and registered nurse Team (n=134)**		**Executive Team (n=192)**		**t**	p
	$\overline{X}$	SD	$\overline{X}$	SD		
TNMT characteristics	**3.87**	**0.44**	**3.75**	**0.47**	**2.39***	.02
- Psychographic characteristics	3.97	0.45	3.82	0.51	2.78*	.01
- Behavioral characteristics	3.87	0.56	3.78	0.60	1.41	.16
- Demographic characteristics	3.71	0.64	3.61	0.68	1.38	.17
Strategic Implementation	**3.76**	**0.45**	**3.71**	**0.50**	**0.76**	.45
- Operationalization	3.90	0.49	3.84	0.50	0.97	.33
- Institutionalization	3.66	0.51	3.63	0.55	0.49	.63
Nursing Organization Performance	**3.70**	**0.42**	**3.59**	**0.45**	**2.21***	.03
- Leadership outcomes	3.89	0.48	3.81	0.48	1.43	.15
- Process effectiveness outcomes	3.97	0.55	3.74	0.59	3.62**	.00
- Nursing care outcomes	3.79	0.55	3.65	0.57	2.19*	.03
- Customer-focused outcomes	3.70	0.51	3.61	0.54	1.58	.92
- Financial and market outcomes	3.64	0.56	3.57	0.64	0.96	.34
- Nursing personnel-focused outcomes	3.44	0.55	3.35	0.59	1.47	.14

*$p<.05$, **$p<.01$

Table 3 shows the statistically significant differences ($p<.05$) of executive and registered nurse team and executive team of TNMT characteristics ($p=.012$) as well as nursing organization performance ($p=.03$).The aspect of TNMT characteristics has statistically significant difference ($p<.05$) for only psychographic characteristics between the two team types. Another aspect of nursing organization

performance had statistically significant difference (p<.05) in process effectiveness outcomes and nursing care outcomes between the two teams.

The results of tests for the influence of TMT characteristics on performance as follows that TMT characteristics explain 46.20% (R^2 = .462) of the variation in organizational performance. The relationship was statistically significant (p-value < 0.01, Std. Beta = .68). The beta coefficient (β=.68) shows that 1% change in TMT characteristics leads to .68 percent change in organizational performance.

While result of test influence of strategic implementation on performance as follows that strategic implementation explain 35.60% (R^2 = .356) of the variation in organizational performance. The relationship was statistically significant (p-value < 0.01, Std. Beta = .59). The beta coefficient (β=.59) shows that 1% change in Strategic implementation leads to .59 percent change in organizational performance.

Table 4: Results of influence for TNMT characteristics and strategic implementation with significant influence on nursing organizational performance.

Model	Unstandardized Coefficients		standardized Coefficients	R	R^2	Std. Error of the Estimate	t
	b	S.E.	Beta				
Constant	19.467	3.979		.727	.529	7.850	4.89**
TNMT	1.129	.104	.503				10.87**
SI	.747	.110	.313				6.77**

***p<.01*

To consider the Regression Coefficient of predictability, TNMT characteristics and strategic implementation could predict nursing organization performance at 52.9 (R^2 = .529) with statistical significance < .01 as shown in Table 4

The predictive equation is as follows: The Predictive Equation in Standardized score = Z (NOP) = .503 (TNMTC) + .313(SI). Changing 1 unit of TNMT characteristics will increase the nursing organizational performance at .503 units, while strategic implementation remains stable. Furthermore, changing 1 unit of strategic implementation will increase nursing organization performance at .313 units, while TNMT characteristics remain stable.

The predictive equation in Unstandardized score was NOP =.748 +.478 (TMTC) +.278(SI). According to the equation, if TNMT characteristics and strategic implementation remain at 0, nursing organization performance will have a score of .748. If the score for TNMT characteristics increases by 1, the score for nursing organization performance will increase by .478 points, while strategic implementation remains stable. If the score for strategic implementation increases by 1, the score for nursing organization performance will increase by .278 points, while TLNMT characteristics remain stable.

DISCUSSION

The TNMT characteristics from this study correspond with Upper Echelon Theory, which asserts that top-level management team characteristics come from the cognition of individuals obtained from working experience, education, and duration in executive positions. Such aspects affect organizational performance.[6] Regarding the classification of minor characteristics, the psychological characteristics consist of openness to application of the information for solving management, communication with focus on goals and risk evaluation in administration as well as goal-setting to build job motivation and fast decisions by management.

At the same time, the behavioral characteristics demonstrate the search for choices and innovation in organization management and building networks inside and outside the organization. Searching for new opportunities and choices in the management yield the highest score since the management team must be supervised and monitored for performance by the hospitals' boards and outsource audits. In all, 30 percent of the samples rated the behavior in searching for innovation at a moderate level. With regard to Upper Echelon Theory, older executives might lose their ability to discover new things or learn new behavior[24] similar to the business sector, which is required to build innovation for competitive advantage. According to the study of Papadakis & Barwise[25] focusing on the behavioral characteristics of the top-level management team in the food, weaving, and chemical industries, the characteristics include risk-taking, level of determination and the utilization of innovation.[8, 9]

The demographic characteristics consisting of experience prioritization, qualification setting and searching for opportunity enable people to become members. According to Upper Echelon Theory, experience is the collection of knowledge and management skills needed in organization administration. In this study, it was found that 64.00% of the sample group had more than 5 years of work experience. This study is similar to the study of Tulung &Ramdani, [8] which focused on top management team characteristics by considering gender, age, education, educational background and work background. Similarly, Francis[7] studied the top management team characteristics of companies in Kenya by using individual characteristics such as working background, education, age, gender and time in position.

The strategic implementation of this study correlates with the strategic implementation concept of Pearce & Robinson[19] consisting of operationalization and institutionalization. Similar to Kobuti,[23] who studied the companies listed on the Nairobi Securities Exchange, the results showed that the operationalization scores were higher than the institutionalization score. However, this is likely because a business organization has to participate in competition for survival in the business world, which is unlike the nursing organization context.

The nursing organizational performance of the study is consistent with the health organization performance concept of Baldrige's excellence framework for health care consisting of six components including leadership outcomes, process effectiveness outcomes, health care outcomes, customer-focus outcomes, financial and marketing outcomes and workforce-focus outcomes. The aspect that received the highest opinion was leadership, while the least observed was workforce focused. Similarly, Yonchoho, Chintanadilok and Luangamomlert[26] found in nursing organization performance at tertiary level hospitals under the Ministry of Public Health that leadership had the highest score, while workforce focused had the lowest.

The TNMT characteristics could explain the organization's performance at 46.20%. Therefore, Hypothesis 1 is accepted in terms of the results of this study following Upper Echelon Theory wherein it is believed that the characteristics of the top management team relate to organization performance because the members have roles and duties to plan, direct and take responsibility for operations.[6] On the subject of demographic characteristics in administrative experience, searching for new innovation or options to find the solution, and psychological characteristics in openness, communication to the target, risk assessment before making decisions and having the motivation to set high goals, affect organization performance, the results were similar to those of other studies[14] such as the study of foreign private companies in Kenya [12] and the study of independent state organizations.[10, 11]

Strategic implementation influences nursing organization performance (R^2=.356, p <.001). Hypothesis 2 is, therefore, accepted in terms of the results of this study in line with Baldrige's excellence framework for health care.[1] These aspects set the scope of performance management to achieve the mission of nursing organizations and lead to organizational excellence[27]. Strategic implementation factors that affect organization performance are institutionalization and operationalization, both of which lead to building the organizational culture in conformance with strategies and strategic leadership to give the right people the right job, practice appropriate organizational structure, always revise strategy and properly manage reward systems.[19, 20]

The results of this study share similarity with the work of Kobuthi, [23] which studied the companies listed on the Nairobi Securities Exchange of Kenya. It was found that strategic implementation could explain performance at 66.30% (R^2=.663, p<.05), which was similar to a study of commercial banks in which strategic implementation could represent organizational performance at 44.80 %.[28]

The study demonstrates that, if the nursing organization comprises an administrative committee with top-level management team characteristics in psychology, it will listen to the opinions of others for adaptation and setting of high goals because of job motivation. Behavioral and demographic characteristics can be used to predict organization performance. With TNMT characteristics and strategic implementation to predict nursing organization performance, the operating result of 52.90% can be explained in addition be being higher than using TNMT characteristics or strategic implementation. This finding is similar to the studied the top-level management team characteristics, strategic implementation and organization performance of tea companies in Kenya in which it was found that the use of top-level management team characteristics and strategic implementation in the prediction of the performance was 32.00% (R^2=.320, p<.05) and strategic implementation influenced organization performance (β = .460) more than the influence of top-level management team characteristics (β = .139). [29]

It is clear that good nursing organization performance requires top-level management teams to focus on the following three characteristics: psychographic, behavioral and demographic characteristics. Enhancing psychographic characteristics of open-minded and good listening skills will benefit the organization through effective communication. For behavioral characteristics, top-level management teams should search for new and alternative approaches, including equipment and innovation for management and

consistently building networks inside and outside the organization Lastly, in enhancing demographic characteristics, the top-level management team should emphasize prioritizing administrative experience. To solve unachieved strategic implementation issues, nursing organizations must have operationalization and institutionalization strategies. To enhance the operationalization component of strategic implementation, nursing service organizations must have policies that adequately guide decision-making for established programs and procedures of how things are done. Enhancing institutionalization and strategic implementation in a culture that is aligned with the strategy of the organization is functional. Moreover, able leadership with talent that drives initiative to implement strategy is demonstrated.

CONCLUSION AND RECOMMENDATIONS

The findings of the study reveal that the characteristics of top management teams and implementation of strategy have important consequences on organizational performance. Policy should be advanced to encourage and develop TNMT charac-teristics covering demographic, psycho-graphic and behavioral characteristics. Furthermore, the nursing committee can develop the team's role by using two strategic implementations, namely operationalization and institutionalization strategies. In terms of suggestions for future research, the findings could be implemented to study the path analysis of TNMT characteristics, strategic imple-mentation and nursing organization perfor-mance in community hospitals.

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