



A Study of the Effect of Knowledge Management on Organizational Culture and Organizational Effectiveness in Medicine and Health Sciences

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ABSTRACT

The usage of medical resources can meet required overall medial quality via the implementation of knowledge managements. At the same time, it allows medical professionals to understand and recognize the management strategy of the hospital. They will stay with the hospital and assist it in keeping its competitiveness and the goal of sustainable operations. Therefore, it is an important topic for hospital managements nowadays to realize this goal. Based on this consideration, the objective of this study is to investigate the influence of knowledge management on organizational culture and organizational effectiveness. The sampled subjects in this study include doctors and medical professionals in the city-level Grade III Level I hospital in Shanghai City. A total of 376 questionnaire copies were dispatched and a total of 266 copies were returned with an effective rate of response as 71%. The results of this study indicated the following findings. 1. There is a significantly positive correlation between knowledge management and organizational culture. 2. There is significantly positive correlation between organizational culture and organizational performance. 3. There is a significantly positive correlation between knowledge management and organizational performance. 4. The organizational culture has a mediation effect between knowledge management and organizational effectiveness. At the final stage of this study, we proposed our recommendations for the health care industry with an expectation that these could serve as the direction for stipulating health care policies in the future and a reference for the design of medical professional's works, personnel incentive managements, and in-service trainings. Embodied recommendations were also proposed for the health care industry to promote knowledge management and the practical implementation of strategies.


Keywords: health care industry, knowledge management, organizational culture, organizational effectiveness

INTRODUCTION

In response to the rapid-changing health care environment and the fierce competitions between hospitals, a hospital need to effectively evaluate its own positioning and the direction for revolutions when facing the fierce competitions and pressure so as to find the adequate management strategy. Modern hospital managements encounter an important

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State of the literature

- With a knowledge management environment set up in a hospital, it can provide medical professionals with sufficient information and skills. Therefore, it is an important topic for hospital managements nowadays to realize this goal.
- this study is to investigate the influence of knowledge management on organizational culture and organizational effectiveness so that these results could serve as the direction for stipulating health care policies in the future and a reference for the design of medical professional's works, personnel incentive managements, and in-service trainings.

Contribution of this paper to the literature

- For the domestic heal care industry to gain more strength, the best approach is to boost organizational effectiveness and knowledge creations. It was found in this study that, good knowledge creations are helpful for the acquisition of organizational effectiveness so as to build a knowledge management environment and get it well-established.
- The integration capabilities of government agencies can be utilized to urge various domestic medical-related institutions to host seminars and provide the information or channels for education and training courses within each hospital.
- It is recommended that the heal care industry can carry out internal tutorials via their intranet for the education on the relevant knowledge for its personnel.

topic of having medical professionals understand and recognize the management strategy of the hospital so that they will stay with the hospital and assist it in keeping its competitiveness and the goal of sustainable operations. At the moment, the health care industry lacks the measures of cultivating and keeping medical professionals along with in-service training. The health care industry is a knowledge-intensive industry with people providing others with services. It is highly professional so that it is very important for medical professionals to keep learning new knowledge and receiving training of new skills. It is still a target that requires further efforts for a hospital to build its knowledge management environment and provide medical professionals with sufficient resources for acquiring information and skills.

The conventional way of health care management emphasized on the topics including cost control, health care quality, real-time health care projects , and prevention management. It also involves with complicated clinical medial knowledge. Therefore, the usage of health care resources can fit the demands of the overall heat care quality by knowledge management. As the environment for the management of an industry is getting complicated and competitive, it is required to keep using the knowledge management concept to accumulate knowledge assets and create values in order to survive. Therefore, the objective of this study is to investigate the influence of knowledge management on organizational culture and organizational effectiveness so that these results could serve as the direction for stipulating health care policies in the future and a reference for the design of medical professional's works, personnel incentive managements, and in-service trainings. Meanwhile,

embodied recommendations were also proposed for the health care industry to promote knowledge management and the practical implementation of strategies.

LITERATURE REVIEW

Knowledge management

Dunkley et al. (2012) proposed that knowledge management is to build up the core knowledge of an organization circumspectly and systematically so that the knowledge assets of an enterprise can bring the largest benefits and feedbacks into play. Lacetera & Zirulia (2012) proposed that knowledge management can create new capabilities from an organization's experiences, knowledge, and expertise so as to achieve higher performance values. The definition of knowledge management by Bello & Oyekunle (2014) is as follows. Knowledge management is to enhance the performance of an organization via a series of processes for creating, acquiring, and using knowledge. Noruzy et al. (2013) proposed that knowledge management is a collection procedure that is capable of managing the creation, diffusion, and influence of knowledge so as realize the goal of an organization. It is a aggregation that can demonstrate an organization's design and management principles, processes, organizational structure, application technologies so as to help knowledge workers demonstrate their creativity and capability with an amazing efficiency and create values for an enterprise. Hagen (2012) proposed that knowledge management is not a whole new concept. It is a combined concept that includes systems based on knowledge, artificial intelligence, software engineering, the improvement of enterprise processes, management of human resources, and organizational behaviors. From a practical point of view, Chao & Ghang (2012) proposed that knowledge management involves with the processes and management of all of the members in an organization. It is a mechanism that promotes the use of knowledge by its people and allows people to tack effective actions in specific scenarios such as know-how, skill, information, capability, and wisdom.

In this study, we refer to definition by Lee & Wang (2012) that knowledge management is a business process, which is for a company to create and use the knowledge within its organizations or groups. It comprises three constituent elements as follows.

- (1) Organizational learning: The process for a company to acquire information or knowledge.
- (2) Knowledge production: The process of transforming or integrating original information into the knowledge that is capable of resolving business issues.
- (3) Knowledge distribution: The process that allows members in an organization to access and use the common knowledge within a company.

Organizational culture

An organizational culture is a system of values, beliefs, and meanings that are held jointly by members in an organization. The organizational culture can affect an extensive range of aspects (Borges, 2013). An organizational culture is the philosophy that instructs an

organization and it represents the major values and criteria of the organization. An organizational culture is also to convey behavioral norms for members, game rules, and organizational perceptions and atmosphere (Hsu et al., 2011). Robins proposed that a strong organizational culture can reduce the turnover of employees. In modern workplaces, organizational cultures are playing a more important role to influence and guide employee behaviors (Achillas et al., 2014). Shaping an organizational culture is also part of the management activities. However, it is not like the management of other functional departments or even professional departments from the aspect of its properties so that no effect will show in a short period of time. However, an organizational culture can be reshaped or changed via management technologies or many other approaches such as the planning of systematic management activities. This include the application of Schien's theory of three-tier organizational culture and the easier implementation on the level of artificial products such as the change and redesign of the office environment for the organization, the construction of Cooperate Identification System (CIS), the organizing of celebrations and activities, the construction of effective handling mechanism via the occurrence of issues, the integration of the desired values, and the shaping in the behaviors and performance. All of these approaches are beneficial for the establishment of an organizational culture (Filippini et al., 2012).

In this study, we refer to the standpoint of Chung et al. (2013) that a typical culture includes three constituent elements, which are structure, environment, and value. From the level of structures, an organization adopts diversified method to complete its activities (which include procedural, financial, and managerial). From the level of environments, it includes the objective backgrounds of person, event, and resort, which boost the understanding of the organization itself. From the third level of values, this deals with the earlier beliefs and norms that are held by the members in the organization. The most apparent presentation on organizational tasks is the quality and direction of the leadership. An organizational culture is composed of many variables. However, values could be the root of a culture and can be viewed as the personality of the culture so that an organization can be distinguished from others.

Organizational effectiveness

Effectiveness is a diversified and complicated concept. The definitions of effectiveness by scholars are as follows. Effectiveness is to stress very much on achieving the goal for an organization (Gebauer et al., 2012). It also emphasizes the degree of achieving the target via the application of organizational resources and stresses on the difference between the actual production and the expected production (Qu, 2012). The emphasis in on whether the goal for an organization is achieved (Agrawal, 2012). Effectiveness indicates the ratio of input to output, i.e., the capability of using the least amount of efforts or costs to generate the desired outcome. Jacobsen et al. (2014) proposed that organizational performance deals with the degree of achievement of the goal set by an organization. The main objective of various activities and strategies within enterprise operations is to enhance the organizational

performance. The relationship between a strategy and its performance is an important field of strategic management research since performance improvement is core target of strategies. Srivastava & Singh (2013) proposed that to make an organization more effective, an organization leader not only needs to strive for efficiencies and cope well with the environments internal and external to the organization, but also needs to make an appropriate use of effective and balanced leadership strategies such as competing values leadership, which makes every aspects of the organization including the static state, psychology, dynamic state, and ecology achieve the preset performance criterion that is within the capability of the organization. Diabat et al. (2012) proposed that an organization needs to cope well with effectiveness and efficiency in order to survive and effectiveness is exactly the achievement of the target. There are two hypotheses for this point of view as follows. 1. There is a group of rational decision-makers in an organization and they have a set of goals to pursue in their minds. 2. The target needs to be concretely defined and is realizable so that participants can understand and follow it. This definition of organizational effectiveness as the achievement of targets is the most traditional perception with widest applications.

The study by Lin (2013) indicated that the financial indicators are not the only consideration for determining performance. Various aspects such as corporate culture, personnel quality, or education and training are all possible keys to the success of an enterprise. The evaluation from these aspects needs to be strengthened and improved by including non-financial considerations such as organizational cultures, personnel, structure, and learning and growth as the reference indicators of organizational effectiveness. In this study, we adopt the classification of organizational effectiveness by Chao et al. (2013) as follows. 1. Hard performance: An enterprise's financial reports, operational growth rate, and rate of return, which are of financial. 2. Soft performance: Services, sales growth, and satisfaction, which are of non-financial.

Studies that are relevant to knowledge management and organizational cultures

Sussan (2012) proposed that since an organization is composed of people, the behaviors of members in an organization also compose a part of the organizational culture. On the contrary, the organizational culture also affects members' behaviors. Therefore, organizational cultures have the capability of changing and affecting members in the organization. In other words, Toro & Joshi (2012) proposed that most of the members of an organizational culture which strives for innovations and learning orientation present innovative and learning behaviors. Jacobsen et al. (2014) proposed that the major function and objective of HRM is to get members equipped with the behaviors and attitudes that comply with organizational expectations via managements systems and technologies such as hiring, incentives, rewards, education and training. For example, they are equipped with a higher degree of organizational citizenship behaviors and would like to actively learn, create, and share knowledge so as to effectively achieve the tasks (Agrawal, 2012). On the whole, Wang & Wang (2012) proposed that an effective HRM makes members happy to create and

share knowledge. An organization can carry out effective management of this knowledge and establish a complete knowledge management system. It is easier to form an organizational culture which pursues innovations. The organizational culture that pursues innovations will affect members in the organization and these processes form a continuous cycle. Therefore, we established a hypothesis in this study as follows.

H1: There is a significantly positive correlation between knowledge management and organizational cultures.

Studies that relevant to organizational cultures and organizational effectiveness

The study by Xu & Potenza (2012) indicated that, an enterprise is equipped with an organizational culture with specific attributes. It can acquire continuously high financial performance from their cultures. An organization culture needs to be equipped with three conditions so as to provide the organization with the competitive edge of high performance. These three conditions include 1. A culture with values; 2. The cultural trait is rare; 3. This culture is totally not possible to be duplicated or mimicked (Filippini et al., 2012). Thailand (2013) used the comparative framework to investigate the influence of organizational cultures on organizational effectiveness. He proposed the relationship framework between organizational cultures and organizational effectiveness. He indicated that there is a close relationship between the effectiveness and the values and beliefs held by the members in an organization. After a series of studies, he put it straightforward that organizational effectiveness is closed related to the organizational culture (Yoneyama, 2012). Vikas & Shivraj (2014) proposed that outstanding enterprises and those enterprises with excellent performance have the same values while the organizational culture affects employee behaviors and organizational performance. If the strategy that is promoted by an enterprise consists with its organizational culture, it will have a greater chance of success. Wu (2013) proposed that an organization's value system is the regulative principle for its organizational target, policy, and strategy. Therefore, its value system is a very important factor that affects the relationship between its culture and performance. If the general value within an organization supports the organization's target and strategy, its culture will be an important asset for the organization and the organizational effectiveness can be enhanced (Achillas et al., 2014). Therefore, we established a hypothesis in this study as follows.

H2: There is a significantly positive correlation between organizational cultures and organizational effectiveness

Studies that are relevant to knowledge management and organizational effectiveness

In the study by Wang (2014) on the roles of organizational management, knowledge management, and a learning organization, three relevant essays served as the targets for the information sharing with an organization and for the knowledge management of a learning organization. His study verified that the degree of knowledge sharing was positively

enhanced due to the learning and knowledge sharing effects brought by a learning organization. His study indicated that knowledge was successfully created, maintained, and transmitted so that the productivity of the organization is enhanced in order to obtain the maximum profits and enhance organizational effectiveness. Torgusa & Arundel (2013) proposed that knowledge management doesn't equal to managing knowledge. Instead, the goal of knowledge management is to effectively utilize knowledge. In other words, Yu et al. (2013) proposed that knowledge management is a means of achieving the utilization of internal knowledge assets within an organization. By sharing the explicit and implicit assets, an organization transformed into a learning organization and this is the goal of knowledge management. The organization can master the future development opportunities via the activities of knowledge management so that organizational effectiveness is enhanced (Gebauer et al., 2012). Therefore, we established two hypotheses in this study as follows.

H3: There is a significantly positive correlation between knowledge management and organizational effectiveness.

H4: An organizational culture has a mediation effect between knowledge management and organizational effectiveness.

RESEARCH FRAMEWORK AND DESIGN OF METHODOLOGY

Research targets

The sampled subjects in this study include doctors and medical professionals in the city-level Grade III Level I hospital in Shanghai City and they are the targets for the questionnaire survey. A total of 376 questionnaire copies were dispatched. After invalid or incompletely filled questionnaire copies were removed, a total of 266 copies were returned with an effective rate of response as 71%. Grade III Level I hospitals in Shanghai City are those hospitals that are classified by hospital grades and they include the Affiliated Grade III Level I hospital of Shanghai Jiao Tong University School of Medicine, the Affiliated Grade III Level I hospital of Fudan University Shanghai Medical College, the Affiliated Grade III Level I hospital of the Second Military Medical University, etc.

Method of analysis

Regression analyses were used for the understanding of the relationship between knowledge management, organizational culture, and organizational effectiveness.

ANALYSIS AND DISCUSSIONS

Factor analysis of knowledge management

After the factor analysis of the knowledge management scale in this study, a total of three factors were extracted. This first factor is organizational learning (Eigenvalue=4.957, $\alpha=0.86$). The second factor is knowledge production (Eigenvalue=3.806, $\alpha=0.82$). The third factor is

knowledge distribution (Eigenvalue=2.438, $\alpha=0.87$). The cumulative explained common variance of these three factors reached 82.443.

After the factor analysis of the organizational culture scale in this study, a total of three factors were extracted. The first factor is structure (Eigenvalue=3.693, $\alpha=0.83$). The second factor is environment (Eigenvalue=2.755, $\alpha=0.89$). The third factor is values (Eigenvalue=2.214, $\alpha=0.86$). The cumulative explained common variance of these three factors reached 80.381%.

After the factor analysis of the organizational effectiveness in this study, a total of two factors were extracted. The first factor is hard performance (Eigenvalue=3.752, $\alpha=0.90$). The second factor is soft performance (Eigenvalue=3.263, $\alpha=0.88$). The cumulative explained common variance of these two factors reached 84.627%.

Analysis of the correlation between knowledge management and organizational culture

Regression analysis was used in this study to examine the hypotheses and the theoretical framework. The results of analysis by the first regression equation is shown in Table 1. The regression equation reached a significant level ($F=42.385$, $p<0.001$). Therefore, knowledge management has a significant influence on the structure. The organizational learning, knowledge product, and knowledge distribution among the knowledge management have a significantly positive influence on the structural constituent element of the organizational culture. Each of these three has reached the significant level ($\beta=1.838$, $p<0.01$, $\beta=2.063$, $p<0.001$, $\beta=2.355$, $p<0.001$).

The results of analysis by the second regression equation are shown in Table 1. The regression equation reached the significant level ($F=53.661$, $p<0.001$). The knowledge management has a significant influence on the environment. The organizational learning, knowledge production, and knowledge distribution among the knowledge management have a significantly positive influence on the organizational culture. Each of these three reached the significant level ($\beta=1.942$, $p<0.01$, $\beta=2.157$, $p<0.001$, $\beta=2.416$, $p<0.001$).

The results of analysis by the third regression equation are shown in Table 1. The regression equation reached the significant level ($F=62.734$, $p<0.001$). The knowledge management has a significant influence on values. The organizational learning, knowledge production, and knowledge distribution among the knowledge management have a significantly positive influence on the value constituent element of the organizational culture. Each of these three reached the significant level ($\beta=2.062$, $p<0.001$, $\beta=2.177$, $p<0.001$, $\beta=2.125$, $p<0.001$). Therefore Hypothesis H1 is valid.

Table 1. Regression analysis of the constituent elements of knowledge management on organizational cultures

Dependent variable→ Organizational culture						
Independent variable↓	Structure		Environment		Value	
	β	ρ	β	ρ	β	ρ
Knowledge management						
Organizational learning	1.838**	0.003	1.942**	0.001	2.062***	0.000
Knowledge production	2.063***	0.000	2.157***	0.000	2.177***	0.000
Knowledge distribution	2.355***	0.000	2.416***	0.000	2.125***	0.000
F value	42.385		53.661		62.734	
P value	0.000***		0.000***		0.000***	
R2	0.266		0.343		0.357	
Adjusted R2	0.241		0.315		0.321	

Note: * indicates $p < 0.05$, ** indicates $p < 0.01$, *** indicates $p < 0.001$.

Analysis of the correlation between knowledge management and organizational cultures

Regression analysis was used in this study to examine the hypotheses and the theoretical framework. The results of analysis by the first regression equation are shown in Table 2. The regression equation reached the significant level ($F=33.426$, $p < 0.001$). The knowledge management has a significant influence on hard performance. The organizational learning, knowledge production, and knowledge distribution among the knowledge management has a significantly positive influence on hard performance. Each of these three reached the significant level ($\beta=2.122$, $p < 0.001$, $\beta=2.243$, $p < 0.001$, $\beta=2.088$, $p < 0.001$). The results of analysis by the second regression equation are shown in Table 2. The regression equation reached the significant level ($F=35.627$, $p < 0.001$). The knowledge management has a significant influence on soft performance. The organizational learning, knowledge production, and knowledge distribution among the knowledge management has a significantly positive influence on soft performance. Each of these three reached the significant level ($\beta=2.237$, $p < 0.001$, $\beta=2.166$, $p < 0.001$, $\beta=2.383$, $p < 0.001$). Therefore Hypothesis H3 is valid.

The results of analysis by the third regression equation are shown in Table 2. The regression equation reached the significant level ($F=34.262$, $p < 0.001$). The organizational culture has a significant influence on hard performance. The structure, environment, and values among the organizational culture have a significantly positive influence on hard performance. Each of these three reached the significant level ($\beta=1.896$, $p < 0.01$, $\beta=2.044$, $p < 0.001$, $\beta=1.925$, $p < 0.01$). The results of analysis by the fourth regression equation are shown in Table 2. The

regression equation reached the significant level ($F=38.173$, $p<0.001$). The organizational culture has a significant influence on soft performance. The structure, environment, and values among the organizational culture have a significantly positive influence on soft performance. Each of these three reached the significant level ($\beta=2.046$, $p<0.001$, $\beta=2.133$, $p<0.001$, $\beta=2.262$, $p<0.001$). Therefore Hypothesis H2 is valid.

Table 2. Regression analysis of the constituent elements of knowledge management on organizational effectiveness

Dependent variable→	Organizational effectiveness							
	Hard performance				Soft performance			
Independent variable↓	Hard performance		Soft performance		Hard performance		Soft performance	
Knowledge management	β	ρ	β	ρ	β	ρ	β	ρ
Organizational learning	2.122***	0.000	2.237***	0.000				
Knowledge production	2.243***	0.000	2.166***	0.000				
Knowledge distribution	2.088***	0.000	2.383***	0.000				
Organizational culture								
Structure					1.896**	0.006	2.046***	0.000
Environment					2.044***	0.000	2.133***	0.000
Values					1.925**	0.003	2.262***	0.000
F value	33.426		35.627		34.262		38.173	
P value	0.000***		0.000***		0.000***		0.000***	
R2	0.288		0.304		0.296		0.321	
Adjusted R2	0.258		0.285		0.273		0.303	

Note: * indicates $p<0.05$, ** indicates $p<0.01$, *** indicates $p<0.001$.

Analysis of the mediation effect of knowledge management and organizational cultures on the organizational effectiveness

In this study, the mediation effect of the organizational culture was analyzed by the hierarchical regression in Table 3. The knowledge management has a significant capability in explaining the dependent variable hard performance ($F=33.426$, $p<0.001$). Based on Model 2 and by considering the influence of both the knowledge management and the organizational culture on hard performance for the investigation of the mediation effect of the organizational culture, it was found that the β value of organizational learning dropped significantly from 2.122 ($p<0.001$) to a β value of 1.762 ($p<0.05$). This indicated the organizational culture will reduce the direct effect of the organizational learning on hard

performance. Secondly, the β value of knowledge production dropped significantly from 2.243 ($p < .001$) to a β value of 1.833 ($p < .01$). This indicates the organizational culture will reduce the direct effect of the knowledge production on hard performance. Finally, the β value of the knowledge distribution dropped significantly from 2.088 ($p < .001$) to a β value of 1.685 ($p < .05$). This indicates the organizational culture will reduce the direct effect of the knowledge distribution on hard performance.

Table 3. Hierarchical regression of knowledge management and organizational culture on organizational effectiveness

dependent variable→	Organizational effectiveness							
	Model 1		Model 2					
Independent variable↓	Hard performance		Soft performance		Hard performance		Soft performance	
	β	ρ	β	ρ	β	ρ	β	ρ
Knowledge management								
Organizational learning	2.122***	0.000	2.237***	0.000	1.762*	0.016	1.741*	0.018
Knowledge production	2.243***	0.000	2.166***	0.000	1.833**	0.005	1.524*	0.036
Knowledge distribution	2.088***	0.000	2.383***	0.000	1.685*	0.023	1.944**	0.003
Organizational culture								
Structure					2.162***	0.000	1.966**	0.002
Environment					2.215***	0.000	2.238***	0.000
Values					2.093***	0.000	2.341***	0.000
F value	33.426		35.627		42.633		45.243	
P value	0.000***		0.000***		0.000***		0.000***	
R2	0.288		0.304		0.406		0.421	
Adjusted R2	0.258		0.285		0.387		0.398	

Note: * indicates $p < 0.05$, ** indicates $p < 0.01$, *** indicates $p < 0.001$.

Moreover, the knowledge management has a significant capability in explaining the dependent variable soft performance ($F=35.627$, $p < 0.001$) Based on Model 2 and by considering the influence of both the knowledge management and the organizational culture on soft performance for the investigation of the mediation effect of the organizational culture. It was found that the β value of organizational learning dropped significantly from 2.237 ($p < .001$) to a β value of 1.741 ($p < .05$). This indicates the organizational culture will reduce the direct effect of organizational learning on soft performance; secondly, the β value of knowledge production dropped significantly from 2.166 ($p < .001$) to a β value of 1.524 ($p < .05$). This indicates the organizational culture will reduce the direct effect of knowledge

production on soft performance. Finally, the β value of knowledge distribution dropped significantly from 2.383 ($p < .001$) to a β value of 1.944 ($p < .01$). This indicates the organizational culture will reduce the direct effect of knowledge distribution on soft performance. It is known from the results that, the organizational culture has some mediation effects for the correlation between knowledge management and organizational effectiveness. Therefore, we can infer that Hypothesis H4 is valid.

CONCLUSIONS

It is known from the research results that, the knowledge management has an apparent influence on organizational culture and organizational effectiveness. That is, the better the knowledge management, the higher the organizational effectiveness is. Moreover, the better the organizational culture, the higher the organizational effectiveness is. Similarly, the higher the knowledge management, the higher the organizational culture is. Therefore, based on the standpoint that a consummate knowledge management can boost the enhancement of the organizational effectiveness and due to the fact that the health care industry is an organization that provides patients with services, the overall organizational effectiveness of the health care industry needs to be enhanced so as to help patients obtain higher service qualities. Therefore, the health care industry needs to set providing the optimal knowledge management environment as the most important goal to achieve in the future. It is required to strengthen the education and training for employees, integrate the channels for knowledge exchanges within the health care industry so that medical professionals can obtain new knowledge and exchange their skills timely. This way the health care knowledge forms a virtuous cycle and people can obtain the most consummate health cares. The purpose of knowledge management is for the creation and accumulation of knowledge among which the creation of knowledge is more important. Therefore, a good knowledge creation capability can bring a significantly positive organizational effectiveness for the health care industry. Vendors in the health care industry create an environment of creations and innovations by active management strategies. After this approach brings better knowledge creation effects, it will naturally bring better effects to the organizational culture and the organizational effectiveness within an enterprise.

RECOMMENDATIONS FOR FUTURE RESEARCH

Based on the results obtained on the knowledge management, organizational culture, and organizational effectiveness in this study, we proposed some recommendations for follow-up research as follows.

1. Establishing the knowledge management system of the health care industry: The competitive edge of an enterprise is the creation of knowledge and continuous innovations. For the domestic health care industry to gain more strength, the best approach is to boost organizational effectiveness and knowledge creations. It was found in this study that, good knowledge creations are helpful for the acquisition of organizational effectiveness so as to build a knowledge management environment and get it well-established. This is a very important topic for the domestic health care industry in the future. Therefore, it is required

to strengthen the knowledge creation capabilities and establish the knowledge management system for the health care industry via good knowledge sharing channels.

2. Improving the in-service training for medical personnel: It is expected that the regulatory agency of the government can carry out an investigation on the training demands for medical professionals and host medical education and training courses. The integration capabilities of government agencies can be utilized to urge various domestic medical-related institutions to host seminars and provide the information or channels for education and training courses within each hospital. With the minimum travel efforts, this can increase the opportunities for medical professionals to acquire abundant medical expertise. This can also gradually improve the lack of in-service training opportunities for medical personnel and reverse the adverse situations such as high turnovers and uneasy recruitment. It is expected that more medical personnel and doctors are willing to remain in the health care industry along with freshmen from the relevant departments willing to serve in the health care industry.

3. Application of new information and communication technologies and network technology: It is recommended that the health care industry can carry out internal tutorials via their intranet for the education on the relevant knowledge for its personnel. This allows the personnel in the health care industry to be aware of the news and information in the health care industry. Moreover, new tools such as Facebook can also be used to build network learning communities so as to share health care knowledge and enrich their knowledge online. It is also advised to encourage the personnel to provide feedbacks to the intranet for the benefit of everyone. This approach can encourage colleagues to actively participate in promoting knowledge management and can also keep updating the data in the intranet so that the contents are more meaningful. This can further enhance the professional capabilities of medical professionals.

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