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Investigation of Hospital Accreditation Awareness and Organizational Learning Promotion from Nursing Staff Perspective

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Abstract

Aim: To investigate the differences between nursing staff's perception on hospital accreditation awareness and effectiveness of organizational learning based on personal characteristics of nursing staff and hospital ownership level.

Methods: This study employed a cross-section survey design targeting hospital nursing staff. 87 hospitals participated in the survey, and 473 survey forms were returned. Study tools included (1) personal background information and organizational data: variables included hospital ownership, hospital level, district, gender, age, years of employment, position and education; (2) hospital accreditation awareness scale: items included Hospital Management and Medical care; (3) organizational learning effectiveness scale: Personal Mastery, Team Learning & Building Shared vision.

Results: Significant differences exhibited in factors influencing personal mastery were Hospital Level, years of employment and education; significant differences exhibited in factors influencing team learning were Hospital ownership, years of employment and educational; significant differences exhibited in factors influencing building shared vision were Hospital Level and years of employment.

Conclusion: Our study allows hospital managers to better understand the degree of influence between organizational learning and hospital accreditation awareness, which may assist decision makers in further developing accreditation implementation strategies and encourage professional growth of nursing staff. We hope to expand the functional roles of nursing professionals in a diversified healthcare system, and create a higher quality learning environment for nursing care.

Keywords: Hospital accreditation awareness; Organizational learning; Personal mastery; Team learning; Building shared vision

Introduction

Hospital accreditation is part of the organizational learning system [1]. To facilitate integration of the accreditation mechanism into the organization and practices of the hospital, well-planned and persistent education, training, and strategies are applied to facilitate linking of the evaluation results to the learning goals of the organizations, so that the updated information will become the driving force for hospital advancement. Organizational learning refers to the process where all members of an organization improve the individual or organizational behaviors through mutual learning and sharing of individual or organizational experiences accumulated from the job functions several scholars [2-4]. Held the idea that organizational learning was the synopsis of experiences as well as the process of new knowledge exploration, and such experiences are incorporated into the entire organization systematically [5]. The outcome of hospital accreditation has become a symbol of honor for the hospitals and the basis for subsidy apportionment from the National Health Insurance. Therefore, how to implement the accreditation into the routine hospital operations and meet the anticipated objectives will depend on effective organizational learning.

During the reform process of the new hospital accreditation, the addition of numerous guidelines established by the hospital organization resulted in the work overload of nursing staff and the management [6]. The nursing staff are the important human resources of hospital as well as the indispensible major strength of the medical team, and more importantly, one of the influential factors to ensure that the patient receive satisfactory care quality [7]. In recent years, the hospital accreditation effectiveness and organizational learning issue have increasingly drawn more and more attention. However, there is a considerable deficiency in the empirical study from the nursing staff's

perspective nationally or overseas. The present was intended to further understand the connotation of nursing staff for hospital accreditation and organizational learning in depth to propose more comprehensive thoughts on the effectiveness of organizational learning for the nursing staff working in government-funded hospitals, hospital management, and administration personnel.

This study will focus on investigating: 1) the differences in hospital characteristics influencing the accreditation awareness and effectiveness of organizational learning of the nursing staff; 2) the effects of nursing staff personal characteristics on hospital accreditation awareness and organizational learning. Through this study, we hope to delineate the correlation between hospital accreditation system and the effectiveness of organizational learning on the nursing staff.

Literature Review

Hospital accreditation system

Hospital accreditation has been conducted in Taiwan for many years. In 1978, the Department of Health and Ministry of Education of Executive Yuan initiated the teaching hospital accreditation in

order to ensure the quality of intern training [8]. Afterwards, the hospital accreditation and psychiatric hospital accreditation have been conducted since 1985 and 1988 respectively in order to enhance the medical care quality. Following a succession of medical malpractices occurred in 2002, the Department of Health shifted the evaluation goal for hospital accreditation from "treatment-oriented" to "patient-centered" attitude as the accreditation standards at that time could no longer suit the hospital reform and quality assessment. As a result, the hospital accreditation ranking and outcome were re-stipulated and the new hospital accreditation system was implemented in 2004.

The basic mentality of this new system is to do-away with the traditional practice of basing healthcare quality on ward scale, departments established and ownership classification, and instead encourage hospitals to pursue excellence by developing their specialties and unique characteristics. Through collaborative teamwork between medical staff of different disciplines, hospitals should provide services that cater to the health needs of the population, and focus their goal on increasing medical quality and better service outcomes. The key principles of the improved accreditation system are emphasis on quality of medical care and hospital functions, with the emphasis on assessing overall patient care process and the visions and principles of the hospital. As a result, the hospital accreditation criteria in Taiwan were directed away from the hardware structure of the initial stage to the medical care implementation process and achievement in order to enhance the medical service quality, offer satisfactory medical quality to people, and protect the rights and interests of the patients [9,10]. Therefore, hospital accreditation not only acts as a tool for quality improvement, but also ensures that the medical care system provides safe, effective, and reliable health care [11].

Taiwan Joint Commission on Hospital Accreditation (TJCHA) commenced a review of the standards in 2009 and has recently introduced a new set of standards comprising 238 standards under 17 chapters for accrediting hospitals (excluding psychiatric hospitals) from 2011 onward. In terms of hospital management, the accreditation includes: operation strategy, staff management and support system, human resource management, staff education and training, management of patient records, information and communication, safe environment and facilities, patient-oriented service and management, crisis and emergency disaster response. In terms of medical care, the accreditation includes: right and responsibilities of patients and family, healthcare quality management, treatment and assessment, special care, medication safety, anesthesia and surgery, Infection control, clinical laboratory, pathology and radiology, preparation for discharge and provision of continuous care [12]. From the above-mentioned accreditation items, it is evident that the new hospital accreditation system is highly patient-oriented, focuses on medical service quality, values medical teamwork in order to rethink or redesign the administrative strategies and systems of the hospital through the patient-oriented perspectives [13,14]. The core value of accreditation was to establish a safe, effective, patient-centered, timely, efficient, fair, and high-quality accreditation system [6]. The accreditation result can also help understand the effectiveness of administrative management and health care in the hospital.

Organizational learning

The analysis of organizational learning has become an increasingly important study area over recent years. Various works have dealt with the analysis of this construct from differing viewpoints. There are studies that focus on this construct using a psychological approach [15,16], a sociological approach [17,18], or from the point of view

of Organizational Theory [19-21]. More recently, learning has been considered, from a strategic perspective, as a source of heterogeneity among organizations, as well as a basis for a possible competitive advantage [22-25].

Multiple perspectives on organizational learning exist in the academic communities. Two lines of thoughts arise from literature research: One is from the perspective of system dynamics, where the concept that learning occurs in the individual mental or organizational structure is emphasized; the other is from the point of sociology, in that learning and knowledge acquirement are achieved from interactions and dialogues between individuals [26,27]. From the perspective of organizational behaviour (OB), individual learning happens as people continue to assimilate new knowledge through experience in their daily lives and from other sources [28].

Sinkula et al. [29] reasoned that organizational learning is a cumulative process culled individual, team-based and organizational participation; Van der Heijden [5] believed that organizational learning is the summarization of experience during discovery of new knowledge, and is systematically assimilated into the organizational culture. Personal mastery influences organizational performance directly and indirectly through organizational learning and innovation [30-33]. Sinkula et al. [29] also evaluated organizational learning based on 3 facets developed from the perspectives of market information processing: commitment to learning, building a shared vision and open-mindedness. It can be seen that organization learning is an interactive and trust-based process between hospital members, achievable through personal mastery, team learning and building shared vision.

Awareness of hospital accreditation and effectiveness of organizational learning

Members with a high level of awareness for the hospital accreditation will have a positive impact on organizational learning. Goh et al. [34] reasoned that accreditation is beneficial to the development of organization members and helps to establish a consensus on organizational operation (such as shared vision), re-asserting core values and beliefs, and brings about fundamental re-structuring of the organization. A study by Reeve et al. [35] on the NHS accreditation in UK pointed out that results from accreditation may improve personal reflection, learning and self-mastery. With the new tools and the power of the new consensus, accreditation, done effectively, can now help the field achieve the shared visions woven into the fabric over the many years of accreditation's creation, but with the focus on achieving improved health [36]. To promote organizational learning, hospital accreditation should be incorporated into the organizational learning system and integrate seamlessly into hospital management; sustained organizational learning helps to link organizational goals to the outcomes of the accreditation process [34,37].

Our study has concluded that organizational learning should include the following 3 dimensions: Personal Mastery, Team Learning, and Building Shared Vision, This research summarizes organizational learning into three dimensions- Personal Mastery, Team Learning, and Building Shared Vision, which interact with each other constantly and efficiently in a dynamic process for the organization to improve its abilities to resolve and respond to different problems [38-40]. Furthermore, Team Learning research describes what constitutes successful team processes and which organizational variables support good team processes [41,42]. Effective team learning processes include trial-and-error experimentation and collaborative problem-solving [43]. When project teams take action to experiment

and reflect on their actions-including mistakes that might have been made-to improve future problem-solving cycles, they can be said to be learning. The learning mechanism of teamwork and resource sharing among organization members not only muster personal capabilities to bring individual expertise into full play but also unite the talents and consensuses of organization members to strive for the long-term goals of the organization in order to achieve the collective visions [44].

A variety of studies have called for research into accreditation effectiveness and performance measurement [45-48]. Two distinctive avenues for evaluating accreditation programmers have been mentioned [49]. The first is the 'objective indicator' approach, in which tangible measures of success, mainly in the form of performance indicators, are developed or extracted from reviewed organizations. The second way is called the 'experience or perception' approach, in which perceptions of different groups, involved or related to accreditation, are elicited relative to accreditation's functions or components [49]. Both of these approaches have their own strengths and weaknesses; our study employed the second perception-based approach to examine the correlation between accreditation results of hospital management and medical care, and the effectiveness of organizational learning.

Methods

Study design and subject

The study uses the cross-section survey design to collect data with a structured survey form. The subjects are the nursing staff from the medical centers, regional and district hospitals in Taiwan. Before the survey forms are sent, researchers contacted the nursing department of each hospital to obtain their consent for participation in the study and assisting in distribution of the survey to the nursing staff. The survey forms are then delivered via mail or by researchers themselves. Case inclusion criteria include; 1) nursing staff employed by the hospital, 2) subjects who have agreed to participate in the study, and 3) research tools and tests for reliability and validity of the study.

Data collection is performed using a self-administered survey form. Other research tools include personal attribute information survey form, hospital accreditation awareness scale and organizational learning effectiveness scale. The first step of the development of the survey form was to prepare an initial survey draft according to Guyatt et al. [50] four processes of scale development, referencing literatures to establish an original question database. The scoring system of the survey is then decided, and the survey draft is revised according to the outcomes of expert validity and surface validity. The second step was to establish the reliability and validity of the survey. The development processes of the research tools are as follows:

(I) Initial draft of the survey

An original database of questions was established by researching and collecting research tools used in foreign or domestic studies investigating hospital accreditation and organizational learning. Variables of the personal attribute information survey included hospital ownership, hospital level, districts, gender, age, years of employment, position and education; there are 27 questions in the original question database of the hospital accreditation awareness scale, 33 questions in the organizational learning utility scale.

Once the database is constructed, the hospital accreditation awareness scale is developed to include two categories: 1) Management of the hospital is the degree of perception to the following accreditation items: operation strategy, staff management and support system, human resource management, staff education and training, management of

patient records, information and communication, safe environment and facilities, patient-oriented service and management, crisis and emergency disaster response; 2) Medical care is the degree of perception on right and responsibilities of patients and family, healthcare quality management, treatment and assessment, special care, medication safety, anesthesia and surgery, infection control, clinical laboratory, pathology and radiology, preparation for discharge and provision of continuous care. The organizational learning utility scale included the following 3 dimensions: 1) Personal Mastery; the degree of self-improvement to the mental thought patterns and active learning of the nursing staff; 2) Team Learning; the degree of learning through interactions between medical teams; 3) Building Shared Vision; the extent of the medical team in building consensus and realizing shared vision.

The data measurement criteria were based on Likert Scale. The questionnaire scale included totally agree, agree, may agree, disagree, totally disagree and was filled out by the subject based on his or her awareness. The questionnaire of this study was constructed based on expert validity. Following the completion of draft questionnaire, the senior clinical nursing staff and medical affair management experts including 2 nursing directors, 1 medical affair management director, and one academic scholar were invited to perform expert validity testing to review the content relevancy and wording clarity of the questionnaire. The CVI (index of content validity) value of at least 85% was used as the testing standard of questionnaire question. After being validated by experts, 3 questions were revised in the personal attribute questionnaire; 5 questions were revised in the hospital accreditation awareness scale with a CVI of 0.94; 11 questions were revised in the organizational learning utility scale with a CVI of 0.91.

(II) Construct validity of the survey draft

The construct validity of the scale is tested with factor analysis of the principal components and maximum variance method. The KMO (Kaiser-Meyer-Olkin) value of the survey was tested first and the results were 0.962 for the hospital accreditation awareness scale, p = 0.000(p<0.05) for Bartlett's Test of Sphericity; the KMO value of the organizational learning scale was 0.923, p = 0.000(p< 0.05) for Bartlett's Test of Sphericity. These results indicated that the two scales are suitable for factor analysis. Principal components analyses of the scales are then performed to extract the factors, using an Eigen value that is greater than 1.0 and scree plot as the standards of factor extraction. The Eigen value of the accreditation awareness scale was larger than 4.131, and the scree plot extracted two factors: Hospital management and Medical care, with a total of 27 questions and 59.395% of favorable variance. The eigenvalue of the organizational learning utility scale was greater than 1.21, and the scree plot extracted 3 factors: Personal Mastery, Team Learning and Building Shared Vision, with a total of 33 questions. The favorable variance of these 3 factors was 64.748%. Our results indicated that the two scales developed for the study have good construct validity.

(III) Reliability test of the initial draft

Following the expert validity testing in the present study, the pretesting questionnaire was confirmed. In the first stage of this study, 40 nursing staff were selected for the pilot testing between June 1, 2011 and June 20, 2011. The results of the pilot validity test were as follow: hospital accreditation awareness scale: Cronbach's coefficient alpha was 0.93; the α coefficient for each subsets of scale was between 0.80 and 0.95; organizational learning utility scale: Cronbach's coefficient alpha was 0.89, and the coefficient for each subset of scale was between 0.84 and 0.9, indicating that items in each factor have high homogeneity

and high internal consistency of questions in each item. The results of the actual study were as follows: Hospital accreditation awareness scale; Cronbach's coefficient alpha was 0.96; the α coefficient for each subsets of scale was between 0.81 and 0.96; the data were the results of internal consistency test from 437 subjects; Organizational learning utility scale; Cronbach's coefficient alpha was 0.90, and the coefficient for each subset of scale was between 0.85 and 0.91.

Data collection process

Prior to performing the questionnaire survey, the official document was forwarded to each hospital to acquire the consent with the objective to revise the questionnaire testing tools. After the revision of questionnaire, the study was submitted to Buddhist Tzu Chi General Hospital Research Ethics Committee for IRB review (Protocol Number: IRB100-68) followed by the formal test of the second stage. The recruitment period was from August 1, 2011 to September 30, 2011 to distribute 650 questionnaires in 2 months. 87 hospitals participated in the distribution of the questionnaires. After retrieval of questionnaires and elimination of invalid ones, there were a total of 473 valid questionnaires with a retrieval rate of 72.8%.

Data analysis

In the present study, SPSS for Windows 18.0 statistical software was used as the tool for statistical analysis of the data. As the weighing criteria of the study variables and applicability of the statistical analysis tool were taken into consideration, the descriptive statistical analysis, validity analysis, correlation coefficient analysis were employed. Finally, the regression analysis was utilized further to investigate the predictability of the independent variables for dependent variables with $p<0.05$ as the criterion for statistical significance.

Results

Sample characteristics

Sample Characteristic Values for the 473 nurses in this study are shown in Table 1. In this study, there were 281 Public Hospitals (59.4%), 169 Proprietary Hospitals (35.7%), 23 Private Hospitals (4.9%) samples. In terms of hospital level, there were 136 Medical Center (28.7%), 280 Regional Hospital (59.2%), and 57 District Hospital (12.1%) samples. In terms of hospital location, there were 136 Northern (28.8%), 39 Central (8.2%), 257 Southern (54.3%), and 41 Eastern (8.7%) samples.

In the nursing staff samples of the present study, there were 462 female (97.7%, the highest) while only 11 male (2.3%) samples. In terms of age, there were 226 samples(47.8%, the highest) which are 31-40 years old followed by 193 samples(40.8%) which are <30. In terms of years of employment, there were 231 (48.8%, the highest) <5 followed by 119 (25.2%) samples which are 6-10. In terms of education, there were 257 college (54.3%) followed by 185 junior college (39.1%) samples. In terms of position, there were 409 non-management (86.5%) samples.

Correlation coefficient of the variables and test for predictability

The residual analysis diagram of this study unraveled that each regression model did not violate the linear and homogeneity hypotheses. With respect to the colinearity issue, although the variable correlation coefficient matrix in Table 2 showed that independent variable dimensions were highly correlated with statistical significance ($p<0.05$), the Variable Inflation Factor (VIF) was used in this study to test if any serious multicolinearity was present among variables in order to prevent high co linearity existing among variables resulting in the failure to reach the most effective regression model [51]. If VIF is greater than 10, the colinearity of this model is classified as significant.

Measure	Freq.	Percent
Hospital Ownership		
Public Hospitals	281	59.4
Proprietary Hospitals	169	35.7
Private Hospitals	23	4.9
Hospital level		
Medical center	136	28.7
Regional hospital	280	59.2
District hospital	57	12.1
Hospital location		
Northern	136	28.8
Central	39	8.2
Southern	257	54.3
Eastern	41	8.7
Gender		
Male	11	2.3
Female	462	97.7
Age (years)		
<30	193	40.8
31-40	226	47.8
41-50	51	10.8
>51	3	0.6
Years of employment		
<5	231	48.8
6-10	119	25.2
11-15	77	16.3
16-20	33	7.0
>21	13	2.7
Education		
Junior College	185	39.1
College	257	54.3
Graduate school	16	3.4
Other	15	3.2
Position		
Management	64	13.5
Non-management	409	86.5

Table 1: Sample 5 (n = 473).

Measure	1	2	3	4	5
1. Hospital Management Accreditation Awareness	1.00				
2.Medical Care Accreditation Awareness	0.68**	1.00			
3. Personal Mastery	0.33**	0.32**	1.00		
4. Team Learning	0.48**	0.57**	0.40**	1.00	
5. Building Shared Vision	0.43**	0.64**	0.40**	0.71**	1.00
Note: *** p<0.001 , **p<0.01 , *p<0.05					

Table 2: Variable correlation coefficient matrix.

The colinearity testing showed that the VIF value of each variable was 1-2 and there was no significant colinearity in this regression model, reaching an efficient configuration. As a result, this study was able to perform regression analysis.

To identify and verify more influential variables of the hospital nursing staff on accreditation effectiveness and organizational learning and their actual interpretations and predictabilities, the standard multiple regression analysis was conducted for statistical testing. Each dimension of hospital variable, accreditation effectiveness, and organizational learning was simultaneously placed into the regression model for analysis. The categorical variables were transformed to dummy variables prior to analysis. The analytical outcomes showed

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that the VIF value of each variable was less than 10 and was 1.182-1.980, indicating that there was no colinearity concern associated with the independent variables in the regression analysis model of the present study. Moreover, the DW test value was found to be 1.831 which was close to 2, demonstrating that the residual value of this model did not violate the self-related fundamental hypothesis. In this study, the categorical variables of the characteristics of the study subjects' hospitals were transformed to dummy variables with variables "Public Hospitals", "Medical Center", "Northern", "Male", "Age<30", "Years of employment<5", "Junior College", and "Non-management" as control parameters.

The effects of hospital characteristics on awareness of accreditation and effectiveness of organizational learning

To investigate the level of influence nursing staff of different hospital characteristics has on the effectiveness of organizational learning, standard multiple regression analysis was performed with the following dependent variables; personal mastery, team learning and building shared vision. Our results of the regression analysis showed that after accounting for other variables, the predictive explanatory power (R^2) of the personal mastery in nursing staff was 16%, and the variance of pattern explanation was statistically significant ($F=9.831$; $p<0.001$). Factors that influence personal mastery in nursing staff included hospital level, hospital management accreditation awareness and medical care effectiveness. In terms of hospital level, personal mastery was higher in regional and district hospitals, scoring 0.121 and 0.107, respectively, which were higher than medical center. The factors "hospital management accreditation awareness" and "medical care accreditation awareness" were positively correlated with personal mastery ($\beta=0.229$, 0.166), indicating that when the awareness of hospital accreditation is high, so will the effectiveness of personal mastery. Our results showed that hospital ownership and location did not greatly influence personal mastery, as the β value was not statistically significant ($p >0.05$).

The predictive explanatory power (R^2) of team learning in nursing staff was 36.5%, and the variance of pattern explanation was statistically significant ($F=29.543$; $p<0.001$). Factors that influence team learning in nursing staff included "hospital ownership", "hospital management accreditation awareness" and "medical care accreditation awareness". In terms of hospital ownership, proprietary and private hospitals effectiveness scored lower than groups from public hospitals, which were 0.114 and 0.076 lower, respectively; the factors "hospital management accreditation awareness" and "medical care accreditation awareness" correlated positively with team learning ($\beta=0.159$, 0.476), indicating that when the awareness of hospital accreditation is high, so will the effectiveness of team learning. Hospital level and location did not greatly influence team learning, as the β value was not statistically significant ($p >0.05$).

Lastly, the predictive explanatory power (R^2) of building shared vision in nursing staff was 42.1%, and the variance of pattern explanation was statistically significant ($F=37.442$; $p<0.001$). Factors that influence building shared vision in nursing staff included "hospital level" and "medical care accreditation awareness". In terms of hospital level, district hospitals scored 0.077 higher than medical center on building shared vision; it was found that medical care accreditation awareness correlated positively with building shared vision($\beta=0.649$); when awareness of care and treatment is higher, the effectiveness of building shared vision increases. Hospital ownership and location did not greatly influence building shared vision, as the β value was not statistically significant ($p >0.05$, as shown in Table 3).

The effects of personal characteristics of nursing staff on awareness of hospital accreditation and effectiveness of organizational learning effectiveness characteristics

To investigate the level of influence personal characteristics of the nursing staff exert over effectiveness of organizational learning, we performed standard multiple regression analysis with the following dependent variables; personal mastery, team learning and building

Measure	Personal Mastery		Team Learning		Building Shared Vision	
	Beta	t	**Beta**	t	**Beta**	t
Hospital Ownership						
Public Hospitals (Reference group)						
Proprietary Hospitals	0.069	1.322	-0.114	-2.503**	-0.051	-1.181
Private Hospitals	0.075	1.524	-0.076	-1.769*	-0.053	-1.305
Hospital level						
Medical Center (Reference group)						
Regional hospital	0.121	1.945*	-0.030	-0.551	0.037	0.723
District hospital	0.107	2.107*	0.044	0.984	0.00077	1.811*
Hospital location						
Northern (Reference group)						
Central	0.009	0.192	-0.028	-0.654	0.052	1.277
Southern	-0.091	-1.457	-0.044	-0.822	-0.020	-0.388
Eastern	-0.054	-1.062	0.037	0.841	0.027	0.629
Hospital Management Accreditation Awareness	0.229	3.843**	0.159	3.077**	-0.006	-0.119
Medical Care Accreditation Awareness	0.166	2.766**	0.476	9.128**	0.649	13.053**
Model explanation force change						
R^2	0.160		0.365		0.421	
Adj. R^2	0.144		0.352		0.410	
F	9.831		29.543		37.442	
P	0.000**		0.000**		0.000**	

Note: *** p<0.001 , **p<0.01 , *p<0.05

Table 3: Multiple regression analysis of hospital characteristics and accreditation effectiveness on organizational learning.

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shared vision. Our results of the regression analysis showed that after accounting for other variables, the predictive explanatory power (R^2) of the personal mastery in nursing staff was 20.5%, and the variance of pattern explanation was statistically significant (F=8.418; $p<0.001$). Factors that influence personal mastery in nursing staff included "education", "position", "hospital management accreditation awareness" and "medical care accreditation awareness". In terms of education, personal mastery was higher for college and graduate school levels, scoring 0.093 and 0.111, respectively, and were higher than junior college; education other than junior college, however, scored lower; non-management scored higher than management at 0.128. The factors "hospital management accreditation awareness" and "medical care accreditation awareness" were positively correlated with personal mastery (β=0.184, 0.171), indicating that when the awareness of hospital accreditation is high, so will the effectiveness of personal mastery. Our results showed that gender, age and years of employment did not greatly influence personal mastery, as the β value was not statistically significant ($p >0.05$).

The predictive explanatory power (R^2) of team learning in nursing staff was 37.2%, and the variance of pattern explanation was statistically significant (F=29.543; $p<0.001$). Factors that influence team learning in nursing staff included "years of employment", "education", "hospital management accreditation awareness", and "medical care accreditation awareness". In terms of years of employment, staff who worked 11-15 years and 16-20 years scored lower than teams that worked <5 years,

which were 0.122 and 0.094, respectively; teams with graduate school education scored lower than junior college teams at 0.091; the factors "hospital management accreditation awareness" and "medical care accreditation awareness" correlated positively with team learning (β=0.178, 0.458), indicating that when the awareness of hospital accreditation is high, so will the effectiveness of team learning. Gender, age and years of employment did not greatly influence team learning, as the β value was not statistically significant ($p >0.05$).

Lastly, the predictive explanatory power (R^2) of building shared vision in nursing staff was 43.9%, and the variance of pattern explanation was statistically significant (F=25.635; $p<0.001$). Factors that influence building shared vision in nursing staff included "years of employment" and "medical care accreditation awareness". In terms of years of employment, teams who have worked 16-20 years scored lower on building shared vision than teams with less than 5 years of work experience (0.125 lower); it was shown that medical care accreditation awareness correlated positively with building shared vision (β=0.649). Gender, age, education, job and hospital management accreditation awareness did not greatly influence building shared vision, as the β value was not statistically significant ($p >0.05$, as shown in Table 4).

Discussion

Hospital accreditation effectiveness and organizational learning issue have increasingly drawn more and more attention. However, there is a considerable deficiency in the empirical study from the nursing

Measure	Personal Mastery		Team Learning		Building Shared Vision	
	Beta	t	**Beta**	t	**Beta**	t
Gender						
Male(Reference group)						
Female	-0.007	-0.162	-0.046	-1.229	-0.046	-1.297
Age (years)						
<30(Reference group)						
31-40	-0.007	-0.129	0.078	1.545	-0.043	-0.900
41-50	0.049	0.810	0.072	1.334	0.027	0.528
>51	0.021	0.454	-0.003	-0.069	-0.220	-0.573
Years of employment						
<5(Reference group)						
6-10	-0.054	-1.051	-0.065	-1.427	-0.034	-0.793
11-15	-0.106	-1.975	-0.122	-2.557*	-0.047	-1.044
16-20	-0.099	-1.954	-0.094	-2.083*	-0.125	-2.934*
>21	-0.054	-1.042	-0.024	-0.518	-0.034	-0.768
Education						
Junior College (Reference group)						
College	0.093	2.112*	0.005	0.134	-0.047	-1.295
Graduate school	0.111	3.067*	-0.091	-2.181*	-0.079	-1.987
Other	-0.079	-1.800*	-0.043	-1.117	-0.037	-1.104
Position						
Management						
Non-management	0.128	0.162**	0.001	0.023	0.007	0.187
Hospital Management Accreditation Awareness	0.184	3.154**	0.178	3.438**	0.001	0.018
Medical Care Accreditation Awareness	0.171	2.945**	0.458	8.867**	0.649	13.310**
Model explanation force change						
R^2	0.205		0.372		0.439	
Adj. R^2	0.180		0.353		0.422	
F	8.418		19.377		25.635	
P	0.000**		0.000**		0.000**	
Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$						

Table 4: Multiple regression analysis of nursing staff individual characteristics and accreditation effectiveness on organizational learning.

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staff's perspective nationally or overseas. Consequently, the hospital management or government organization could not understand the connotation and current situation of the nursing staff on hospital accreditation and organizational learning. Thus the outcome of this study was important in terms of management practices.

We have found that the two dimensions of hospital accreditation, hospital management and medical care, significantly affect the factors of organizational learning: personal mastery and team learning, whether from the perspective of hospital characteristics or personal attributes of the nursing staff. However, we have also learned that only the medical care had influence on the building shared vision factor of the hospital accreditation awareness, which was similar to the results from Reeve et al. [35]. Nursing staff tend to pursue self-mastery and team learning when they have higher understanding of the contents of hospital accreditation, which in turn raises the effectiveness of organizational learning. Past learning experiences of the organization may produce varying degrees of influence on the directions taken by the organization [17,52].

Our investigation showed that although present day nursing staff is often tasked with high levels of work stress from factors such as current medical situation, social expectation, education and politics, the newly designed accreditation processes, methods and evaluation mechanisms are generally able to improve and increase the quality of medical care. We believe that by providing nursing staff a comprehensive set of accreditation knowledge will bring forth tangible benefits to the improvement of organizational learning.

Our results showed that nursing staff of the regional and district hospitals tend to have higher degrees of personal mastery than those serving in medical centers, which were similar to the results obtained by Malvery et al. [53]. The reason for this may be that, due to relatively smaller personnel resources in regional and district hospitals, nursing staff are tasked with wider responsibility, such as fulfilling requirements for hospital accreditation and participating in promoting hospital policies; therefore, they are more capable of improving self-mastery than nursing staff in medical centers.

We also found that in terms of hospital ownership, nursing staff from public hospitals have higher organizational learning than medical foundations or private hospitals; nursing staff from district hospitals are better suited to build shared vision with the organization than nursing staff in medical centers. Our results were similar to Chung [54]. Possible reasons for this may be that, in the medical care system, the Department of Health of Executive Yuan (DOH) assigns different missions and tasks to the hospitals ranked at the different levels, and thus nursing staff are provided with different options of career development by each hospital. In addition, in an effort to improve service quality of medical care for public hospitals, the DOH also actively promotes team learning, capacity for innovation and organizational re-structure, all of which could lead to the improvement of team learning ability in nursing staff. Secondly, since building a shared vision required constant interaction and dialogue between member of the organization to build consensus, our findings that district nursing staff tend to be more better at building shared vision may be due to smaller sized district hospitals having better organizational consensus and wills to build shared vision. Chen [55] reasoned that personal mastery, team learning and building shared vision correlate positively with degrees of organizational characteristics, and that medical centers tend to be more specialized than non-medical center – a finding that was consistent with the results of our study. In the related studies on the medical care industry in Taiwan, there was no literature focused on

the analysis of the differences in organizational learning of hospitals of various characteristics. We started from the nursing staff's viewpoint to study the hospital accreditation effectiveness. The results of this study demonstrated that the hospital accreditation effectiveness was an important factor to impact the organizational learning under various hospital levels and ownerships, which was one of the contributions of the present study.

The outcome of the study by Chen et al. [13] on the investigation of hospital accreditation criteria and accreditation operation in the execution aspect unraveled that demographics such as age, gender, highest education, employment position, job function, and years of employment in medical care and variables of experiences related to hospital accreditation could significantly impacted the awareness of accreditation operation in the execution aspect. The study conducted by Shih [56] also held the opinion that gender, job function, education, and years of employment were significantly different in the organizational learning aspect. This study further discovered that the hospital accreditation effectiveness was not significantly influential on organizational learning in terms of gender and age, which was different from that by Chen et al. [13]. Karp et al. [57] also proposed that the career and work attitude values of nursing staff at younger ages were different from those at older ages. However, those with bachelor or college degree, and management position paid more attention to self-learning. Moreover, one employee with better self-efficacy will give rise to higher motivation for learning and transfer. This finding is compatible with the theory put forward by Liao et al. [58], indicating that it will start with the trainee's inner aspect to boost his learning motivation.

From the perspectives of receiving new stimulations or organizational learning, as age and work experience grow, the nursing staff may look at their work environment or the collaboration with hospital accreditation policy differently to give rise to different organizational learning as the comprehensiveness of things to notice and the learning or knowledge accumulated varied. Since the implementation of hospital accreditation in Taiwan, the medical care quality has been improved. As the hospital accreditation effectiveness increases, the organization members will continue to learn in such circumstances with a higher degree of consent to the accreditation. The results of the present study indicated that the medical care accreditation awareness was an important factor for self-learning under various education and position, which was another contribution of this study.

The empirical analysis study showed that the hospital accreditation was effective to a certain degree for organizational learning. In addition to dialogue, collaboration, consensus, and technical accreditation promotions, it could aid the organization in exploring important subjects, gradually change the organization culture, and allow the accreditation to become the organizational supporting system and driving force, meeting the needs of hospital accreditation reform. Furthermore, the hospital accreditation should not be a short-lived organizational activity. The focus accreditation research, accreditation execution, and learning application processes must be utilized to study the important issues of the organization and incorporate the accreditation result in the organization goals to allow the hospital accreditation to become a persistent learning process. We suggest that subsequent researchers can expand their research subjects to medical, medical technology and nursing personnel in hospitals to explore the influential factors of motivation for learning and transfer, analyze the differences with that of administrative personnel and then conduct comparisons, in order to serve as reference for hospitals when organizing training programs available for employees of various

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different professional categories. Furthermore, this research also suggests the future researchers to further probe into the influence of each factor on learning results and effects of transfer, serving as reference for enhancing the training effects in the future to achieve the win-win goal for both the organization and employees.

The results from our evidence-based study showed that awareness of hospital accreditation exerts a certain degree of influence over organizational learning. Not only does accreditation improve skills such as dialogue, cooperation, consensus in organization members, but also helps the organization to investigate important issues and assist in organizational restructure. Hospital accreditation should not just be a temporary activity. It should be a dynamic process that feeds results from research, implementation and application back to the organization, helps improve organizational goals, and constitutes part of a sustained, long-term learning process for the organization.

We suggest that subsequent researchers can expand their research subjects to medical, medical technology and nursing personnel in hospitals to explore the influential factors of motivation for learning and transfer, analyze the differences with that of administrative personnel and then conduct comparisons, in order to serve as reference for hospitals when organizing training programs available for employees of various different professional categories. Furthermore, this research also suggests the future researchers to further probe into the influence of each factor on learning results and effects of transfer, serving as reference for enhancing the training effects in the future to achieve the win-win goal for both the organization and employees.

Limitations of the Study

This study was a cross-sectional survey and the results may only represent the accreditation and organization learning status of hospital nursing staff from a specific period; due to time constraints, limited manpower and the requirements of the IRB review for certain hospitals, the subjects were only limited to hospitals that agreed to take the survey, and thus the results could not explain the current situations in nationwide hospital nursing staff.

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