Development of Organizational Effectiveness Indicators for Delivery Departments at the Secondary Level Hospitals affiliated to the Thai Ministry of Public Health

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ABSTRACT

Background: The indicators for organizational effectiveness are significantly for organization development in competition situation which rapidly change.

Aim: To develop organizational effectiveness indicators for delivery departments at the secondary level hospitals using quantitative method.

Method: The samples of this study were 226 head nurses of delivery units in the 113 secondary level hospitals affiliated to the Ministry of Public Health in Thailand. The scale development process of organizational effectiveness indicators was using eight steps of scale development by DeVillis. The content validity testing by seven experts with content validity index (CVI) was 0.96 and item-objective congruence Index (IOC) was a range of 0.80-1.00. The reliability of the questionnaire in the form of Cronbach’s Alpha Coefficient was 0.94. The data were analyzed using confirmatory factor analysis.

Results: The components of organizational effectiveness indicators in delivery departments at the secondary level hospitals affiliated to the Ministry of Public Health consisted of four components with 24 indicators with the value of factor loading of each component between 0.69-0.93 at P-value <05. The sequence of components according to value by factor loading from highest to lowest value were as follows: (1) internal process (factor loading=0.93; $X=4.20$, $SD=0.42$), (2) strategic constituencies satisfaction (factor loading=0.77; $X=4.18$, $SD=0.43$), (3) goal accomplishment (factor loading=0.75; $X=4.11$, $SD=0.47$), and (4) resource acquisition (factor loading=0.69; $X=4.07$, $SD=0.49$). The confirmatory factor analysis model of organizational effectiveness of delivery departments was congruent with the empirical data (CMIN/df=1.46, GFI=1.00, AGFI=0.97, RMSEA=0.04). This model accounted for 58.70% of the variance in the organizational effectiveness in delivery departments at the secondary level hospitals affiliated to the Ministry of Public Health.

Conclusion: This study demonstrated the development of organizational effectiveness indicators for delivery departments which will be an enable the organizational effectiveness training for division head nurses of delivery departments, and can be used to measure organizational effectiveness of delivery departments affiliated to the Ministry of Public Health.

Keywords: Organizational Effectiveness; Delivery Departments; Secondary level hospitals.

INTRODUCTION

According to the national strategic plan policy of Ministry of Public Health of Thailand identified that it will be public health 4.0 which supports the future of urban society, including trade and investment enhancement, technological advancement, especially reducing access to health systems. Heath organization should be adapt strategic planning of excellence (1) promotion and
prevention excellence; (2) service excellence; (3) people excellence; and (4) governance excellence. The health organizations should provide quality and safety services, including clients and health service providers satisfaction. The organizational effectiveness is the most important factors, it makes the organization survive in a changing of socioeconomic environment. The evaluation of organizational effectiveness is necessary as perceiving the level of organizational effectiveness in order to understand the way organizations achieve their goals and changing the strategic planning appropriately. The nursing organizations, the delivery units’ organizational effectiveness is important as it leads to enhancing the quality of nursing services, higher customer satisfaction, and higher employee retention, profitability, and the creation of competitive advantages for hospitals and finally business success.

At present, the organizational effectiveness indicators have not been studied in delivery units which have many risk and emergency situations causing maternal and neonatal mortality rate including medical prosecution. From a literature review of the organizational effectiveness concepts, Kinicki and Kreitner’s organizational effectiveness concept identified the components of organizational effectiveness consisted of four components as (1) goal accomplishment; (2) resource acquisition; (3) internal process; and (4) strategic constituencies satisfaction. To achieve organizational effectiveness, business leaders need to focus on aligning and engaging staff, the human resource management systems, and the structure and capabilities related to organizational strategies, its results presented in higher financial performance. To fill the gaps of the organizational effectiveness studies in the field of delivery units, the aim of this study was to develop organizational effectiveness indicators for delivery departments at the secondary level hospitals.

METHOD

Population and Sample

The population consisted of 330 head nurses of delivery units from the secondary level hospitals affiliated to the ministry of public health from 165 hospitals from the 12 networks of Health Service Network in Thailand. The sample size was determined with a ratio of 10 respondents per parameter which was considered as the most appropriate. A stratified random sampling was used by sampling from the Health Service Network’s 12 networks, and simple random sampling and sample size calculation resulted in 226 head nurses of delivery units from 113 community hospitals.

Scale Development

The researcher developed and tested the quality of organizational effectiveness indicators of delivery units based on concept’s Kinicki and Kreitner, along with Burn and Grove’s method of research instrument development with eight steps as follows:

1. Identifying the concepts of the variables

Selecting organizational effectiveness concepts that could be used in the research and building an understanding of organizational effectiveness, so the concept’s Kinicki and Kreitner was used in this study. These were composed of four components as (1) goal accomplishment; (2) resource acquisition; (3) internal process; and (4) strategic constituencies satisfaction.

2. Defining the concept

Defining each component of organizational effectiveness of delivery units which were (1) goal accomplishment was achieving the delivery unit performance; (2) resource acquisition was the providing of resources and experts for professional nurses; (3) internal process was planning, guideline for quality nursing service enhancement, concerning safety and critical service management; and (4) strategic constituencies satisfaction was job satisfaction enhancement of nurses staff and stakeholders and good relationship with each other.

3. Designing of a scale

Designing a scale to be used to consider each indicator for measuring organizational effectiveness for delivery units of the secondary level hospitals affiliated to the Thai Ministry of Public Health. The scale must correspond with the objective of the research and content of the items. A measurement scale was designed in the form of a 5-point Rating scales that would be used to consider each of the indicators for measuring organizational effectiveness. The scale had labels ranging from “most real”, “real”, “not sure”, “unreal” and “most unreal”.


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4. Seeking item review

Seeking item was reviewed from a team of subject matter experts with knowledge and experience in organizational effectiveness of delivery units, four expertises in the area, and with three experts in the field of survey instrument development. The content validity index (CVI) and item-objective congruence index (IOC) were analyzed.7

5. Conducting preliminary item tryouts

Conducting a preliminary pretest of the items with 30 head nurses of delivery units of the secondary level hospitals was affiliated to the Ministry of Public Health of Thailand. Data were used to calculate indicators reliability by using Cronbach’s Alpha Coefficient to obtain internal consistency of the overall scale, each component’s reliability, item-item correlations, item-item correlations, and alpha-if-item deleted reliability coefficients.8

6. Performing field tests

The sample group in this study was composed of 226 head nurses of delivery units based on the scale development concept of DeVillis.8

7. Conducting construct validity studies

The data was collected from head nurses of delivery units. The construct validity was using confirmatory factor analysis.

8. Evaluating the reliability of the scale

The reliability of the scale was analyzed in the form of Cronbach’s Alpha Coefficient.

Data Analysis

The data were analyzed using the package computer programs: (1) descriptive statistics were used to determine means and standard deviations; (2) confirmatory factor analysis was performed to test for the goodness of fit of the structural model of the factors, weights were assigned to constructing the indicators and empirical data to determine the weights of the main variables used in constructing the indicators; and (3) Cronbach’s Alpha Coefficient provided a measure of the internal consistency of the scale and describes the extent to which all the items in a test measure the same construct.10

FINDINGS

Two hundred twenty-six head nurses of delivery units responded to answer the self-administered questionnaire. Most of the participants were female (98.20%) and a half were aged 46–55 years (45.60%). Most of them graduated with bachelor degrees (85.40%) and having experiences in delivery management within a range of 5–10 years (37.10%).

The research found the 24 indicators of four components of delivery-unit effectiveness, as follows: (1) goal accomplishment (4 indicators); (2) resource acquisition (5 indicators); (3) internal process (7 indicators); and (4) strategic constituencies satisfaction (8 indicators). The measurement scale was designed in the form of a 5-point Rating scales that would be used to consider each of the indicators for measuring the delivery units’ organizational effectiveness. The scale had labels ranging from “most real”, “real”, “not sure”, “unreal” and “most unreal”. Item content for the scales was selected that corresponded to the objective being studied by the researcher and the indicators.7

Item reviews obtained a content validity index (CVI) of 0.96 and item-objective Congruence Index (IOC) with a range of 0.80-1.00 from seven subject matter experts. The preliminary tryout of the items was conducted with 30 head nurses of delivery units. Data were used to calculate the instrument’s components reliability by using Cronbach’s Alpha Coefficient. The internal consistency of the goal accomplishment component was 0.84; the resource acquisition component was 0.81; the internal process component was 0.92; strategic constituencies satisfaction component was 0.90 and the overall reliability was 0.94. The corrected item-total correlation was at 0.41-0.82. The item-item correlation matrix was at 0.30-0.70 for more than 50% of the correlations, and alpha if item was deleted ranged from 0.93-0.95, showing that the scale’s internal consistency value was at a satisfactory level.

Researchers were able to collect data from 226 completed forms, and to conduct statistical data analysis by performing confirmatory factor analysis. Pursuant to the confirmatory factor analysis found the organizational effectiveness model to be consistent with the evidence-based data as a perfect fit by considering CMIN/df < 3, GFI > 0.90, AGFI > 0.90, RMSEA <0.059,11. This shows that the main hypothesis was accepted.
The research model fitted well to empirical data. The result of factors score was found that the most of four important components was administrative potential of organizational effectiveness for the delivery units by internal process (factor loading=0.93; $\bar{X}$ =4.20, SD=0.42), strategic constituencies satisfaction (factor loading=0.77; $\bar{X}$ =4.18, SD=0.43), goal accomplishment (factor loading=0.75; $\bar{X}$ =4.11, SD=0.47), and resource acquisition (factor loading=0.69; $\bar{X}$ =4.07, SD=0.49), respectively (Figure 1, Table 1). The causal model has congruence with the empirical data (CMIN/df=1.46, GFI=1.00, AGFI=0.97, RMSEA=0.04). The model accounted for 58.70 % of the variance in the organizational effectiveness in delivery departments (Figure 1).

**Table 1: The organizational effectiveness indicators for the delivery units of the secondary level hospital affiliated to the Thai Ministry of Public Health**

<table>
<thead>
<tr>
<th>Component name</th>
<th>$\bar{X}$</th>
<th>SD</th>
<th>Component name</th>
<th>$\bar{X}$</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Goal accomplishment</td>
<td>4.11</td>
<td>0.47</td>
<td>II. Resource acquisition</td>
<td>4.07</td>
<td>0.49</td>
</tr>
<tr>
<td>1. Reviewing the outcomes of the work.</td>
<td>4.16</td>
<td>0.58</td>
<td>5. Having a monitor system for medical supplies in a state of readiness.</td>
<td>4.29</td>
<td>0.64</td>
</tr>
<tr>
<td>2. Reviewing the progress of the operations.</td>
<td>4.14</td>
<td>0.55</td>
<td>6. Allocating the budget for quality and adequacy of medical supplies and materials.</td>
<td>4.16</td>
<td>0.66</td>
</tr>
<tr>
<td>3. Organizing an organization for policy implementation each units.</td>
<td>4.13</td>
<td>0.60</td>
<td>7. Defining the qualifications of personnel in accordance with the job.</td>
<td>4.08</td>
<td>0.54</td>
</tr>
<tr>
<td>4. Having the goals achievement.</td>
<td>4.01</td>
<td>0.49</td>
<td>8. Allocating the budget for professional nurses to be trained and develop their expertise in the job.</td>
<td>4.01</td>
<td>0.78</td>
</tr>
<tr>
<td>9. Providing nursing staff workload appropriate for the proportion of clients.</td>
<td>3.80</td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III. Internal process</td>
<td>4.20</td>
<td>0.42</td>
<td>IV. Strategic constituencies satisfaction</td>
<td>4.18</td>
<td>0.43</td>
</tr>
<tr>
<td>10. Using nursing process as a tool.</td>
<td>4.33</td>
<td>0.55</td>
<td>17. All level of nursing staff must be involved in the operation of the delivery unit.</td>
<td>4.38</td>
<td>0.57</td>
</tr>
<tr>
<td>11. Having a standardized practice.</td>
<td>4.28</td>
<td>0.52</td>
<td>18. Nursing staff have good relationship each other</td>
<td>4.22</td>
<td>0.59</td>
</tr>
<tr>
<td>12. Readiness for taking emergency situations</td>
<td>4.22</td>
<td>0.53</td>
<td>19. Nursing staff have good relationship with clients.</td>
<td>4.21</td>
<td>0.52</td>
</tr>
<tr>
<td>13. Having effective risk management system.</td>
<td>4.16</td>
<td>0.56</td>
<td>20. Having a good teamwork.</td>
<td>4.20</td>
<td>0.59</td>
</tr>
<tr>
<td>14. Providing operational plan consistent with the strategy and vision of the nursing organization</td>
<td>4.19</td>
<td>0.55</td>
<td>21. The personnel should be recognition from clients.</td>
<td>4.18</td>
<td>0.61</td>
</tr>
<tr>
<td>15. Operating according to the plan</td>
<td>4.10</td>
<td>0.53</td>
<td>22. The level of clients’ satisfaction meet the goals of the delivery units.</td>
<td>4.17</td>
<td>0.56</td>
</tr>
<tr>
<td>16. Having effective communication systems</td>
<td>4.09</td>
<td>0.53</td>
<td>23. Stakeholders are satisfied with the delivery units’ performance.</td>
<td>4.06</td>
<td>0.53</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24. Staff are satisfied in the job.</td>
<td>3.99</td>
<td>0.54</td>
</tr>
</tbody>
</table>
DISCUSSION

The indicators for organizational effectiveness in delivery departments composed of four components and 24 indicators. Concerning, the goal accomplishment is the most widely used effectiveness criterion for organizations. Key organizational results or outputs are compared with previously stated goals or objectives. Effectiveness, relative to the criterion of goal accomplishment, was gauged by how well the organization meets or exceeds its goals. The organizations as delivery departments should be organized to facilitate policy implementation in each delivery unit, reviews the progress of the operations, and the results of the work. From the study Kamolbutr found that the general hospital affiliated to Thai Ministry of Public Health was high level of organizational effectiveness in the aspect of goal accomplishment component.

Resource acquisition, this second criterion was defined as the qualifications of nursing staff related to nursing tasks, appropriated nursing workload, allocating the budget for nursing training, allocating the budget for quality and adequacy of medical supplies and materials, and monitor system for medical supplies were similar to the study from Khaewpordtook. and Ratchukul found that the level of organizational effectiveness in general hospitals and each component of its were in the high levels. Human resources, budget and materials were potential components for the organization’s operations. The medical devices were readiness and the monitor system was efficient maintenance.

Internal process was referred as the “healthy systems” approach. An organization will be a healthy system if it has effective communication systems, employee loyalty and commitment, job satisfaction, and trust prevail. The delivery units should be three priorities on using nursing process as a tool, having standardized practices, and readiness for taking emergency situations whereas the previous research studies in general units put priorities on the operating with efficient management and planning, having effective communication and risk management.

Lastly, the present study found that strategic constituencies satisfaction was stakeholder satisfaction. To achieve satisfactions, the head of the delivery units should put priorities on nursing staff involvement, interpersonal relationship of nursing staff each other and with clients, and a good teamwork whereas Khaewpordtook and Ratchukul who studied in general units found that the component of strategic constituencies satisfaction was in the first rank of components with high level.

CONCLUSION AND IMPLEMENTATION

The organizational effectiveness components and indicators of delivery departments at the secondary level hospitals affiliated to the Thai Ministry of Public Health was being construct validity, accuracy, and consistency with Kinicki and Kreitner’s organizational effectiveness concept. The head of delivery units should put priority according to the sequence of factor loading of each component from highest to lowest value being (1) internal process; (2) strategic constituency satisfaction; (3) goal accomplishment; and (4) resource acquisition. This study found the new knowledge of the organizational effectiveness indicators for delivery departments, the head nurses of delivery units should be trained to use this organizational effectiveness measurement for delivery departments affiliated to the Ministry of Public Health.

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Conflict of Interest: The authors have no conflicts of interest.

Ethical Clearance: Ethical Clearance was taken from the ethical committee of Christian University of Thailand (registration no. N.38/2559) on June 3, 2017. The protected samplings were obtained as personal information and ethical concerns which includes informed consent and maintaining confidentiality. They had the right to cancel participation in the study at any time without any impact on participants.

REFERENCES