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The Influence of Administrative Factors on Performing Primary Care Unit Standard Evaluation

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\textbf{Abstract}

The aim of this research was to study individual attributes and administrative factors that influence Primary Care Units (PCUs) standard evaluation by the chiefs of PCUs in Khon Kaen province, Thailand. A total of 172 respondents was involved utilizing systematic sampling. Researchers employed cross sectional descriptive designed questionnaire as an instrument to collect data. Data collection was implemented after conducting a pilot study and ethical investigation. The methods of analysis employed including percentage, mean, standard deviation, Pearson correlation and Stepwise multiple regression analysis. Quantitative findings indicated that chiefs of PCUs were provided high administrative resource (mean score = 3.50), with two extremely high resources namely information technology and time with a mean score of 3.98 and 3.59 respectively. However, the lowest mean score were personnel (man) (mean score = 3.25). Findings from in-depth interviews indicated that health personnel, who work in PCUs should be a multidisciplinary team consisted of physician, chief of PCUs public health technical officer, registered nurses, public health officer and a dental public health officer. The PCUs standard evaluation indicated a low positive relationship with income factors at the significant level as 0.001, \( r = 0.289 \). In addition, personnel (man), money, materials, information technology and time have a moderate positive relationship with \( r \) value as 0.465, 0.569, 0.616, 0.555 and 0.617 respectively. Finally, findings showed that there are four significant predictors that successfully contributed 58.90 percent of the total variance of PCUs standard evaluations. The four predictors are time, materials, information technology and income.

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1. Introduction

The main purpose of establishing Primary Care Units (PCUs) or sub-district health promoting hospitals are to provide various health services including medical treatment, health promotion, disease prevention and health rehabilitation in rural communities (Ministry of Public Health, 2009). The main purpose has been emphasized as an essential role in Thai health systems. This new focus of health centers or sub-district health promoting hospitals have been introduced at the same time of Universal Coverage Scheme in year 2001 (Hasuwankit, 2007). As a result, the various health facilities are found in every sub-district of Thailand in order to ensure that the accessibility of healthcare is a guarantee. These provided services that are based on family medicine and proactive principles that covered all the four dimensions of healthcare. As locating in a very heart of the community, PCUs have established strong relationships with Thai people.

Even though there are a number of advantages by having many PCUs, many PCUs are still suffering from drawbacks nowadays. Their potential service and management system are unable to achieve the primary goal and purpose. Consequently, many PCUs have failed to meet their expected performance. In order to improve the healthcare system of the community as what is expected by Ministry of Public Health, guidelines on quality development for PCUs have been introduced. The PCUs standard evaluation introduced by the Ministry of Public Health in year 2009 was one of the vital policy actions. PCUs standard evaluation and quality assurance consisted of four categories, namely service standard, management standard, academic standard and evaluation standard (Bureau of Health Administration, 2007). The core of this plan was to transform all the health centers, even the smallest healthcare facilities in Thailand, functioning as PCUs into district health promoting hospitals within the period of three years (Suphawong et al., 2009).

2. Problem statement

Khon Kaen province covered 26 districts in the northeast of Thailand. The standard evaluation of PCUs comprised of service standard, management standard, academic standard and evaluation standard. Among these four categories, evaluation has been recognized as one of the most essential tools for administrators. It can be utilized to improve and develop the quality of human resource. Furthermore, evaluation also provides administrators information related to their strengths and weaknesses of their units. In addition, it helps administrators to make the right reactions and sound decisions. Besides, information for self-evaluation also provides the units a chance of self-awareness which wound eventually lead to self-development. Chiefs of PCUs as top administrators are expected to perform precise evaluation.

ICCI cycle as a core of evaluation cycle encompassed indicator setting, collecting data, comparing data and improving process (Bureau of Health Administration, 2007). Hunt and Osborn (2003) explained that factors affecting personal performance are individual attributes, work effort and organizational support. A previous study carried out by Meeprom (2008) indicated that certain individual attributes that affecting the administration based on the Good Government scheme of the PCUs chiefs in Sakon Nakhon province. In addition, Bouphan (2009) proposed that personnel (man), money, materials, time and information technology are the key administrative resources of success in organization if they are combined appropriately. In year 2008, a report made by Khon Kaen Provincial Public Health Office revealed that there is 12.88 percent of PCUs failed to meet the fourth standard of categories in performance evaluation (Khon Kaen Provincial Public Health, 2008).

3. Purpose of the study

The main purpose of this study is to study individual attributes and administrative factors that are influencing performance in PCUs are standard evaluation including the problems and obstacles that occurring during the evaluation process by the chiefs of PCUs in Khon Kaen province, Thailand.
4. Methodology

Researchers employed a cross sectional descriptive design to study individual attributes and administrative resources that are affecting on performance of PCUs standard evaluation by the chiefs of PCUs in Khon Kaen province, Thailand. This study encompassed two phases including mixed mode method, namely quantitative using questionnaire as instrument and qualitative using in-depth interview guidelines as instrument.

A total of 172 chiefs of PCUs from 26 districts of Khon Kaen province were selected to participate in the first phase of the study. Systematic sampling method was employed at the first phase. The duration of the study was from June 2011 until February 2012. Researchers utilized a structural questionnaire which developed by researchers as research instrument to collect data. After the instrument has been examined and adjusted that was undergone a comprehensive validation process by three experts, the instrument was piloted for testing the reliability. Cronbach’s alpha coefficient of 0.95 indicated a good and acceptable reliability. The second phase of this study involved 12 key informants by using a purposive sampling method in order to obtain deep insights regarding PCUs standards.

5. Results of the study

Samples profile showed that the majority of the samples are female (51.7%) which is slightly higher than male (48.3%). The average age is 43.8 years old (S.D. = 6.96) and most of them are married (85.8%). There is 89.2 percent of them possessed at least a Bachelor’s degree. Their average income is approximately 24,424 Baht permonth. They have approximately an average of 13.1 years working experience as the chief of PCUs. In addition, they have an average 4.2 years of being assessor in the evaluation process according to PCUs standard evaluation and quality assurance.

Administrative resource, as a whole, was high (mean value = 3.50 ± 0.61). The two highest resources were information technology and time (mean value = 3.98 ± 0.68 and 3.59 ± 0.68) respectively. On the other hand, the lowest mean score was personnel (man) (3.25 ± 0.78). The findings from the in-depth interviews indicated that health personnel, who work in PCUs, should be a multidisciplinary team consisted of a physician, chief of PCUs, public health technical officer, registered nurses, public health officer and dental public health officer.

The level of performing PCUs standard evaluation was high (mean value = 3.65 ± 0.58). When investigated in detail at each item, the levels of performance appraisal and self-assessment were also high (mean value = 3.66 ± 0.63 and 3.65 ± 0.62) respectively. However, the findings from the in-depth interviews indicated that knowledge and continuity of actions were raised as problematic issues.

Table 2 presented the Pearson correlation coefficient between the personal attributes and administrative factors with performing PCUs standard evaluation. Based on De Vaus’s (2002) interpretation of correlation coefficients in Table 1, the correlation results between the personal attributes and administrative factors with performing PCUs standard evaluation showed a significant relationship (p<0.01), with strength of association varying from low to moderate, moderate to substantial and substantial to very strong and positive.

<table>
<thead>
<tr>
<th>Strength of association</th>
<th>Negative</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low to moderate</td>
<td>-0.29 till -0.10</td>
<td>0.10 till 0.29</td>
</tr>
<tr>
<td>Moderate to substantial</td>
<td>-0.49 till -0.30</td>
<td>0.30 till 0.49</td>
</tr>
<tr>
<td>Substantial to very strong</td>
<td>-0.69 till -0.50</td>
<td>0.50 till 0.69</td>
</tr>
<tr>
<td>Very strong</td>
<td>-0.89 till -0.70</td>
<td>0.70 till 0.89</td>
</tr>
<tr>
<td>Near perfect</td>
<td>-0.99 till -0.90</td>
<td>0.90 till 0.99</td>
</tr>
<tr>
<td>Perfect relationship</td>
<td>-1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Correlation analysis revealed that low income would have a low positive relationship with the performance of PCUs standard evaluation at a significant level of 0.001 (r = 0.289, p-value < 0.001). In addition, personnel (man), money, materials, information technology and time have a moderate and positive relationships with the
performance PCUs standard evaluation at significant level of 0.001 (r = 0.465, p-value < 0.001; r = 0.569, p-value < 0.001; r = 0.616, p-value < 0.001; r = 0.555, p-value < 0.001; r = 0.617, p-value < 0.001) respectively.

As indicated in Table 2, performance PCUs standard evaluation by the chiefs of PCUs was significant, positive and substantial to very strongly correlated with four administrative factors namely time (r = 0.617; p<0.01), materials (r = 0.616; p<0.01), money (r = 0.569; p<0.01), and information technology (r = 0.555; p<0.01). In addition, it was moderate to substantial correlated with personnel (man) (r = 0.465; p<0.01). Furthermore, it was just low to moderate correlated with personal attribute that is income (r = 0.289; p<0.01). This means that, to a substantial to very strong extent, an increase in the money, materials, information technology and time is associated with an increase in the level of performing PCUs standard evaluation; and to a moderate to substantial extent, an improvement in personnel (man) is associated with an increase in the performing PCUs standard evaluation.

Table 2. Correlation coefficient between personal attributes and administrative factors with performing PCUs standard evaluation.

<table>
<thead>
<tr>
<th>Performing PCUs standard evaluation (Y)</th>
<th>r value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>0.289</td>
<td>0.001</td>
</tr>
<tr>
<td>personnel (man)</td>
<td>0.465</td>
<td>0.001</td>
</tr>
<tr>
<td>Money</td>
<td>0.569</td>
<td>0.001</td>
</tr>
<tr>
<td>Materials</td>
<td>0.616</td>
<td>0.001</td>
</tr>
<tr>
<td>Information technology</td>
<td>0.555</td>
<td>0.001</td>
</tr>
<tr>
<td>Time</td>
<td>0.617</td>
<td>0.001</td>
</tr>
</tbody>
</table>

To identify the significant predictor for performing PCUs standard evaluation, a Stepwise regression and analysis was carried out. In this analysis, the personal attributes and administrative factors were treated as predictor variables, while performing PCUs standard evaluation was treated as the dependent variable. The purpose of estimating this regression equation was to identify the personal attributes and administrative factors that have significant impact on performing PCUs standard evaluation that is the personal attributes and administrative factors that constitute the predictors for performing PCUs standard evaluation. In this analysis, the size of the standardized coefficient (β) directly indicates the importance of these predictors relative to one another. In the context, time (β = 0.216) was the most important predictor, followed by materials (β = 0.302), information technology (β = 0.241), and income (β = 0.137), in that order. As shown in Table 3, the summary statistics of the estimated regression equation show the variables for which the coefficients are statistically significant.

Furthermore, Stepwise multiple regression analysis indicated that time, materials, information technology and income have significantly predicted the performing PCUs standard evaluation at 58.9 percent (R² = 0.589, p-value = 0.046, p-value = 0.004, p-value = 0.005 and p-value = 0.048) as shown in Table 3. The estimated regression equation was significant at 0.01 (p<0.01), implying that all the four predictor variables (time, materials, information technology and income) that have an impact on performing PCUs standard evaluation; thereby qualifying these to be the predictors for the latter. In brief, these four variables have a linear relationship with performing PCUs standard evaluation. The R² being 0.589 in Table 3 shows that the impact of time was 48.0 percent, materials was 5.7 percent, information technology was 3.2 percent, and income was 2.0 percent. In conclusion, the four variables account for 58.9 percent of variation in the dependent variable. The following multivariate linear regression model shows the relationship between the predictor variables on the dependent variable.

Table 3. Stepwise multiple regression analysis of performing PCUs standard evaluation.

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>β</th>
<th>t</th>
<th>p</th>
<th>R</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>0.037</td>
<td>0.216</td>
<td>1.999</td>
<td>0.046</td>
<td>0.617</td>
<td>0.480</td>
</tr>
<tr>
<td>Materials</td>
<td>0.047</td>
<td>0.302</td>
<td>2.999</td>
<td>0.004</td>
<td>0.661</td>
<td>0.537</td>
</tr>
<tr>
<td>Information technology</td>
<td>0.042</td>
<td>0.241</td>
<td>2.839</td>
<td>0.005</td>
<td>0.685</td>
<td>0.569</td>
</tr>
<tr>
<td>Income</td>
<td>0.029</td>
<td>0.137</td>
<td>2.009</td>
<td>0.048</td>
<td>0.698</td>
<td>0.589</td>
</tr>
</tbody>
</table>
The prediction equation is demonstrated the performing PCUs standard evaluation by the chiefs of PCUs in Khon Kaen as follows:

Unstandardized score: \( \hat{Y} = 0.189 + 0.037 (X_1) + 0.047 (X_2) + 0.042 (X_3) + 0.029 (X_4) \)

\( \hat{Y} \) = Performing PCUs standard evaluation

\( X_1 \) = Time

\( X_2 \) = Materials

\( X_3 \) = Information technology

\( X_4 \) = Income

The open-ended questions in the questionnaire also pointed out that most of the problems in performing PCUs standard evaluation involved with two administrative resources namely personnel (man) and money (19.07% and 16.66%) respectively. The less problematic administrative resource was time (12.84%).

The findings from the in-depth interview also provided insights into administrative factors. The interviewees suggested that well planned and clear policies as well as sufficient materials and budget are the important factors in order to achieve the goals of the performing PCUs standard evaluation by the chiefs of PCUs in Khon Kaen province. Furthermore, they have suggested that the PCUs standard evaluation should be integrated into general practices, so it will let them to have the opportunities to concern and practice it regularly. Additionally, the head of primary care units, there was a service ability limit in PCUs standard evaluation practice according to its characteristics. Moreover, there should be a person in charge of the job with properly defined workloads. Positions and wages should be analyzed. Finally, the recognition by supervisors was considered necessary and important

6. Discussion

Evaluation is an essential tool for those who work as an administrator. Primary care units are supposed to be evaluated and the chiefs of PCUs who play a crucial role in the evaluation process. The findings from this present study revealed that time, materials, information technology and income significantly influence the performing PCUs standard evaluation by the chiefs of PCUs. According to Schemerhorn et al. (2003), individual attributes, work effort and organizational support are regarded as the factors that influence personal performance. Organizational supports in term of administrative resources can help administrators to perform challenging tasks more effectively.

The chiefs of PCUs required time, materials and information technology to perform PCUs standard evaluation as the nature of the task focusing more on data collection and process management. Obviously, evaluation required certain instruments to complete the process. In addition, Luthans (2011) concluded that payment has been long known as an important factor that influence job satisfaction which has a close and complicate relationship with productive works. Income can serve as a positive reinforcement for most personnel and effectively affecting individual, group and organizational performance. The findings from this study concluded that the income of PCUs chiefs seems to have an influencing factor on performing PCUs standard evaluation.

To analyze how personal attributes and administrative factors, Stepwise multiple regression analysis is performed. The result pointed out that there are four independent factors affecting performing PCUs standard evaluation and be able to fit the predictive model. The predictive model is shown as: \( Y = 0.189 + 0.037 \) (time) + 0.047 (materials) + 0.042 (information technology) + 0.029 (income).

It reveals that only independent factors affecting on performing PCUs standard evaluation with statistical significant level 0.05 are chosen into the model. They are time, materials, information technology and income. These four independent factors can predict the performing PCUs standard evaluation by the chiefs of Primary Care Units in Khon Kaen province at 58.9 percent.

This finding corresponds to the findings of the studies done by Meeprom (2008) indicated that certain individual attributes that affecting the administration based on the Good Government scheme of the PCUs chiefs in Sakon Nakhon province. In addition, Bouphan (2009) proposed that personnel (man), money, materials, time and information technology are the key administrative resources of success in organization if they are combined appropriately. In 2008, a report made by Khon Kaen Provincial Public Health Office revealed that there is 12.88
percent of PCUs failed to meet the fourth standard category that is evaluation (Khon Kaen Provincial Public Health, 2009).

The suggestion from the study indicated that Gantt chart and Program Evaluation and Review Technique (PERT) can be used as means of controlling to improve PCUs’ effectiveness. Provincial public health office, district health office and local administrative organization should provide PCUs sufficient budget and present-day equipment which can be used to improve their operation. In addition, the chiefs of PCUs should be more exposed to information technology. Certain trainings such as computer skills should be provided in order to improve their effectiveness especially in data analyzing and evaluating.

Acknowledgements

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References