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Retrospective Study: Lessons Learned and Key Success Factors in the Promotion of the Production of Thai Traditional Medicines in Public Hospitals

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ABSTRACT After the proclamation of the Alma-Ata Declaration, the Ministry of Public Health responded to WHO's recommendation by including traditional medicine policy to promote the use of medicinal plants in primary health care (PHC) in the Fourth National Economic and Social Development Plan (1977-1981). This research focused on the retrospective study of the lessons learned from the promotion of the production of Thai traditional medicines (TTM) in public hospitals in Thailand (2008-2013) and aimed to identify key success factors in TTM production development. According to the quantitative study among inexperienced public hospitals, the key success factors ranked from highest to lowest were budget, management, infrastructure, personnel development and networking. In contrast, the qualitative study among experienced public hospitals, the key success factors ranked from high to low were networking, personnel development, management, budget, and infrastructure, respectively. The discrepancy could be explained that, among the experienced hospitals, networking was the key driver and the most important sources of learning. The networking allowed the exchanges of both tacit and explicit knowledge that led to comprehensive understanding and know-how to effectively execute the TTM production project. Thus, the capacity of the project leader to influence team members and management personnel was simultaneously developed. In conclusion, the effectiveness of the budget spending and suitable infrastructure should be created by the project leader to successfully support the TTM production.

Keywords: Thai traditional medicines, Production, Key success factors, Public hospitals

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Introduction

According to the revival of Thai traditional medicine (TTM) in 1978, various aspects and practices of TTM have been promoted for health promotion of the Thai people with the hope to fully integrate TTM into the National Health Service System, for example: medicinal plants and traditional medicines.[1-3] TTM was neglected for over 60 years until its revival began in the late 1970s as the World Health Organization (WHO) had urged its member states to include medicinal plants in their primary health care (PHC) schemes. In October 2002, the Department for the Development of Thai Traditional and Alternative Medicine was established as a new department under the Ministry of Public Health[2], comprising the Institute of Thai Traditional Medicine, the Division of Alternative Medicine and the Office of the Secretary; currently, it is the Department of Thai Traditional and Alternative Medicine (DTAM).[2] Therefore, the government has been committed to promoting TTM as another means of health care for Thai people.[4-6] Thai public hospitals have responded and started to produce their own TTM products. However, in the beginning, the factory infrastructure and quality management system were poorly developed.[7] To resolve such a situation, the "Programme on the Promotion of the Production of Thai Traditional Medicines in Thai Public Hospitals" was initiated by DTAM during the period 2008–2013. The development of herbal regulations was at the international level. So DTAM planned to improve and upgrade the factory infrastructure and quality management system of the public hospitals according to the recognized standards, for example, ASEAN GMP, WHO GMP and GMP PIC/s. In the beginning phase, DTAM adopted the WHO GMP standards in 2013. The pilot project covered 47 public hospitals in five regions of the country: the North, the Northeast, the East, the South and the Central Parts. The project was an extension of the Project on TTM production promotion in Thai public hospitals for the period 2008–2013. Of all the 47 public hospitals, only 27 could adopt the WHO GMP standards, another 10 requested additional support from DTAM, and the rest were still at the beginning stage. So DTAM confirmed to conduct the research study to find out the key success factors in TTM production development in 37 public hospitals and to use the lessons learned from the TTM production promotion in Thai public hospitals between 2008 and 2013. The key success factors should be the guidelines for all other public hospitals which were in the process of adopting the WHO GMP standards. However, after the implementation according to the plan, there was a dramatic increase in the number of public hospitals that had met the WHO GMP standards. The consequence was the more acceptances in the Thai traditional medicines produced by the public hospitals. Besides, more and more Thai traditional medicines or formulas have been accepted and included in the National List of Essential Medicines.

Methodology

This cross-sectional study used both qualitative and quantitative methods. The qualitative part was designed for attaining a preliminary conceptual framework and proposing a development model; and qualitative data were collected using in-depth interviews

with 10 hospital directors, who were involved in the development of TTM production in public hospitals, including planning, organization development, learning processes, networking processes and resources allocation-in order to pursue as many variables as possible that were linked to the TTM production and development. All the 10 hospital directors (executives) could manage the TTM production very well and the system had successfully met WHO GMP standards.

The quantitative part included a regression analysis designed to confirm the consistency and explain the ability of the proposed model. The unit of analysis included the personnel who were involved in TTM production in the 27 public hospitals. The research period was between November 2013 and February 2014.

After literature review and reliability testing of 30 questionnaires,[8-11] the researcher conceptualized and proposed the model. Then the model was validated by experts before being distributed for further implementation. The proposed model included independent variables (physical structure, operational personnel, networking, budget and management) and a dependent variable (capability of TTM production according to international standards). The dependent variable was operationalized according to the WHO GMP standards and the questionnaire was written in the Thai language to avoid misinterpretation of the meaning of the capability of TTM production within the scope of international production. The questionnaire was validated by experts and with reliability testing; and its Cronbach's alpha was 0.890, which was deemed as good. The Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group; and it can be written as a function of the number of test items and the average inter-correlation among the items.[12]

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum V_i}{V_t}\right)$$

The Cronbach's alpha formula is where n is the number of items, V_t is the variance of the total scores and V_i is the variance of the item scores. The questionnaires were answered by 70 personnel who were involved in TTM production in the 27 public hospitals (n = 70).

Results

According to literature review and qualitative research, there were five groups of independent variables, which were investigated and conceptualized as follows: physical infrastructure, operational personnel, networking, budget, and management (Figure 1). Physical infrastructure had two elements: a) production infrastructure and utilities and b) readiness of production and quality control equipment. Operational personnel variables comprised basic knowledge, education level, experiences, skills, special talent, and personal characteristics. Networking was among suppliers, academic professors and operational personnel. Budget sources included the hospitals' revenue and regular budget from the central government agency.

Last but not least were management variables, including organizational management, management support, process management, knowledge management, and external linkages. At the experienced public hospitals, there were

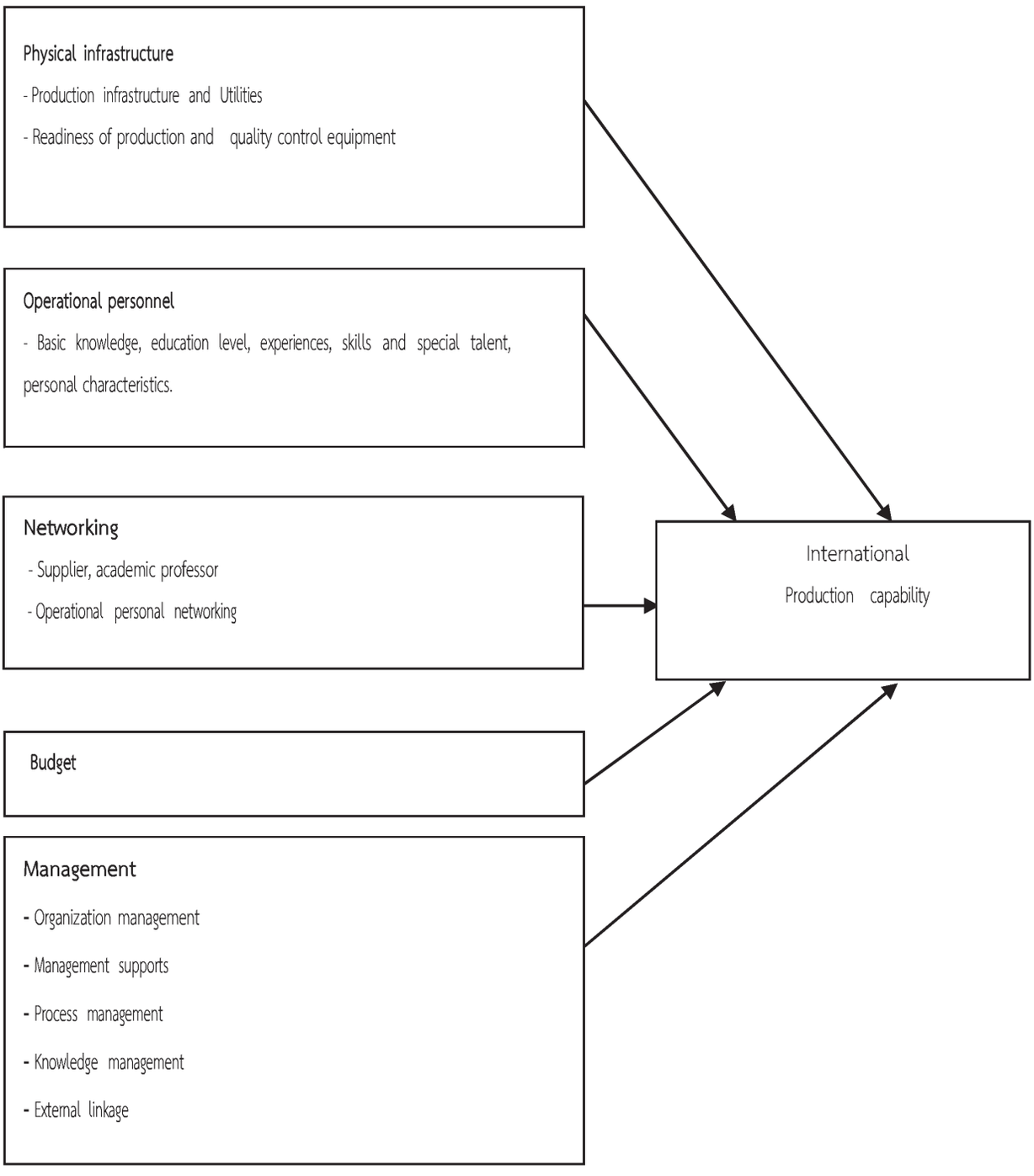


Figure 1 International production capability model of Thai public hospitals

personnel who had worked according to the WHO GMP standards, while in the inexperienced hospitals there were personnel who had worked, but the work did not meet the WHO GMP standards.

Regarding the qualitative aspect of this research, among the experienced public hospitals, the key success factors ranked from the highest to the lowest were networking, personnel development, management, budget, and infrastructure, respectively. However, the result of the regression analysis of the International Production capability model of Thai public hospitals (Table 1) was quite opposite.

Among the inexperienced public hospitals, the key success factors ranked from the highest to the lowest were budget, management, infrastructure, personnel development, and networking. The regression equation was as follows:

$Y = 0.643 + 0.198X_1 + 0.111X_2 + 0.109X_3 + 0.407X_4 + 0.206X_5$, where X_1 = physical infrastructure, X_2 = operational personnel, X_3 = networking, X_4 = budget, X_5 = management, and Y = international production capability model of Thai public hospitals. Regression coefficient = slope of the graph and constant = Y-intercept according to linear regression calculation analysis.

According to the model, the five combined independent variables could be calculated as 53.60% of the variation of the dependent variable ($R^2 = 0.536$), F = 12.940, and *p*-value = 0.05.

Table 1 Regression analysis of production capability model of Thai public hospitals

Independent variables	Regression coefficient	Significant (*p*-value ≤ 0.05)
Physical infrastructure	0.198	0.000
Operational personnel	0.111	0.000
Networking	0.109	0.000
Budget	0.407	0.000
Management	0.206	0.000
Constant	0.643	
Multiple R	0.732	

Discussion

Among the inexperienced public hospitals, they were still struggling to meet the WHO GMP standards, and they believed that the budget was the absolute solution for everything such as the acquisition of good infrastructure. The more costly infrastructure would lead to the better production capability of the factory. In fact, there was no such guarantee for this hypothesis. The production capability is more concerned with both explicit and tacit knowledge (in other words: know-how).[12] They were too naive and thus underestimated the following aspects: personal development, learning process, budgeting process, management process especially in decision-making process, process management, knowledge management and external linkage for know-how exchange. The missing link of the budget to these variables was the major failure of the inexperienced group, especially the networking which facilitates many aspects, for example, tacit knowledge exchange, decision-making process, learning from project mismanagement and peer-to-peer review, better process management, external linkage, and organization management to cope with the rapid change in production technology.

According to the qualitative analysis, the networking is believed to be one of the key drivers and important sources of learning. The networking is a kind of social capital which facilitates both explicit and tacit knowledge transfer, but more for tacit knowledge. The

social capital or the networking among public hospitals is crucial to create mutual trust and then the sharing of success stories.[13] And such knowledge will be quickly transferred for resolving the repetitive failure of TTM production among the groups.

Conclusion

Thus, the right starting point is half finished. The networking allows the exchanges of both tacit knowledge and explicit knowledge leading to comprehensive understanding and know-how to execute the TTM production project effectively. The project leader who understands this phenomenon will be able to cope, get involved and work with the top management and make process management, knowledge management, and external linkage move effectively. Not only the production process improvement but also the decision-making process will be undertaken faster; avoiding trial and errors will lead to the many problems, especially the over-budget or poor budget spending and implementation. Thus, the capacity of the project leader to influence team members and management staff should be simultaneously developed. Finally, the effectiveness of the budget spending and suitable infrastructure should be created by the project leader to successfully support the effective and efficient TTM production.

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การศึกษาย้อนหลัง: ถอดบทเรียนและปัจจัยหลักแห่งความสำเร็จในการส่งเสริมการผลิตยาแผนไทยในโรงพยาบาลของรัฐ

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บทคัดย่อ หลังจากคำประกาศอัลมาอตา กระทรวงสาธารณสุขได้ปฏิบัติตามคำแนะนำขององค์การอนามัยโลก การแพทย์ไทยถูกบรรจุเข้าในนโยบายหลักสุขภาพ ตั้งแต่แผนพัฒนาเศรษฐกิจและสังคมแห่งชาติ ฉบับที่ 4 (พ.ศ. 2520–2524) การวิจัยนี้เป็นการศึกษาแบบย้อนหลังที่เน้นการถอดบทเรียนการผลิตยาแผนไทยในโรงพยาบาลของรัฐ เพื่อหาปัจจัยความสำเร็จของการผลิตยาแผนไทยในโรงพยาบาลของรัฐในประเทศไทยระหว่างปี พ.ศ. 2551–2556 ผลการวิจัยเชิงปริมาณในกลุ่มโรงพยาบาลที่ไม่มีประสบการณ์มาก่อน พบว่าปัจจัยหลักความสำเร็จเรียงลำดับจากมากที่สุดไปน้อยที่สุด คือ งบประมาณ การบริหาร โครงสร้างพื้นฐาน การพัฒนาบุคลากร และการสร้างเครือข่าย ผลการวิจัยเชิงคุณภาพในโรงพยาบาลที่มีประสบการณ์ พบว่าปัจจัยหลักความสำเร็จเรียงลำดับจากมากที่สุดไปน้อยที่สุด คือ การสร้างเครือข่าย การพัฒนาบุคลากร การบริหารงบประมาณ และโครงสร้างพื้นฐาน ตามลำดับ อธิบายข้อแตกต่างได้ดังนี้ การมีเครือข่ายเป็นกุญแจสำคัญในการเรียนรู้เพื่อทำให้เกิดการเริ่มต้นที่ถูกต้อง เกิดการแลกเปลี่ยนความรู้ซ่อนเร้นและความรู้เด่นชัดในประสบการณ์การทำงาน ส่งผลให้เกิดความรู้ความเข้าใจ ในการดำเนินงานที่มีประสิทธิผลในการปฏิบัติงานบริหารโครงการผลิตยาแผนไทย จึงเป็นการเพิ่มขีดความสามารถของหัวหน้าโครงการในการโน้มน้าวทีมงานและผู้บริหารในการผลิตยาแผนไทยให้ประสบผลสำเร็จ เกิดการใช้งบประมาณอย่างมีประสิทธิภาพและเหมาะสมกับโครงสร้างพื้นฐาน เพื่อสนับสนุนการผลิตยาแผนไทยให้สำเร็จได้ในที่สุด

คำสำคัญ : ยาแผนไทย, การผลิต, ปัจจัยที่ทำให้ประสบความสำเร็จ, โรงพยาบาลของรัฐ