การเสริมสร้างพลังอำนาจในงานและผลิตภาพตามการรับรู้ ของพยาบาลในโรงพยาบาลระดับทุติยภูมิ เมืองจิ่งหง สาธารณรัฐประชาชนจีน
Work Empowerment and Productivity as Perceived by Nurses in Secondary Hospitals, Jinghong City, the People's Republic of China

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บทคัดย่อ

ผลิตภาพเป็นตัวชี้วัดที่สำคัญของผลการปฏิบัติงานขององค์การ การวัดผลิตภาพขององค์การจะช่วยระบุความสามารถในการใช้ประโยชน์จากทรัพยากรในองค์การเพื่อสร้างความพึงพอใจให้แก่ผู้ป่วย การศึกษาเชิงพรรณนาแบบหาความสัมพันธ์ครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความสัมพันธ์ระหว่างการเสริมสร้างพลังอำนาจในการทำงานกับผลิตภาพตามการรับรู้ของพยาบาลที่ปฏิบัติงานในโรงพยาบาลระดับทุติยภูมิ เมืองจิ่งหง สาธารณรัฐประชาชนจีน กลุ่มตัวอย่างคือพยาบาลจำนวน 188 คนที่ได้รับคัดเลือกโดยวิธีการสุ่มแบบชั้นภูมิ เครื่องมือที่ใช้ในการวิจัยประกอบด้วยแบบสอบถามการทำงานที่มีประสิทธิผล (Laschinger, Finegan, Shamian & Wilk, 2001) และแบบวัดผลิตภาพ (McNeese-Smith, 1995) ซึ่งมีค่าสัมประสิทธิ์อัลฟาของครอบบาคเท่ากับ 0.94 และ 0.96 ตามลำดับ วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนาและการวิเคราะห์สหสัมพันธ์แบบเพียร์สัน ผลการศึกษาพบว่าพยาบาลในโรงพยาบาลระดับทุติยภูมิ เมืองจิ่งหง สาธารณรัฐประชาชนจีน รับรู้การเสริมสร้างพลังอำนาจในงานและผลิตภาพในระดับปานกลาง ($\bar{X}$ = 17.88, SD = 3.99; $\bar{X}$ = 47.30, SD = 12.69 ตามลำดับ) และพบว่าการเสริมสร้างพลังอำนาจในงานมีความสัมพันธ์เชิงบวกกับผลิตภาพ (r = .408, p <.01) ผลการศึกษาครั้งนี้เป็นประโยชน์สำหรับผู้บริหาร ในการส่งเสริมเสริมสร้างพลังอำนาจในงาน เพื่อเพิ่มผลิตภาพที่จะทำให้เกิดผลลัพธ์ที่ดีต่อผู้ป่วยและโรงพยาบาลต่อไป

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Abstract

Productivity is an important indicator of performance of organization. Measuring organizational productivity will help identify ability to fully utilize organizational resources in order to create

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patient satisfaction. This descriptive correlational study aimed to examine the relationship between work empowerment and productivity among nurses working in secondary hospitals, Jinghong City, the People's Republic of China. The sample included 188 nurses who were selected by using stratified random sampling method. Research instruments consisted of the Condition of Work Effectiveness Questionnaire (Laschinger, Finegan, Shamian & Wilk, 2001) and the Productivity Scale (McNeese-Smith, 1995), which had the Cronbach's alpha coefficients of 0.94 and 0.96, respectively. Descriptive statistics and Pearson's product-moment correlation analysis were used to analyze data. Results revealed that nurses in secondary hospitals, Jinghong City, the People's Republic of China perceived work empowerment and productivity at moderate levels ($\bar{X}$ = 17.88, SD = 3.99; $\bar{X}$ = 47.30, SD = 12.69, respectively). There was a statistically significant positive relationship between work empowerment and productivity (r=.408, p<.01). The results of this study provide administrators to promote work empowerment to increase productivity which will produce positive outcomes for patients and hospitals.

Background and significance

Changes including gradually aggravated burden of health care, insufficient total medical resources and uneven distribution of high-quality medical resources have an impact on the health-care industry (Wang, Li, Lu, & Han, 2019). In addition, restructuring and fiscal restraint in recent years has forced health-care organizations to operate with fewer nurses, yet still provide the necessary high-quality services (Liou, 2008). These changes are viewed as a way to increase organizations' productivity and to maintain their competitive advantage. In China, drug markup policies have been repealed in all public hospitals by the end of September 2017 (The Central People's Government of the People's Republic of China, 2017). These reforms have caused hospitals being unable to collect enough revenue to cover their expenditures, then the hospitals need to save on their costs in supplies. In favor of saving and combining the medical resources of hospitals at various levels, a medical consortium has been advocated. This consortium would separate the patients, in order that minor illnesses are treated in the community and serious illnesses are treated in the hospital, and rehabilitated patients would return to the community (National Health Commission of the People's Republic of China [NHCC], 2016). All these factors have induced healthcare organizations need highly competent nurses to produce efficient and effective care (Duong, 2019); hospitals to take on quality as the core indicator of good management; achieve hospital goals as far as possible; and realize high productivity.

Generally, productivity is defined as a measure of the amount of output generated per unit of input (Linna, Pekkola, Ukko, & Melkas, 2010). Also, productivity can be viewed

as the contribution towards an organizational end result in relation to resources consumed (McNeese-Smith, 1995). Productivity is related to cost, quality of care, sick leave, and turnover and so on. Increasing the productivity has many advantages, such as lowering the costs in hospital; boosting the job retention of nurses; and increasing effectiveness and pleasure of patients, nurses, doctors, and staff (McNeese-Smith, 2001). Staff productivity is one of the significant factors for organization success and survival (Hall, 2003).

However, important factor that can affect productivity is work empowerment (Laschinger & Wong, 1999; Chang & Liu, 2008). According to Kanter (1977), work empowerment refers to the organizational environment that provides employees access to formal power, informal power, information, resources, support, and opportunity in order to enhance their power to accomplish work within an organization. It was found that higher perceived access to empowerment structures was associated with increased productivity (r=0.30, p<.001) (Laschinger & Wong, 1999), and subscales of work empowerment can predict 7.0% of job productivity (R= 0.07,F(4, 571) = 11.06,p= .001) (Chang & Liu, 2008). Work empowerment affects the performance of employees and improve the productivity.

Secondary hospitals, Jinghong City, the People's Republic of China encountered issues of productivity. For the People's Hospital of Jinghong city, in 2017, financial expenditure increased 36.62% over 2016 (The People's Government of Jinghong City, 2017). Also,

because of the two-child policy, there are more young nurses giving birth for the second child, so the rate of sick leave is higher than before (Nurses director, personal communication, November 15, 2018). At the Dai minority hospital of Xishuangbanna, the nurse turnover rate was 3% in 2016, and it increased to 12% in 2017. Although the rate of high quality nursing was 100% in 2017, however, it was 75% in 2016 (Nurses director, personal communication, November 16, 2018), which shows inconsistency. Also, the total resources of traditional Chinese medicine and Dai medicine are insufficient. The utilization rate of beds in the Dai minority hospital of Xishuangbanna is not high, as the rate has not reached 60% (Xishuangbanna Health and Family Planning Commission, 2018). A survey by Zhang & Yuan (2017) among nurses working in secondary hospitals found that nurses rarely have the opportunity to participate in hospital affairs. In addition, the study by Wu, Chang, & Peng (2014) found that on the job training aspect, nurses have problems with busy work, lack of teachers and so on. Additionally, nurses also lack opportunities to learn challenging tasks, because of the large number of nurses in the department and the strong competition, only a few people can participate. Furthermore, the current fiscal constraints imposed on health-care institutions, nurses have also been forced to do more with fewer resources (Zhao, Zhang, & He, 2007). All of these have revealed limitations, as far as resources, support, and opportunities of work empowerment among the nurses in secondary hospitals of China.

According to few studies regarding work empowerment and productivity among nurses in China, and no studies in the secondary hospitals in the Jinghong City, the study of work empowerment and productivity in secondary hospitals of the Jinghong City, and correlation between work empowerment and productivity, can provide information and evidence for hospital managers and nursing managers to enable the aforesaid in planning efficient and effective strategies to promote work empowerment within the organization, and to target the improvement of organizational productivity.

Objectives

This study aimed to identify the level of work empowerment, to identify the level of productivity, and to identify the relationships between work empowerment and productivity of nurses in the secondary hospitals of Jinghong City, the People's Republic of China.

Conceptual framework

Concepts used in this study were work empowerment developed by Laschinger (1996) and productivity developed by McNeese-Smith (2001). According to Laschinger, work empowerment is the extent to which there is access to opportunity, information, support and resources which is promoted by formal and informal job characteristics. It consists of six dimensions. 1) Formal power is found in job that are visible, central to the purpose of the organization, and that allow for discretion in decision making; 2) Informal power is alliances form in the organization, with

superiors, and peers, as well as subordinates; 3) Opportunity is related to job conditions that provide individuals with chances to advance within the organization and to develop their knowledge and skills; 4) Support is related to sources of support, such as guidance and feedback received from other persons, to function in a way that will maximize effectiveness; 5) Access to resources means having the ability to obtain materials, money, and rewards necessary for achieving job demands; 6) Information includes technical knowledge and expertise as well as informal information concerning what is going on in the larger organization. Productivity was defined as the contribution toward an organizational end result in relation to resources consumed (McNeese-Smith, 1995). Based on literature review, contribution includes resource which refers to human and physical resources; cost which refers to labor cost, and cost of supplies, sick leave, turnover, absenteeism; goal which refers to hospital and department goals, support of professional or educational growth of all employees in department, and productivity goal; professional growth which means teaching the new people, sharing something new with nursing colleagues, making suggestion for improving the unit, learning new processes, going back to school for more education; quality of service which is aspects of free of error and well organized. Nurses who can access to an empowering organization feel of autonomy and control over work and have aspirations to invest to accomplish the organizational goal which lead to high productivity.

Methodology

A descriptive correlational research design was used to measure the relationship between work empowerment and productivity of the nurses in the secondary hospitals of Jinghong City of the People's Republic of China, including the People's Hospital of Jinghong city (PHoJHC) and Dai Minority Hospital of Xishuangbanna (DMHoX).

Population and sampling. The target population of the study included 336 staff nurses working in the two secondary hospitals. Inclusion criteria was staff nurses who had been working for at least one year. Exclusion criteria were nurses who were not at work post because of sick leave, continuing studies, or maternity leave. According to the Yamane formula (Yamane, 1973), the sample size was 183 nurses. Considering the occurrence of a loss of up to 10 percent of the sample size (Israel, 1992), the final number of sample size was 201 nurses. (139 from PHoJHC, and 62 from DMHoX). The stratified random sampling method was used to select staff nurses from the staff nurses' name list in each unit of two secondary hospitals.

Research instruments and quality of instrument The research instruments included 1) Demographic Data Form which was developed by the researcher to collect personal information of sample including: age, gender, hospital, years of working in the present hospital, educational level, professional title, working unit, and working hospital. 2) Chinese version of Conditions for Work Effectiveness Questionnaire-II, which was developed by Laschinger, Finegan, Shamian & Wilk (2001) and translated to Chinese by Li,

Sun, Hu, & An (2007). It consists of 19 items that measure 6 components of work empowerment: Opportunity (3 items), information (4 items), support (3 items), resources (3 items), formal power (3 items), informal power (3 items), and global empowerment scales (2-item), each subscale has a five Likert scale (1= none, 2 = a little, 3 = some, 4 = many, and 5 = a lot). Higher scores indicated perceive more empowerment in work environment. Total sum of scores ranged from 6 to 30. The translated version had large factor loads on their corresponding main components (≥0.5) (Li et al., 2007), this shows that it is in good consistency with the original questionnaire in terms of expression, content and structure, therefore, this scale had good construct validity 3) The productivity scale which was developed by McNeese-Smith (1995). The productivity scale consists of 15 items. All items were rated on a 5-point rating scale ranging from 1 = slight contribution to 5 = very high contribution, having a total sum score range from 15 to 75. Higher scores reflect more contribution. According to McNeese-Smith (1995), this scale was revised several times using feedback from the panel of judges, a panel of hospital department managers, and a cross section of hospital staff. The productivity scale was translated using the back-translation method (Maneesriwongul & Dixon, 2004) by the researcher. The researcher translated the original scale into Chinese. A bilingual expert who worked as a nursing teacher in a university translated the Chinese version scale into an English version. One English expert compared the original scale and the back-translation

English version scale to confirm the equivalence, whether she thought any points would lead to misunderstandings, and whether two English versions showed a same meaning. English expert gave feedback that there was agreement between the two versions. The researcher and her advisor discussed and revised the discrepancies until they were satisfied with the current version. Chinese version of Conditions for Work Effectiveness Questionnaire-II and the productivity scale were tested their reliability among 20 nurses from PHoJHC and DMHoX. The Cronbach's alpha coefficients of them were 0.94 and 0.96, respectively.

Ethical consideration. The research proposal was approved by to the Research Ethics Review Committee, the Faculty of Nursing, Chiang Mai University, Thailand (No.019/2019). The participants were informed that they were free to refuse participation or to withdraw from the study at any time without losing any benefits and without affecting their performance evaluations. A statement was put in an information sheet to guarantee confidentiality and anonymity of individual responses. Only code numbers were used for questionnaires. Information offered by the participants was only applied for the current study and remained confidential. A research consent form was given to the participants who were willing to participate.

Data collection. Data were collected from February to March, 2019. The researcher met with the directors of nursing department of each hospital and introduced them the study's objectives and methods followed by

a request to distribute and collect the research questionnaires by one coordinator. A total of 201 questionnaires were distributed to the samples. In DMHoX, the research coordinator help to distribute and collect questionnaires and sent them to the researcher. In the PHoJHC, the researcher distributed questionnaires with information sheet and two envelops. After the subjects complete the questionnaires and consent forms, they put them in two separated boxes, then the researcher collected the questionnaires from the boxes. After two weeks, 196 questionnaires (97.51%) were returned. Among these 196 questionnaires, 188 (93.53%) of the questionnaires were completed and used for data analysis.

Data analysis. A computer software program was used for data analysis in this study. Significance level alpha was set at 0.05. Frequency, percentage, mean, and standard deviation were used to analyze demographic data. Pearson's product moment correlation analysis was used to analyze the relationship between work empowerment and productivity since they were normal distribution tested by using Kolmogorov-Smirnov's test.

Results

Most of nurses were female (97.34%). The average age of nurses was 28.79 (SD = 5.46) years old, and 76.06% of nurses were between 21 and 30 years old. 60.11% of the nurses were married. 57.44% of the nurses had associate degree and 55.85% of nurses were senior nurses. The average working years of nurses was 7.73 years (SD = 5.63). 18.09% of the nurses worked

in the obstetrics and gynecology department and 14.36% of the nurses worked in the internal medicine department. 78.19% of the nurses had rotating work shifts. 53.73% of the nurses had income between 2001 and 4000 Yuan (297-595US$) per month.

Nurses perceived overall work empowerment at a moderate level ($\bar{\mathbf{X}}$ = 17.88, SD = 3.99). Among dimensions, an average mean score of perceived informal power was 3.50 (SD = .80), of formal power was 2.95 (SD = .87). Within the rest dimensions, the

most empowering sub-dimension was support ($\bar{\mathbf{X}}$ = 3.06, SD = .91), followed by access to opportunity ($\bar{\mathbf{X}}$ = 2.83, SD = .79), access to resource ($\bar{\mathbf{X}}$ = 2.63, SD = .84) and access to information ($\bar{\mathbf{X}}$ = 2.73, SD = .94), respectively. (Table 1). In addition, Nurses rated productivity at a moderate level ($\bar{\mathbf{X}}$ = 47.30, SD =12.69). (Table 1). The result showed that there was significantly positively moderate correlation between work empowerment and productivity (r = 0.408, p < 0.01). (Table 2)

Table 1 Mean, Standard Deviation and Levels of Work Empowerment and productivity Among Nurses (n = 201)

Variables	Mean	SD	Level
Productivity	47.30	12.69	Moderate
Overall work empowerment	17.88	3.99	Moderate
Informal power	3.50	0.80	
Formal power	2.95	0.87	
Support	3.06	0.91	
Opportunity	2.83	0.79	
Resource	2.63	0.84	
Information	2.73	0.94	

Table 2 The Relationship between work empowerment and productivity of nurses (n = 201)

	Productivity	Level
Overall work empowerment	0.408**	Moderate

** p < .01

Discussion

Work empowerment. The study results indicated that the nurses perceived overall work empowerment at a moderate level. The

explanations might be: firstly, nurses had good relationships and communication channels with peers, subordinates, and cross-functional groups, which may result from they often join

activities together on some important festivals, for example, on New Year's Day, Mid-Autumn Festival, Water-Sprinkling Festival, etc. These good relationships enabled nurses to get easy collaboration to take care of patient, for example, nurse can consult with doctor informally if there are clinical problems, and nurses help each other when there are high workload. Secondly, nurses had good support, which is feedback and guidance received from superiors, peers, and subordinates. Explanations might be that senior nurses help and lead junior nurses. Moreover, head nurses did guidance about prioritize tasks in busy and emergency situations, and orientation in routine work about observation on the condition of critically ill patients (Mi, 2008). Thirdly, nurses had formal power which is the flexibility, visibility and importance of their job position. Explanations might be that in the past, the main task of nurses was to execute doctor's orders and give injections and transfusions. At present, nurses carry out high quality nursing service, this clarified the responsibility of nurses and formed the situation of every nurse can participate in quality management, then that can improve nurses' autonomy within work (Li, 2010). However, two secondary hospitals still lack encouragement for nurses' work innovation and pay less attention to reward for work innovation (Zhang, 2017). In addition, the role differences between doctors and nurses caused by factors such as education, system, will has effect on relationship between doctors and nurses (Ma, Zhang, & Shan, 2015). These reason might affect and reduce work empowerment into a

moderate level. This result was consistent with previous studies by He (2016), Liu et al. (2016) in China, by Dirik and Intepeler (2017) in Turkey, and by Breau & Rhéaume (2014) in Canada.

Productivity. The results of this study indicated that the nurses perceived the overall productivity at a moderate level. According to productivity refers to aspects of sick leave, quality of care, and finish work within deadline, professional growth, hospital goals, etc; the explanations of a moderate level of productivity might be: Firstly, DMHoX is the leader of Dai Medical and Health Service System of Four Levels of Traditional Chinese Medicine in Prefectures, Cities, Towns and villages. Moreover, during the 13th Five-Year Plan period, China has started to promote the development of Dai and Chinese medicine, establishing the DMHoX into a Tertiary National Hospital. In addition, the PHoJHC is the leading hospital of the development of the closed medical service community in the area; it undertakes the support and development tasks of 15 primary medical and health institutions in the whole city (Peng, 2018). Thus, maintaining a high quality of care is one of core indicators for these hospitals. Secondly, the responsibilities of nurses at all levels are clarified, which means that nurses have to complete work on time and with good quality. Thirdly, the length of sick leave is included in the year-end evaluation items (Nurse director, personal communication, November 17, 2018) so that most employees who are in good physical condition prefer to spend their time at work.

However, there are also some barriers for productivity. Firstly, hospital status and all

development goals were not well communicated to clinical front-line personnel, nurses provided high quality of care to complete their own task, but they might not understand hospital's overall goals Thus, nurses felt they had low contribution in attaining hospital goals. Secondly, when head nurse is available in advanced studies, experienced nurses will be appointed to organize department work, and young nurses don't need to organize department work, they just need to cooperate with profound experienced nurses to complete department work for their position in their department with high quality (Nurses, personal communication, November 19, 2018). Thus, some nurses felt had low contribution in being well organized department work. Thirdly, nurses have a heavy workload. While taking care of patients, nurses also take on other tasks such as ward administration, accounting, and computer. Heavy work, social and family pressures, severely affects individual productivity (Zhang, Cheng, & Yuan, 2009). Moreover, nurses often have to be on night shift in the long term so that they felt overtired, fatigue induced low productivity (Xue, 2016). In addition, the government's inadequate investment in the field of medical and health care has weakened the allocation capacity of medical and health resources and nurses are not well paid, it affects the work enthusiasm of employees. Those factors can cause turnover, and high turnover will increase cost of labor which is a component of productivity. This study result was consistent with study of Park, Lee, & Park (2018) in Korea.

Relationship between work empowerment and productivity. The results of this study show that there was significantly positively moderate correlation between work empowerment and productivity. The positive relationship might be because of nurses had opportunities to gain new skills and knowledge and they taught and shared knowledge and skills they learned to improve nursing care in their department. Kanter (1977) maintained that opportunity is a key influence on employee productivity; individuals in high-opportunity take a proactive approach to solving problems that arise on the job. Besides, if nurses have chance to participate on committees and task force, they can learn some knowledge and good ideas that will be helpful in assisting their own department to set useful goals. Moreover, nurses who get support can improve productivity, for example, senior nurses supported junior nurses by reminding junior nurses details which were easily forgotten. This contributed to junior nurse not to conduct mistake. Departments are all connected, share information and idea to support other departments can help to solve some problems. Therefore, if nurses receive support from staff of other departments, it is beneficial in solving problems. Furthermore, nurses who had access to resource can help their own department to meet deadline. Nurses' clinical work is intensive and time-pressured. If they are given more appropriate working hours, instruments and equipment are repaired in a timely manner, and there is adequate allocation of resources, then, these are beneficial, as far as helping own department to meet deadline,

and, thus, increase their productivity. According to Laschinger & Wong (1999), work structures that allow staff to work more effectively by encouraging them to perform their professional knowledge and skills and be explainable for their actions are more likely to have positive organizational outcomes, such as increasing in productivity and work effectiveness. This study result was consistent with study of Laschinger and Wong (1999) in Canada.

Implication of study

According to moderate levels of work empowerment and productivity, as well as the positive relationship between work empowerment and productivity, the implications should be as follows: 1) Hospital administrators and nursing directors should improve work empowerment by providing enough supplies for nurses to proceed their works; providing more information of values and goals of top management; creating more opportunities of doing challenge work, competition, and continued education; establishing recognition, clear, and relevant jobs for nurses; 2) Nursing directors, head nurse, colleagues should give nurses guidance, support, and constructive suggestions for fixing problems and improving quality of care.; 3) Hospital administrators and nursing directors should improve productivity by, for example, organizing training to improve quality of services, promoting professional growth, taking care of health and managing hard work for preventing of sick leave and turnover.

Recommendations for further study

Future research studies are: 1) conduct the study of relationship between work empowerment and productivity in other different types of hospitals and in other districts of China.; 2) study factors related to work empowerment and productivity.; and 3) conduct qualitative or intervention study to improve nurses' work empowerment and productivity.

Reference

Breau, M., & Réaume, A. (2014). The relationship between empowerment and work environment on job satisfaction, intent to leave, and quality of care among ICU nurses. *Dynamics, 25*(3), 16-24.

Chang, L. C., & Liu, C. H. (2008). Employee empowerment, innovative behavior and job productivity of public health nurses: A cross-sectional questionnaire survey. *International Journal of Nursing Studies, 45*(10), 1442-1448.

Dirik, H. F., & Intepeler, S. S. (2017). The work environment and empowerment as predictors of patient safety culture in Turkey. *Journal of Nursing Management, 25*(4), 256-265.

Duong. (2019). *Job demands, job resources and work engagement among nurses in Tertiary Care Hospitals, Thanh Hoa Province, The Socialist Republic of Vietnam.* (Master thesis Nursing Administration), Graduate school, Chiang Mai University.

Hall, L. M. (2003). Nursing intellectual capital: A theoretical approach for analyzing nursing productivity. *Nursing Economics, 21*(1), 14-19.

He, C. Y. (2016). *Study on the relationship between structural empowerment, psychological empowerment and work involvement of nurses in oncology hospitals.* (Doctoral dissertation), Henan University.

Israel, G. D. (1992). *Determining sample size.* Retrieved from https://www.tarleton.edu/academicassessment/documents/Samplesize.pdf

Kanter, R. M. (1977). *Men and women of the corporation.* New York: Library of Congress.

Laschinger, H. (1996). A theoretical approach to studying work empowerment in nursing: A review of studies testing Kanter's theory of structural power in organizations. *Nursing Administration Quarterly, 20*(2), 25-41.

Laschinger, H. K. S., & Wong, C. (1999). Staff nurse empowerment and collective accountability: Effect on perceived productivity and self-rated work effectiveness. *Nursing Economics, 17*(6), 308-317.

Laschinger, H. K. S., Finegan, J., Shamian, J., & Wilk, P. (2001). Impact of structural and psychological empowerment on job strain in nursing work settings: Expanding Kanter's model. *Journal of Nursing Administration, 31*(5), 260-272.

Liou, S. R. (2008). An analysis of the concept of organizational commitment. *Nursing Fórum, 43*(3), 116-125.

Linna, P., Pekkola, S., Ukko, J., & Melkas, H. (2010). Defining and measuring productivity in the public sector: Managerial perceptions. *International Journal of Public Sector Management, 23*(5), 479-499.

Li, Q. J., Sun, N., Hu, H., & An, X. M. (2007). Establishment of Chinese version of Effective Conditions of Work Questionnaire-II. *Journal of Nursing, 22*(19), 1-4.

Liu, W. T., Yin, A. C., Zhang, X. J., Zhang, T. T., & Yuan, M. (2016). Analysis of the correlation between structural empowerment of ICU nurses and patient safety culture. *Journal of Nursing, 32*(6), 17-21.

Li, X.Y. (2010). Deepening high quality nursing service and exploring responsibility system of nursing performance appraisal. *Nursing Management in China, 10*(11), 26-27.

Ma,Y.H., Zhang,C.M., & Shan,L.F. (2015). Analysis of the Importance and Improvement Measures of Good Medical-Nursing Relations. *Research on Women's Health in China and Foreign Countries, 20,* 73-73.

McNeese-Smith, D. (1995). Job satisfaction, productivity, and organizational commitment. The result of leadership. *The Journal of Nursing Administration, 25*(9),17-26.

McNeese-Smith, D. (2001). Staff nurse views of their productivity and non-productivity. *Health Care Management Review, 26*(2), 7-19.

Maneesriwongul, W., & Dixon, J. K. (2004). Instrument translation process: A methods review. *Journal of Advanced Nursing, 48*(2), 175-186.

Mi, Q. (2008). Focus on the growth of new nurses and keep the nursing team stable. *Chinese Medical Innovation, 5*(30), 77-77.

National Health Commission of the People's Republic of China. (2016). *Circular of the state council on the issuance of the 13th five-year plan for health programming.* Retrieved from http://www.gov.cn/gongbao/content/2017/content_5163449.htm

Rusny. (2019). *The relationships between the participatory management work empowerment, and the effectiveness of patient unit as perceived by first – line nurse managers, Private Hospitals.* (Master thesis), Faculty of Nursing Christian University. (In Thai)

Peng, J. (2018). *Reconstructing the medical service system and promoting the graded diagnosis and treatment system-the construction of medical service community in Jinghong City started in an all-round way.* Retrieved from http://www.jhsrmyy.com/Article_show.aspx?id=797&chid=2

Park, E., Lee, H. Y., & Park, C. S. Y.(2018). Association between sleep quality and nurse productivity among Korean clinical nurses. *Journal of Nursing Management, 8*(26), 1051-1058.

The Central People's Government of the People's Republic of China. (2017). *By the end of September, all public hospitals had abolished drug additions.* Retrieved from http://www.gov.cn/xinwen/2017-12/11/content_5245727.htm

The People's Government of Jinghong City. (2017). *Open report on department accounts of The People's Hospital of Jinghong city in 2017.* Retrieved from https://www.jhs.gov.cn/293.news.detail.dhtml?news_id=67082

Wang, D. B., Li, J., Lu, J. X., & Han, D. M. (2019). Current situation and countermeasures of Medical Consortium in China. *China Hospital, 23*(1), 47-48.

Xishuangbanna Health and Family Planning Commission. (2018). *Open report on department accounts of Institute of Ethnic Medicine of Xishuangbanna Dai Autonomous Prefecture in 2017.* Retrieved from https://wjw.xsbn.gov.cn/331.news.detail.dhtml?news_id=7042

Xue, L.Y. (2016). Occupational health status of clinical nurses and suggestions for improvement. *Human health, 12*(14), 14-14.s

Yang, Z., X. (2013). Investigation on organizational support of nurses with different personnel relations in Tai an General Hospital. *Chinese Nursing Research, 27*(9), 2848-2849.

Yamane, T. (1973). *Statistics: An introductory analysis.* New York: Library of Congress.

Zhang, H. (2017). Analysis on the status quo and influencing factors of nurses' job empowerment and turnover intention in county hospitals. *Anhui Medical and Pharmaceutical Journal, 22*(3), 564-568.

Zhang, H.M., Chen, Y., & Yuan, B. (2009). Nurses' occupational stress and countermeasures. *Chinese Journal of Misdiagnosis, 9*(32), 7895-7896.