Self-efficacy and Adaptive Performance of Head Nurses in Affiliated Hospitals of Dali University, People's Republic of China*
สมรรถนะแห่งตนและการปฏิบัติงานด้านการปรับตัวของหัวหน้าพยาบาล ในโรงพยาบาลในเครือของมหาวิทยาลัยต้าหลี่ สาธารณรัฐประชาชนจีน*

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บทคัดย่อ

การรับรู้สมรรถนะแห่งตนและความสามารถในการปรับตัวเป็นองค์ประกอบที่สำคัญในระบบบริการสุขภาพ เพื่อให้บรรลุผลลัพธ์เชิงบวกขององค์กร แต่อย่างไรก็ตามพบว่ามีการศึกษาเพียงเล็กน้อยเกี่ยวกับการศึกษาความสัมพันธ์ระหว่างความสามารถในการรับรู้สมรรถนะแห่งตนและความสามารถในการปรับตัว การศึกษาครั้งนี้เป็นการวิจัยเชิงพรรณนาหาความสัมพันธ์โดยมีวัตถุประสงค์เพื่อศึกษาการรับรู้สมรรถนะแห่งตนและความสามารถในการปรับตัวของหัวหน้าหอผู้ป่วย และศึกษาความสัมพันธ์ระหว่างการรับรู้สมรรถนะของตนกับความสามารถในการปรับตัวของหัวหน้าหอผู้ป่วย ในโรงพยาบาลในเครือของมหาวิทยาลัยการแพทย์ ต้าลี่ สาธารณรัฐประชาชนจีน กลุ่มตัวอย่างเป็นหัวหน้าหอผู้ป่วยจำนวน 135 คน ที่ปฏิบัติงานในโรงพยาบาลมหาวิทยาลัย 4 แห่งในจังหวัดยูนนาน สาธารณรัฐประชาชนจีน เครื่องมือที่ใช้ในการวิจัย ประกอบด้วยแบบประเมินประสิทธิภาพการรับรู้ตนเองโดยทั่วไป (General Self-Effective Scale: GSES) ที่พัฒนาขึ้นโดย Zhang & Schwarzer (1995) และแบบวัดสมรรถนะในการปรับตัว Adaptive Performance Scale ที่พัฒนาขึ้นโดย Charbonnie-Voirin et al. (2012) ที่แปลเป็นภาษาจีนโดยผู้วิจัยโดยไม่มีการดัดแปลง การทดสอบค่าสัมประสิทธิ์ความเชื่อมั่นของของครอนบาคของเครื่องมือ GSES และ Adaptive Performance Scale เท่ากับ .86 และ .89 ตามลำดับ การวิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนาและสัมประสิทธิ์สหสัมพันธ์ของเพียร์สัน

ผลการศึกษาพบว่า ความสามารถในการรับรู้สมรรถนะแห่งตนของหัวหน้าหอผู้ป่วยอยู่ในระดับปานกลาง ($\bar{X}$ = 2.81, SD = 0.49) และความสามารถในการปรับตัวของหัวหน้าหอผู้ป่วยอยู่ในระดับสูง ($\bar{X}$ = 5.59, SD = 0.56) การรับรู้สมรรถนะแห่งตนของหัวหน้าหอผู้ป่วยมีความสัมพันธ์เชิงบวกในระดับปานกลางกับการปรับตัว ($r = .495$, $p < .01$)

ผลการศึกษาครั้งนี้สามารถนำไปเป็นข้อมูลพื้นฐานและความรู้สำหรับผู้บริหารโรงพยาบาลในการพัฒนานโยบายและกลยุทธ์การบริหารของโรงพยาบาล เพื่อช่วยเพิ่มประสิทธิภาพในการรับรู้สมรรถนะแห่งตนของหัวหน้าหอผู้ป่วย ซึ่งจะช่วยเพิ่มความสามารถในการปรับตัวของหัวหน้าหอผู้ป่วย

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คำสำคัญ: สมรรถนะแห่งตน การปฏิบัติงานด้านการปรับตัว หัวหน้าพยาบาล โรงพยาบาลในเครือของมหาวิทยาลัยต้าหลี่ สาธารณรัฐประชาชนจีน

Abstract

Self-efficacy and adaptive performance are important components in the healthcare system for reaching positive organizational outcomes. However, little is known about the relationship between self-efficacy and adaptive performance. The purpose of this descriptive correlation study was to examine the self-efficacy and adaptive performance of head nurses, as well as to explore the relationship between self-efficacy and adaptive performance of head nurses in the affiliated hospitals of Dali University, the People's Republic of China. The participants consisted of 135 head nurses from four affiliated hospitals in Yunnan Province. The instruments included the General Self-Efficacy Scale (GSES) developed by Zhang & Schwarzer (1995) and the Adaptive Performance Scale developed by Charbonnier-Voirin & Roussel (2012). The Adaptive Performance Scale was translated into Chinese by the researcher without modification. The validity of GSES and Adaptive Performance Scale were confirmed. The Cronbach's alpha coefficients of GSES and Adaptive Performance Scale were .86 and .89. Data were analyzed using descriptive statistics and Pearson product-moment correlation.

The results of this study revealed that the mean score of self-efficacy of head nurses was 2.81 (SD = 0.49), lower than the international norm value of 2.9. The adaptive performance of head nurses was at a high level ($\bar{X}$ = 5.59, SD = 0.56). Self-efficacy of head nurses had a moderate positive correlation with adaptive performance ($r = .50$, $p<.01$).

The results of this study provide basic information and knowledge for hospital administrators to develop hospital policy and management strategies to increase head nurses' self-efficacy, which will enhance their adaptive performance.

Keywords: Self-efficacy, Adaptive performance, Head nurse, Affiliated Hospitals of Dali University, People's Republic of China

Background and Significance

The healthcare industry is a dynamic and rapidly changing sector. Nowadays, the healthcare industry is in the midst of a turbulent global transformation (Bouwens & Krueger, 2014). Some characteristics such as uncertainty, complexity, turbulence and interdependence exist in the healthcare environment (Ilgen & Pulakos,1999). China faced a similar situation when a new healthcare reform plan was released. Also, ongoing medical reform accelerated the uncertainty and complexity in the current medical environment (National Health and Family Planning Commission, 2015). Meanwhile, the process of medical transformation has resulted in a change in the nature of nurse job duties.

Head nurses are the first-line nurse leader and are crucial for clinical nursing quality, because, in aspects of management of nursing quality and safety, they are in a position to influence doctor and staff nurse satisfaction, work attitude or morale among staff nurses, and staff nurse turnover to optimize quality of nursing care (Chase, 2010; Letvak & Buck, 2008; McCarthy & Fitzpatrick, 2009). Therefore, when workplaces are becoming more dynamic, head nurses must be able to adapt to a constantly changing and complex medical environment.

Charbonnier-Voirin & Roussel (2012) defined adaptive performance as the ability of an individual to change his or her behavior to meet the demands of a new environment. There are five dimensions to adaptive performance: 1) Creativity refers to the application of new techniques and the use of information in solving problems; 2) Reactivity in the face of emergencies or unexpected circumstances refers to focusing on rapid response and effective alternatives in the face of problems and new situations; appropriate responses to risks, threats and emergencies; and the ability to focus in thinking, maintaining emotional control, and taking actions to control risk and emergency; 3) Interpersonal adaptability refers to adapting and communicating with other members of the organization; 4) Training and learning effort refers to learning new ways to do a job or to learn different skills related to a new job; and 5) Managing work stress refers to how to apply individual abilities and experiences to solve problems effectively, and preservation of self-confidence in stressful situations. Zacher (2013) stated that adaptive performance is one of the identified forms of work performance that is related to maintaining and improving patient safety. If head nurses have adaptive performance, they can facilitate positive organizational outcomes, such as managing change and meeting organizational goals (Dorsey, Cortina, & Luchman, 2010). If a head nurse has insufficient adaptability and coping skills, it may lead to high work stress and job burnout (Wakim, 2014). Additionally, adaptive performance is often associated with an individual's ability to cope or "deal" with the strain caused by changing job demands (Griffin et al., 2007). High work stress and job burnout are closely related to patient safety (Andela, Truchot, & Van der Doef, 2016).

Many factors affect adaptive performance. Self-efficacy is one of the significant factors that increases adaptive performance. Self-efficacy is defined as the overall confidence or belief in one's own coping ability across a wide range of demanding or novel situations that can influence people's behavior (Schwarzer, 1994).

According to the concept of self-efficacy, determining the beliefs a person holds regarding his or her power to affect situations, strongly influences both the power a person has to face challenges competently and the choices a person is most likely to make (Luszczynska & Schwarzer, 2005). Therefore, an individual's strong confidence or belief can assist him or her in changing their behavior and strive to achieve their goals. This means that self-efficacy can promote adaptive performance and help individuals to succeed in an uncertain environment.

Reviewing previous studies demonstrated that self-efficacy had a positive relationship with adaptive performance. Du and Wand (2012) found there was a strong positive relationship between self-efficacy and adaptive performance among employees in China ($r=.66$, $p<.01$). Naami et al. (2014) found there was a moderate positive relationship between self-efficacy and adaptive performance among nurses in Iran ($r=.34$, $P<.01$). However, there have been no studies found that examines the relationship between self-efficacy and adaptive performance among head nurses.

The medical reform in the People's Republic of China aims to address the rising healthcare costs, the growing health needs of the population, and the existing problems of insufficient resources and suboptimal outcomes related to quality of service (National Health and Family Planning Commission, 2015). Head nurses are not only responsible for bedside nurse duties but also in creating high-quality nursing care. Head nurses' capacity is crucial in order to achieve the goal of an organization. Therefore, head nurses need complex skill sets and characteristics to meet the organizational quality goals in the hospital (Lin, Wu, Huang, Tseng, & Lawler, 2007; Mc Alearney, & Butler, 2008; Platt & Foster, 2008). However, head nurses' comprehensive capacity may be affected by some factors. For example, for hospital administrators, a common consideration used in the selection process of head nurses is their exemplary skill set as bedside care providers, not their leadership abilities, as it was commonly assumed that good bedside nurses would automatically make good head nurses. Moreover, high work stress (Liang & Tan, 2016) is prevalent among head nurses and staff nurses. Due to a heavy workload at the hospital (Health and Family Planning Commission of Yunnan PR, 2017), as well as clinical environments behaving as complex adaptive systems, tension and anxiety appear in the environment (Sibthorpe, Glasgow, & Longstaff, 2004). So, job burnout may occur among head nurses and further influence head nurses' confidence and affect their judgments about their efficacy and self-beliefs (Ning, Li, Lu & Lin, 2013).

Thus, to better understand adaptive performance, the study of factors including self-efficacy related to adaptive performance among head nurses is essential.

Objectives

This study aimed to describe self-efficacy and adaptive performance, and to explore the relationship between self-efficacy and adaptive performance among head nurses in Affiliated Hospitals of Dali University, People's Republic of China.

Conceptual framework

The conceptual framework of this study is based on a literature review. Self-efficacy refers to overall confidence or belief of one's coping ability across a wide range of demanding or novel situations and can influence the person's behavior (Schwarzer, 1994). Adaptive performance is the ability of an individual to change his or her behavior to meet the demands of a new environment in five dimensions: cre-

ativity, reactivity in the face of emergencies or unexpected circumstances, interpersonal adaptability, training and learning effort, and managing work stress (Charbonnier-Voirin & Roussel, 2012). Confidence or belief can influence an individual's behavior. An individual's strong confidence or belief can promote him or her to change their behavior and strive to achieve their goals when encountering a new environment or tasks. The relationship between self-efficacy and adaptive performance among head nurses in Affiliated Hospitals of Dali University in the People's Republic of China was explored in this study.

Methodology

This study was a descriptive correlational study conducted among head nurses in Affiliated Hospitals of Dali University People's Republic of China.

Population and sample

The participants were head nurses who worked at Dali University for one or more years. The sample size was 127, calculated using the Yamane (1973) formula. Taking into consideration the possible loss of participants, 10% of the sample size total was added (Israel, 1992). Therefore, the total sample size was 140 head nurses. A simple random sampling method was used to select head nurses from the list of head nurses in each target hospital.

Research instrument

The instruments used in this study consisted of: 1) the Demographic Data Form, which was developed by the researcher and gathered information on gender, age, marital status, educational level, professional title, length of working years as a nurse, length of working years as head nurse, and working department; 2) the Chinese version of General Self-Efficacy Scale, adapted from Zhang and Schwarzer (1995), which measured head nurses' self-efficacy. It was comprised of ten items measured on a four-point Likert-type scale. The responses ranged from 1 (not at all true) to 4 (completely true), with a mean score ranging from 1 to 4, the total scores ranging from 10 to 40. A higher score meant higher self-efficacy (Schwarzer & Jerusalem, 1995); and 3) Measure of Adaptive Performance, as used by (Charbonnie–Voirin, et al. 2012), which assessed the adaptive performance of head nurses. The researcher used the original English scale without any modifications. It consisted of 19 items divided into five subscales of: creativity (4 items), reactivity in the face of emergencies or unexpected circumstances (4 items), interpersonal adaptability (4 items), training and learning effort (4 items) and managing work stress (3 items) with seven-point Likert-type scale. The responses ranged from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicated higher adaptive performance. The level of overall and each dimension of the adaptive performance were divided into low, moderate and high levels.

To control the quality of instrument used in this study, the internal consistency was tested with ten head nurses from the four target hospitals. These head nurses were excluded from study sample. The Cronbach's alpha coefficient of the self-efficacy was .86 and of the adaptive performance was .89.

Ethical Considerations

The study was approved by the Research Ethics Committee of the Faculty of Nursing, Chiang Mai University, Thailand. Permission to collect data was obtained from the nursing department directors of the four target hospitals. All participants were required to sign a research consent form before the data were collected. Participants were requested to return the sealed questionnaires in the given envelopes, which were collected by the research coordinator and returned to the researcher. In addition, participants of this study were informed that participation in the study was voluntary and they could refuse to participate or withdraw from the study at any time, without any consequences. The findings from this study were kept confidential and used for only this study.

Data collection

To collect data, the researcher contacted the director of the nursing department in each target hospital and assigned one research coordinator for distributing and collecting the research questionnaires, as well as helping the researcher to explain the objectives of the research to head nurses to obtain their support and cooperation. One hundred and forty questionnaires were distributed, of which 137 were returned with a valid response rate of 97.85%. Only 135 questionnaires (96.42%) were fully complete and used for data analysis.

Data Analysis

Data were analyzed using Statistical Package for Social Science (SPSS 13.0). Both descriptive and inferential statistics were only computed from the completed questionnaires at a 0.05 level of statistical significance. Descriptive statistics were used to analyze demographic data. The Kolmogorov-Smirnov statistic was used to test the normal and non-normal distribution of data for two variables. The Pearson product-moment correlation was used to analyze the relationship of self-efficacy and adaptive performance since data was normal distribution.

Results

All 135 head nurses who participated in this study were female. A large proportion (42.92%) were aged 31 to 40 years. Almost all (96.30%) of the participants were married. Most (62.22%) had a professional title of "nurse in charge" and held bachelor degree qualifications (74.82%). Two-thirds (66.67%) had been appointed as head nurses for fewer than ten years. The majority of participants came from the surgical (37.04%) and medical departments (35.56%).

The results showed that the overall self-efficacy mean score was 2.81 ($\bar{X}$ = 2.81, SD = 0.49) (Table 1). As shown in Table 2, the overall adaptive performance of participants was at a high level ($\bar{X}$ = 5.59, SD = 0.56). Among the five dimensions of the adaptive performance, creativity was at a moderate level ($\bar{X}$ = 4.81, SD = 0.90), while reactivity, interpersonal adaptability, learning effort, and managing work stress were at a high level ($\bar{X}$ = 5.54, SD = 0.76; $\bar{X}$ = 5.92, SD = 0.72; $\bar{X}$ = 5.85, SD = 0.81; $\bar{X}$ = 5.94, SD = 0.71, respectively). Moreover, the results also revealed a significant moderate relationship between self-efficacy and adaptive

performance (r= .495, p<.01) (Table 3).

Table 1 Mean and Standard Deviation of Self-Efficacy of Participants (n=135)

Self-efficacy	Mean	SD
1. I can always manage to solve difficult problems if I try hard enough.	3.25	0.71
2. If someone opposes me, I can find the means and ways to get what I want.	2.31	0.76
3. It is easy for me to stick to my aims and accomplish my goals.	2.04	0.84
4. I am confident that I could deal efficiently with unexpected events.	2.83	0.84
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.	2.58	0.75
6. I can solve most problems if I invest the necessary effort.	3.35	0.75
7. I can remain calm when facing difficulties because I can rely on my coping abilities.	3.2	0.73
8. When I am confronted with a problem, I can usually find several solutions.	2.97	0.76
9. If I am in trouble, I can usually think of a solution.	3.10	0.70
10. I can usually handle whatever comes my way.	2.47	0.84
Overall self-efficacy	2.81	0.49

Table 2 Mean and Standard Deviation of Adaptive Performance of Participants (n=135)

Adaptive Performance	Mean	SD
Creativity	4.81	0.90
Reactivity	5.54	0.76
Interpersonal adaptability	5.92	0.72
Learning effort	5.85	0.81
Managing work stress	5.94	0.71
Overall adaptive performance	5.59	0.56

Table 3 Pearson Product-Moment Coefficients between Self-Efficacy and Adaptive Performance (n=135)

	Adaptive performance
	r
Self-efficacy	.495**

**p < .01

Discussion

Self-efficacy

The results of this study showed that the head nurses' self-efficacy was lower than the international norm which is 2.9 ($\bar{X}$ = 2.81, SD = 0.49). The result of this study was similar to previous studies (Wu, Li, Wang & Li, 2014). A possible explanation is that head nurses' sense of self-efficacy may be affected by their sense of personal achievement. Ning et al. (2013) also showed that there is a certain causal relationship between the sense of personal achievement and self-efficacy. In China, the nursing profession has long been regarded as merely providing a supporting role as an assistant to doctors, and in general nurses receive less attention than doctors (Zhang, et al. 2014). This may influence head nurses' confidence or belief in their own effort, making head nurses feel that they did not have a sense of personal achievement.

Additionally, the professional title may explain the low self-efficacy mean score among head nurses. A previous study by Liu (2014) demonstrated that nurses with high professional titles had higher self-efficacy. However, most participants in this study held a professional title of nurse in change (62.22%) which is not considered a high-level professional tile in nursing. These reasons may explain that head nurses' self-efficacy mean score was lower than an international norm value of 2.9.

Adaptive performance

The results of this study showed that the overall adaptive performance was at a high level for head nurses. However, creativity was at a moderate level of the five sub-dimensions: reactivity in the face of emergencies or unexpected circumstances, interpersonal adaptability, training and learning effort, and managing work stress were at high levels of the five sub-dimensions. The result of overall adaptive performance in this study was similar to previous study (Charbonnier-Voirin & Roussel, 2012). The level of overall adaptive performance in this study was higher than previous studies (Naami et al., 2014).

The reason for this finding would be that in the recent years, public hospital reform has accelerated the development and change of the nursing management system, promoting head nurses to further improve themselves in order to meet the new standards on their evaluations and annual assessments. With the rapid development of information technology, it has played an increasingly important role in aspect of the promotion of nursing quality and safety management. Information technology such as mobile information workstation, nursing quality management data platforms application, and the use of web technologies for distance training or learning in nursing management is valued by nursing administrators. Meanwhile, the nature of head nurses' duties has changed with application of information technology. Thus, the head nurses need to continually update their knowledge or skills to follow the rapid change in work. Xenikou & Simosi (2006) stated that for managers to perform their roles successfully, they must be able to address tasks effectively and also be able to overcome social challenges. This means that head nurses must adapt to and

overcome the changing needs of the external environment of society and the internal environment of the organization if they want to have the ability to perform their management duties. Thus, these factors may increase head nurses' overall adaptive performance.

In addition, the results of this study showed that the creativity of adaptive performance dimension by head nurse was at a moderate level. The results of this study was inconsistent with the result of a previous study (Charbonnier-Voirin & Roussel, 2012). A possible explanation could be that head nurses' inadequate ability in scientific research may result in weak creativity. The study of Zhang, Wang, Hong & Wang (2014) also reported that head nurses' scientific research and critical thinking ability had the lowest scores in all core competencies. In China, training in scientific research ability is done in master's degree courses (Deng, 2015), and in this study, only 3.7% of the participants had master's degrees compared with 74.84% of the participants who had bachelor's degrees. This may mean that the inadequate knowledge of head nurses in scientific research may influence their innovation ability and critical thinking ability, as well as influence creativity. Thus, these reasons may explain head nurses' creativity at a moderate level.

Relationships between self- efficacy and adaptive performance

The results showed a moderate positive correlation between self-efficacy and adaptive performance of head nurses (Table 1), which was consistent with the results of previous studies (Du & Wang, 2012; Naami, 2014; Marques-Quinteiro, 2015). Since self-efficacy is an overall confidence or belief of one's coping ability across a wide range of demanding or novel situations and can influence an individual's behavior (Schwarzer, 1994). That is, when the head nurses encounter new demands or new environments, their confidence or belief can help them to change their behavior and strive to achieve their goals. Luthans (2002) also stated that self-efficacy could increase adaptive performance through increasing confidence in one's ability to succeed in completing job-related duties.

Conclusions and Recommendations

The results of the study showed that the overall self-efficacy of the participants' mean score was lower than an international norm value. The overall mean score of adaptive performance was at a high level. Also, there was a significant moderate positive relationship between self-efficacy and adaptive performance of head nurses in Affiliated Hospitals of Dali University, the People's Republic of China. The results of the study provide valuable information to nursing administrators in Affiliated Hospitals of Dali University to understand the relationship between self-efficacy and adaptive performance among head nurses. Therefore, nursing administrators should formulate corresponding strategies and adopt an intervention program to increase the self-efficacy and adaptive performance of head nurses.

Recommendation

Further research should be conducted in other types of hospitals or in other regions of China. Further study can involve a predictive study on factors such as, extraversion and conscientiousness of personality traits, and transformational leadership related to adaptive performance among head nurses.

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