Work Engagement and Proactive Work Behavior of Head Nurses in University-Affiliated Hospitals, the People's Republic of China*
ความผูกพันในงานและพฤติกรรมการทำงานเชิงรุกของหัวหน้าหอผู้ป่วย ในโรงพยาบาลในเครือมหาวิทยาลัย สาธารณรัฐประชาชนจีน*

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Abstract

Work engagement and proactive work behavior are important factors affecting quality of nursing service. This study aimed to examine the relationship between work engagement and proactive work behavior among head nurses. The sample included 225 head nurses who worked for university-affiliated hospitals in Yunnan province, the People's Republic of China. Research instruments consisted of the Utrecht Work Engagement Scale and the Proactive Work Behavior Scale, with Cronbach's alpha coefficients of 0.87 and 0.92, respectively. Data was analyzed using descriptive statistics and Pearson's product-moment correlation coefficient.

Results revealed that head nurses perceived overall work engagement at a moderate level ($\overline{X}$ = 3.63, SD = 0.94) and overall proactive work behavior at a moderate level ($\overline{X}$ = 43.09, SD = 7.69). There was a statistically significant positive relationship between work engagement and proactive work behavior (r = 0.56, p < 0.01).

The results of this study provide information for hospital administrators and nursing directors to improve work engagement, which will enhance proactive work behavior among head nurses at university-affiliated hospitals in Yunnan province, the People's Republic of China.

Keywords: Work engagement; Proactive work behavior; Head nurses; University-affiliated hospitals; The People's Republic of China

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บทคัดย่อ

    ความผูกพันในงานและพฤติกรรมการทำงานเชิงรุกเป็นปัจจัยสำคัญต่อการเกิดคุณภาพการบริการพยาบาล การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความสัมพันธ์ระหว่างความผูกพันในงานกับพฤติกรรมการทำงานเชิงรุกของหัวหน้าหอผู้ป่วย กลุ่มตัวอย่างประกอบด้วยหัวหน้าหอผู้ป่วยที่ปฏิบัติงานในโรงพยาบาลเครือมหาวิทยาลัย มณฑลยูนนาน สาธารณรัฐประชาชนจีนจำนวน 225 คน เครื่องมือที่ใช้ในการวิจัยประกอบด้วยแบบวัดความผูกพันในงานยูเทรทซ์ และแบบวัดพฤติกรรมการทำงานเชิงรุก ซึ่งมีค่า Cronbach's alpha coefficient เท่ากับ 0.87 และ 0.92 ตามลำดับ วิเคราะห์ข้อมูลโดยใช้สถิติพรรณนา และสถิติ Pearson's product-moment correlation coefficient

    ผลการวิจัยพบว่า หัวหน้าหอผู้ป่วยรับรู้ความผูกพันในงานโดยรวมในระดับปานกลาง ($\overline{X}$ = 3.63, SD = 0.94) รับรู้พฤติกรรมการทำงานเชิงรุกโดยรวมในระดับปานกลาง ($\overline{X}$ = 43.09, SD = 7.69) และความผูกพันในงานมีความสัมพันธ์ทางบวกกับพฤติกรรมการทำงานเชิงรุกอย่างมีนัยสำคัญทางสถิติ (r = 0.56, p < 0.01)

    ผลการวิจัยครั้งนี้ เป็นข้อมูลสำหรับผู้บริหารของโรงพยาบาลและหัวหน้าฝ่ายการพยาบาลในการปรับปรุงความผูกพันในงานซึ่งจะช่วยเพิ่มพฤติกรรมการทำงานเชิงรุกของหัวหน้าหอผู้ป่วย ในโรงพยาบาลเครือมหาวิทยาลัย ในมณฑลยูนนาน สาธารณรัฐประชาชนจีน

คำสำคัญ: ความผูกพันในงาน พฤติกรรมการทำงานเชิงรุก หัวหน้าหอผู้ป่วย โรงพยาบาลเครือมหาวิทยาลัย
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Background and Significance

According to rapid changes in the social environments of organizations, employees must plan ahead and prepare in advance for potential threats or dangers by being proactive to achieve long-term goals (Belschak & Hartog, 2010). Especially in healthcare settings, nurses, as health care professionals, have the responsibility to make an effort to optimize care processes and manage problems to provide high quality care by taking proactive behavior at work (Farrell, 2012). Therefore, proactive work behavior is important for nurses.

Proactive work behavior is defined as self-initiated and anticipatory action to improve internal organization by transforming and optimizing the situation of oneself or one's environment (Parker & Collins, 2010). Proactive work behavior contains four dimensions including problem prevention, individual innovation, voice, and taking charge. Problem prevention refers to actions by which individuals make efforts to explore the essence of problems and optimize procedures to prevent their future recurrence; individual innovation refers to actions through which individuals become aware of new and emerging opportunities, generate new ideas, and seek to put those ideas into action; voice refers to actions by which individuals express constructive challenges to improve the standard procedures of their work surroundings; and taking charge refers to actions which individuals attempt to improve some approach work that was conducted, including work structures, practice and procedures. Proactive work behavior contributes to positive organizational, team, and individual outcomes. In healthcare contexts, nurses with high levels of proactive work behavior are likely to implement safe, effective, timely, efficient, equitable, and patient-centered nursing care (Mitchell, 2008). Head nurses, especially, are important persons in achieving nursing and hospitals' goals. Head nurses also act as mediators, trainers, and promoters in their units (Wang & Liu, 2015; Chinese Hospital Association, 2011) which requires proactive work behavior. However, a review of the literature found only one study conducted among nurse managers which was at a slightly high level ($\overline{X}$ = 4.10, SD = 0.48) (Warshawsky, Havens, & Knafl, 2012).

Work engagement was found to be associated with proactive work behavior. Work engagement is defined as a positive, fulfilling and work-related state of mind (Schaufeli, Salanova, González-Romá, & Bakker, 2002). It includes three dimensions: vigor, dedication, and absorption. Vigor refers to a high level of energy and mental resilience while working, and the willingness to involve effort in one's work and to persist even in the presence of difficulties. Dedication refers to being strongly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption refers to being fully concentrated on and happily engrossed in one's work, whereby when time passes quickly, the individual has difficulties detaching themself from their work. Zhou and Zhao (2010) found that work engagement was at a moderate level ($\overline{X}$ = 3.21, SD = 1.09) among nurses in a tertiary A general hospital in Chengdu while Zhang and Zhen (2015) found that work engagement was at moderate levels ($\overline{X}$ = 3.58, SD = 1.17) among registered nurses in tertiary A general hospitals in

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Beijing. Work engagement among nurses in the Affiliated Hospitals of Kunming Medical University in Yunnan province was also at a moderate level ($\overline{X}$ = 3.64, SD = 1.07) (Feng, Akkadechanunt, & Chontawan, 2012). Work engagement was considered as intrinsic motivation to carry out a high level of proactivity at work (Salanova & Schaufeli, 2008) which contributed to manifesting good attitudes about work (Zhang, 2014), completing jobs positively (Kim, Cable, Kim, & Jie, 2009), and providing higher quality nursing care to patients (Farrell, 2012). According to the literature review, many studies have confirmed the relationship between work engagement and proactive work behavior (Salanova & Schaufeli, 2008; Xu, Xi, & Zhao, 2015). Additionally, Warshawsky et al. (2012) found, among nurses' managers, that work engagement was positively related to proactive work behavior (r = 0.43, p < 0.001).

In the People's Republic of China, university-affiliated hospitals are public hospitals that are affiliated with universities. They provide high-level, specialized medical and health services for several areas, carry out research tasks, and provide a high degree of education. The objectives of university-affiliated hospitals' nursing management are to improve the quality of nursing care and management (Chinese Hospital Association, 2011). Moreover, the People's Republic of China, especially Yunnan province, is dealing with a very serious nursing shortage compared to other countries (Chinese News Network, 2016). Nurse shortages result in heavy workloads and difficulties with management. The crushing workloads, decentralization of energy, and disharmonious working environment may influence the work engagement of head nurses. Also, the proactive work behavior of head nurses would be a huge challenge as Ma (2011) reported that, under new situations and new challenges, technological innovation can achieve the goals of realizing sustainable and rapid development of hospitals. Therefore, many hospitals have tried to improve head nurses' innovation (Zhu, 2012; Zhou & Liu, 2006). However, head nurses' innovative behavior was at a moderate level (Bao, Zhang, Zhang, Wang, & Qia, 2013), while only 6.65% of nurses were involved in grading nursing care for patients (Zhang, 2016) which represents the role of taking charge of nurses. However, little is known about the work engagement and proactive work behavior of head nurses and its relationship among head nurses in university-affiliated hospitals in the People's Republic of China.

Therefore, this study aims to examine the levels of the two variables and their relationship in order to provide useful information for improving work engagement and proactive work behavior in these hospitals.

Research Objectives

The objectives of this study were to explore the levels of work engagement and proactive work behavior, as well as the relationship between these two variables among head nurses in university-affiliated hospitals in Kunming.

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Conceptual Framework

The research framework of this study was based on concepts of work engagement (Schaufeli et al., 2002) and proactive work behavior (Parker & Collins, 2010). Work engagement is a positive, fulfilling and work-related state of mind that includes three dimensions, namely, vigor, dedication and absorption (Schaufeli et al., 2002). Proactive work behavior is self-initiated and anticipatory action to improve internal organization by transforming and optimizing one's condition or environment. Proactive work behavior contains four dimensions, namely problem prevention, individual innovation, voice, and taking charge. Individuals with high levels of work engagement reflect the willingness to take the initiative to work and to increase the likelihood of displaying proactive behavior at work.

Methodology

A descriptive correlational research design was used.

Population and Sample

The target population was 484 head nurses who had been appointed as first-line nurse managers in seven university-affiliated hospitals. Taro Yamane's (1973) formula was used to calculate the sample size, with a level of 0.05 (Polit, 2009). Considering possible loss of subjects, 20% of the sample size was added (Best & Kahn, 2005), for a total sample size of 262. Multistage sampling was conducted to recruit subjects as follows: 1) using the ratio of 2:1, 4 out of 8 university hospitals were selected using simple random sampling; 2) proportional random sampling was used to select the sample from 4 hospitals; 3) the sample from each hospital was selected randomly using the lottery method. The researcher distributed 262 questionnaires. 225 (85.88%) of the distributed questionnaires were completed and used for analysis.

Research Instruments

The instruments used in this study consisted of three parts:

1. The demographic data form was used to collect information about the head nurses, such as age, gender, number of years as a head nurse, training about proactive work behavior, and membership on committees.

2. The Chinese version of the 17-item Utrecht Work Engagement Scale (UWES) (Schaufeli & Bakker, 2003) contained 17 items including vigor (6 items), dedication (5 items) and absorption (6 items) and was scored out of seven points, from 0 (never) to 6 (always). Score interpretation included five levels: very low, low, average, high, and very high. The construct validity was confirmed (RMSEA = 0.05, CFI = 0.97, NFI = 0.93).

3. The Proactive Work Behavior Scale (PWBS) (Parker & Collins, 2010) was translated into Chinese (Sperber, 2004); contained 13 items including problem prevention (3 items), individual innovation (3 items), voice (4 items), and taking charge (3 items); and was scored out of five points, from 1 (very infrequently) to 5 (very frequently). Score interpretation had three levels: low, moderate, and high (Kirk, 2007). The construct validity of the PWBS was confirmed (RMSEA

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= 0.05, CFI=0.96, NFI = 0.96). The PWBS was translated into Chinese by the researcher using the back translation process (Sperber, 2004). The Cronbach's alpha coefficients of the UWES and PWB were 0.87 and 0.92, respectively.

Ethical Considerations

The research proposal obtained approval from the Research Ethics Review Committee, Faculty of Nursing, Chiang Mai University, and permission to collect data was obtained from each hospital director. The researcher assured the protection of participants' human rights using an information sheet to inform subjects that they could freely participate or withdraw from the study at any time. Confidentiality and anonymity for each subject were guaranteed. Information provided by subjects was used only for the purpose of this study. Volunteer research agreement forms were signed by those who agreed to participate in this study.

Data Collection

After receiving approval from the Research Ethics Review Committee, the researcher submitted an official letter to the directors of hospitals in Yunnan province, to ask for permission to collect data. The researcher contacted the research coordinator of each hospital to explain the objectives of the study and the method of distributing and collecting questionnaires. Then, the researcher gave the research coordinator the package of questionnaires including an information sheet for study participants, a volunteer research agreement form, the questionnaires, and two envelopes.

The coordinator of each hospital distributed the questionnaires to all participants. After the questionnaires were completed, the research coordinator contacted the researcher to mail back the questionnaires.

Data Analysis

Descriptive and inference statistics were used to analyze data by using a statistical software package. The statistical significance level of alpha was set at 0.05. Descriptive statistics were used to analyze the demographic data. Frequency, percentage, mean, and standard deviation were used to analyze demographic data, scores of work engagement, and proactive work behavior. Pearson's product-moment correlation was used to analyze the relationship between work engagement and proactive work behavior since data was normally distributed.

Results

The results of this study were as follows:

Demographic characteristics

Most participants were female (96.44%) and had an average age of 41 years old (SD = 6.82, Range = 27-55); 92.89% of participants were married. Participants had an average number of children of 0.98 (SD = 0.41, Range = 0-2). Most participants had a bachelor's degree (83.56%). The average number of years working as a nurse was 20.12 years (SD = 8.20, Range = 4-36), and the average number of years which participants had been head nurses was 7.51 years (SD = 6.01, Range = 1-28). The average number of years working in the unit was 13.60 (SD = 8.74,

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Range = 1-36), while 49.33% of participants received RMB 5000-RMB 7000 per month. Regarding work department, 63.11% of participants came from surgical and medical departments. More than two-thirds (70.22%) had not taken part in training related to proactive behavior, and a slightly higher percentage (72.00%) were not members of professional committees.

Work engagement

The levels of overall work engagement and its sub-dimensions, namely vigor, dedication, and absorption, were perceived by participants at moderate levels (Table 1).

Table 1 Mean, Standard Deviation and Level of Work Engagement (n = 225)

Work Engagement	Mean	SD	Level
Overall	3.63	0.94	Moderate
Vigor	3.57	0.92	Moderate
Dedication	3.74	1.09	Moderate
Absorption	3.60	1.01	Moderate

Proactive work behavior

The levels of overall proactive work behavior and its sub-dimensions, namely problem prevention, individual innovation, voice, and taking charge, were perceived by participants at moderate levels (Table 2).

Table 2 Mean, Standard Deviation and Level of Proactive Work Behavior (n = 225)

Proactive work behavior	Mean	SD	Level
Overall	43.09	7.69	Moderate
Problem prevention	10.10	2.31	Moderate
Individual innovation	9.10	2.34	Moderate
Voice	13.45	2.68	Moderate
Taking charge	10.45	2.42	Moderate

Regarding the relationship between work engagement and proactive work behavior, the results showed that there was a strong positive relationship between work engagement and proactive work behavior among participants (r = 0.56, p < .01).

Discussion

The results of this study indicated that the level of overall work engagement was perceived by head nurses at a moderate level. The result was consistent with that of a previous study by Feng, Akkadechanunt, and Chontawan (2012) who found that work engagement among nurses in affiliated hospitals of Kunming Medical University was at a moderate level ($\overline{X}$ = 3.64, SD = 1.07). However, this result was inconsistent with that of a previous study by Warshawsky et al. (2012) who found that work engagement among nurse managers in North Carolina was at a

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high level ($\overline{X}$ = 6.01, SD = 0.83).

The moderate level of work engagement would be because head nurses felt that they made effort in their work. Head nurses put in effort and energy to achieve hospital goals (Chinese Hospital Association, 2016) by identifying and solving problems, thereby assuring quality and efficiency of nursing care. However, the diversity of nursing staff members' thinking (Medical Education Network, 2013) may cause the power of head nurses to deteriorate. Moreover, head nurses may encounter obstacles due to a lack of medical equipment and staffing which may decrease their willingness to put in an effort at work, as Su et al. (2017) stated that staffing and material shortages have an impact on head nurses' involvement in work.

Moreover, the nature of nursing work and the criteria for being appointed to be head nurses induced feelings of pride in them (Su et al., 2017). The performance appraisal system of high-quality nursing may inspire head nurses to mobilize the enthusiasm of their work (Wang et al., 2012). In addition, head nurses are challenged to management complex clinical nursing practice. However, head nurses work under policies, regulations, and rules which may make head nurses feel a lack of challenges while working, as Fang (2007) said that head nurses cannot fully utilize their own strengths and sometimes feel that their jobs are not challenging. Furthermore, head nurses have many jobs, such as clinical care and management jobs (Yu, 2011; Wang & Liu, 2015; Hua, Chen, & Li, 2014). These require head nurses to concentrate on their jobs so that they forget the time and cannot detach from their jobs. At the same time, many jobs increase head nurses' workload which may affect head nurses' happiness during work, as Martina (2015) stated that workload increased stress and decreased job satisfaction.

The overall work engagement perceived by head nurses at a moderate level may be due to the age of head nurses. In this study, 45.78% of the head nurses were more than 40 years old, whereas 48.44% of the head nurses were less than 40 years old. This may affect perception of work engagement since Warshawsky et al. (2012) found that age was significantly positively associated with work engagement (p = 0.01). Moreover, Mahboubi et al. (2015) found that there was a significant relationship between work engagement and experience (p = 0.04). In this study, only 50.22% of the head nurses had been head nurses for more than five years, so that lack of experience may result in the perception of work engagement at a moderate level.

The results of this study showed that head nurses perceived overall proactive work behavior and its four dimensions at moderate levels. This result was inconsistent with that of Warshawsky et al. (2012) who found that proactive work behavior among nurse managers in North Carolina was at a slightly high level ($\overline{X}$ = 4.10, SD = 0.48). The moderate level of proactive work behavior could be due to the duties of head nurses. When incidents occur, head nurses are obliged to find out the cause, dealing with incidents (Wang & Liu, 2015) and preventing adverse events (Medical Education Network, 2015). Therefore, head nurses perceived that they

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do problem prevention. However, in this study, 49.78% of the head nurses had less than five years' experience, and they may take time to solve problems rather than prevent problems, as Hua et al. (2014) stated that experienced head nurses were more likely to prevent problems than less experienced head nurses. In addition, there were many incidents in the hospitals, such as hospital-acquired infection, pressure ulcers, medical errors, and adverse drug events (Zhang, 2012; Tao et al., 2014; Cui et al., 2013). Therefore, head nurses may take time to deal with these incidents instead of preventing them.

Another explanation might be that innovation, which is an impetus for nursing development (Hospital Management Research Institute of Ministry of Health, 2013), forces head nurses to be aware of new, emerging opportunities and generates ideas to improve services. There are many hospitals that promote the innovation of head nurses by planning innovation competitions and carrying out innovation policies (Zhu, 2012; Zhou & Liu, 2006). However, few opportunities and less experience narrowed down head nurses' room for searching techniques and product ideas (Deng & Wang, 2010).

Moreover, head nurses act as managers, exploiters, mentors, and educators in units (Chase, 2010; Medical Education Network, 2015; Hua et al., 2014) which forces them to express their opinions and encourage others to participate in that issue. However, head nurses lack opportunities to express their ideas at the hospital level. Moreover, only 28% of head nurses were members of nursing committees, which may result in the lack of power or opportunities to express their opinions. Furthermore, head nurses are expected to do more to improve work approaches (Huang & Feng, 2016) and translate administrative visions and missions into actual clinical practice (Chase, 2010). However, head nurses could not take charge in some work areas, such as quality assurance, nursing standards, guidelines (Medical Education Network, 2015), or hospital missions (Chand, Chontawan, & Akkadechanunt, 2013). Additionally, some head nurses cannot fully understand or control nursing procedures because of their lack of experience and skills, and this limits them in carrying out nursing procedures and improving work procedures (Liu, 2017).

According to Warshawsky et al. (2012), nurse managers' experiences were related to proactive work behavior. In this study, 52.44% of head nurses had worked in their unit for more than 10 years, and 50.22% had been there for more than 5 years. This study also found that only 29.78% of the head nurses took part in training about proactive work behavior. This may affect the proactive work behaviors of head nurses because less experience and less training limit the abilities of head nurses to create new techniques, search for causes of problems, optimize work procedures, and express ideas. Therefore, head nurses who worked in university-affiliated hospitals perceived proactive work behavior at a moderate level.

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Work Engagement and Proactive Work Behavior of Head Nurses in
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ความผูกพันในงานและพฤติกรรมการทำงานเชิงรุกของหัวหน้าหอผู้ป่วย
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Relationship between work engagement and proactive work behavior

The results of this study showed that there was a significant positive correlation between overall work engagement and proactive work behavior (r = 0.56, p < 0.01). It can be explained that work engagement is a state in which an engaged employee feels energized, strongly involved, and fully concentrated on their work (Schaufeli et al., 2002). Work engagement encourages employees to take the initiative, manifest good attitudes (Zhang, 2014), put their energy into their work, and positively complete their jobs (Kim et al., 2009). Therefore, work engagement can be considered as an engine to promote proactive behavior while working (Salanova & Schaufeli, 2008). In this study, with challenges, inspiration, significance, and enthusiasm, engaged head nurses felt full of energy, and actively took charge in their duties and roles, as well as being willing to express their opinions and contribute their ideas for improving work approaches and the work environment. Also, engaged head nurses can fully concentrate, and be happily engrossed in their work, finding it difficult to detach from their work; they are devoted to improving their work approaches, and prefer to participate in management of new technologies and projects (Zhu, 2012). This may have resulted in the positive relationship between work engagement and proactive work behavior among head nurses in this study.

Conclusion

This descriptive correlational study was conducted with 225 head nurses in university-affiliated hospitals in the People's Republic of China. Findings showed that head nurses perceived overall work engagement, the sub-dimensions of work engagement, and proactive work behavior at moderate levels. Findings also showed that work engagement had a strong positive relationship with proactive work behavior.

Implications of Research Findings

Based on the results of this study, nursing administrators should improve the work engagement and the proactive work behavior of head nurses by providing opportunities for them to fully use their strengths and abilities; giving them power to optimize their work; supporting them with resources for their work; reinforcing the importance of head nurses to achievement of hospital goals; and assigning head nurses meaningful and challenging jobs. Moreover, nursing administrators should develop programs, activities, and motivation systems to improve work engagement which will enhance the proactive work behavior of head nurses and, finally, enhance quality of care.

Recommendations for Further Research

This study was conducted at university-affiliated tertiary hospitals. Hence, future research should be conducted in primary and secondary hospitals which have different contexts, policies, resources, and support. Moreover, there are various factors associated with proactive work behavior such as role breadth, self-efficacy, job autonomy, the psychological safety climate, interpersonal relationships, and hope. Future research should include conducting a relational or

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predictive study on the factors related to proactive work behavior among head nurses in university-affiliated hospitals.

Acknowledgements

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