



The relationships among nurses' job characteristics and attitudes toward web-based continuing learning

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SUMMARY

The purpose of this study was to explore the relationships between job characteristics (job demands, job control and social support) and nurses' attitudes toward web-based continuing learning. A total of 221 in-service nurses from hospitals in Taiwan were surveyed. The Attitudes toward Web-based Continuing Learning Survey (AWCL) was employed as the outcome variables, and the Chinese version Job Characteristic Questionnaire (C-JCQ) was administered to assess the predictors for explaining the nurses' attitudes toward web-based continuing learning. To examine the relationships among these variables, hierarchical regression was conducted. The results of the regression analysis revealed that job control and social support positively associated with nurses' attitudes toward web-based continuing learning. However, the relationship of job demands to such learning was not significant. Moreover, a significant demands \times job control interaction was found, but the job demands \times social support interaction had no significant relationships with attitudes toward web-based continuing learning.

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Introduction

With increasing complexity of healthcare systems, it is critical for nurses to take part in continuing learning to enhance their knowledge and improve their clinical practice (e.g., Lu et al., 2009). For health care professionals, web-based learning is an effective continuing education and is rising in popularity (Cobb, 2004). It has been reported that web-based continuing learning can satisfy nurses' personal learning needs and job demands (Yu et al., 2007), and can offer flexibility and abundant resources of learning (Wilkinson et al., 2004). In a previous study, the majority of nurses reported that web-based learning was convenient and interesting; moreover, it may improve their practice (Atack, 2003). The importance of web-based learning for nurses' continuing education has been raised in recent research (e.g., Liang and Wu, 2010; Liang et al., 2011; Lu et al., 2009).

Nurses' main motivations to undertake web-based continuing learning include personal interest, career promotion, life enrichment, external expectation, practical enhancement, and social connection (Liang and Wu, 2010). Heavy workloads and busyness of ward are major barriers to take up such learning (Bogossian and Kellett, 2010; Chen et al., 2008). Moreover, nurse's personal characteristics such as age, education, nursing job experience and job positions should be concerned (Chen

et al., 2008; Yu and Yang, 2006). The Internet self-efficacy and computer competence were also determinants of nurses' web-based learning (Liang and Wu, 2010; Liang et al., 2011). In addition, organizational influence factors in clinical setting, including access of technology and Internet resources (Atack, 2003; Chen et al., 2008), learning environments such as related policies and administrative support (e.g., Atack, 2003) as well as types of health care settings should be concerned (Chen et al., 2008; Yu and Yang, 2006).

In order to increase nurses' utilization of web-based continuing learning, it is important to explore the possible factors predicting their attitudes towards it. Previous studies have reached the consensus on the destructive role of workloads and time pressure in nurses' online learning (e.g., Bogossian and Kellett, 2010; Yu and Yang, 2006; Yu et al., 2007). Although there has been a growing interest in exploring nurses' web-based learning, there is still a need in examining the job characteristics which may influence such learning.

Literature Review

Job Demand–Control (JDC) Model and Learning in the Workplace

In Karasek's (1979) Job Demand–Control model (the JDC model), it is assumed that the work environment could be characterized by combinations of job characteristics (i.e., job demands and the job control to cope with these demands). Job demands are defined as work load and time pressure, and job control is conceptualized as workers' authority to make decisions and the extent to which skill is utilized over their tasks (Häusser et al., 2010; Willemse et al., 2012). The combinations of job demands and job control distinguish jobs as four types, that is,

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active (high demand/high control), high strain (high demand/low control), passive (low demand/low control) and low strain (low demand/high control) (Karasek and Theorell, 1990). The JDC model has been employed in numerous studies; however, research has usually revealed adverse effects of job characteristics on employees' health (e.g., de Jonge et al., 2010), job satisfaction and emotional exhaustion (Willemse et al., 2012) as well as organizational behaviors in work situations (e.g., Chiu et al., 2009). It has been proposed that more attention to the positive consequences of work characteristics is desirable (Taris and Kompier, 2004). Particularly, the lack of implications of the model for learning is of concern (Taris et al., 2003).

The JDC model has been expanded to link job characteristics to both outcomes of strain and active learning (Karasek, 1998). Karasek and Theorell (1990) hypothesized that having decision latitude over work processes will reduce a worker's stress but increase learning, while demands will increase both learning and stress. But, job demands associated with lack of control are not associated with increased learning (Karasek and Theorell, 1990).

When high job control occurs in conjunction with high job demands but is not overwhelming, learning and growth are the predicted behavioral outcomes; this is known as the active learning hypothesis (Karasek, 1998). Incremental additions to competence (i.e., learning) are hypothesized to occur when the challenges in the situation are matched by the individual's control over alternatives or skills in dealing with those challenges (Karasek and Theorell, 1990).

By adding social support, social interaction and work-related support from coworkers, Johnson and Hall (1988) expanded the JDC model. Karasek and Theorell (1990) indicated that social support is helpful to acquiring new knowledge. It has also been proposed that the JDC model enlarged with social support is suitable for predicting the learning behaviors and continuous development of employees (Ouweneel et al., 2009).

Recently, those predictors of the model have been employed as determinants of active learning outcomes such as job satisfaction and perceived mastery (e.g., Bradley, 2010; Mikkelsen et al., 2005). However, Taris et al. (2003) conducted a review of the relevant literature and concluded that few studies have addressed the learning-oriented predictions of the JDC model; besides, the outcomes employed in these studies are not always the conceivable representatives of active learning. It was included that, to date, too little research has been done on Karasek's learning hypothesis (Gijbels et al., 2010).

Job Characteristics and Work-related Learning

The study results of the active learning hypothesis remain divergent. For example, de Lange et al. (2010) provide evidence for the positive effects of job demands in predicting learning-related behavior. However, Taris et al. (2003) indicated that higher job demands are associated with lower learning motivation.

On the other hand, it has been found that high job control positively correlates with motivation to learn new behavior patterns (Taris et al., 2003) and learning-related behavior (de Lange et al., 2010). In addition, Taris and Schreursb (2009) revealed that job control and social support are positively associated with learning behaviors and professional efficacy. Nevertheless, Gijbels et al. (2010) indicated that job demands, job control and social support are not associated with more work-related learning behavior.

Several studies have provided evidence for the main effects of demands, control, and support on learning, but the demand–control interaction has received less attention (Taris and Kompier, 2004). It has been reported that only 9 out of 90 tests provide unqualified support for the demand–control interaction effect (Taris, 2006). There is still an argument concerning whether the interaction of demands and control is required in the JDC model (Taris and Kompier, 2004).

Factors Correlate to Job Characteristics

Several studies have identified various personal characteristics including age, tenure, educational level and work hours, which may have correlations with job characteristics (e.g., de Jonge et al., 2010; van Ruysseveldt and van Dijke, 2011; Willemse et al., 2012). In addition, the differences of job characteristics among public/private sectors (Macklin et al., 2006) and various health care sectors (Kuusio et al., 2012) have also been discussed. In Taiwan, hospitals in different settings (i.e. medical centers vs. hospitals and private vs. public hospitals) have different duties (Chiu et al., 2009), and in general, the workload in medical centers and private hospitals may be heavier than others.

Research Questions

In spite of the importance of web-based learning for nurses, however, research in its application for nurses' continuing learning is still in its early stage. Since there are several arguments about the relationships between job characteristics and work-related learning, there is a need to further clarify these relationships. Based on the JDC model, this study aims to explore the relationships of job demands, job control, social support as well as their interactions with nurses' attitudes toward web-based continuing learning.

1. Do the nurses' demographics have relationships with their web-based continuing learning?
2. Are nurses' job demands correlated to their attitudes toward web-based continuing learning?
3. Does nurses' job control have relationships with their attitudes toward web-based continuing learning?
4. Can social support be related to nurses' attitudes toward web-based continuing learning?
5. Do interactions of job demands \times job control and job demands \times social have relationships with nurses' attitudes toward web-based continuing learning?

Method

Design

This study conducted a survey research method. Structured, mainly Likert-type, questionnaires were utilized to collect research data. Six nurse administrators at hospitals in northern, central, and southern regions of Taiwan were requested to offer their assistance in distributing and collecting questionnaires. The questionnaires were distributed to two or three nursing stations randomly selected by the administrators in each facility. All participants recruited were full-time clinical nurses. Nurses without experience in using the Internet were excluded.

Sample

The participants included in this study were 221 in-service nurses (219 females) from hospitals in the northern, central, and southern regions of Taiwan. Among them, 86 (38.9%) worked in medical centers, while 135 (61.1%) worked in regional hospitals. There were 142 (64.3%) nurses in private hospitals and 79 (35.7%) in the public sector.

Most of them were female except for two male nurses, while 106 (48%) were aged from 21 to 30, 67 (30.3%) were aged between 31 and 40, and 39 (17.6%) were from 41 to 50. The education levels of participants' were bachelor's degree (67%), junior college (28%), and master's degree (5%), while their years of nursing work experience ranged from 0.25 to 35.5 years, with an average of 10.61 years ($SD = 8.9$). The job positions of them were general nurse (16.74%), registered nurse (67.42%) and head nurse (15.84%).

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