Relationships Between Job Satisfaction and Job Demand, Job Control, Social Support, and Depression in Iranian Nurses

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ABSTRACT

Background: Nurses often experience a wide variety of stressful situations. Excessive work stress influences the physical and mental health of nurses and decreases their life quality and professional efficacy. In addition, high levels of psychological stress may cause job dissatisfaction and job strain.

Purpose: The objective of this study was to explore the relationship between several work-related risk factors and job satisfaction in Iranian nurses.

Methods: A cross-sectional study was conducted on 730 nurses from four public hospitals in, respectively, northern, southern, eastern, and western Iran. Variables in the job demand–control–support (JDCS) model were measured using the Job Content Questionnaire, and job satisfaction was measured using the Minnesota Satisfaction Questionnaire.

Results: The mean score for job satisfaction was 62.94 ± 14.24, which is considered moderate. Nurses with a low level of job satisfaction had significantly higher psychological and physical job demands (p < .05). Significant relationships were found between job satisfaction and several dimensions of the JDCS model, including psychological job demands (β = −0.11, p < .001), physical job demands (β = −0.86, p = .004), skill discretion (β = 0.48, p = .033), decision authority (β = 0.43, p = .028), and supervisor support (β = 1.85, p = .004). The sociodemographic and JDCS model variables used in this study explained 42% of the variation in job satisfaction (R² = .42).

Conclusions/Implications for Practice: Enhancing the job satisfaction of nurses is possible by creating a balance between job demands, job control, and social support.

KEY WORDS:
Job Content Questionnaire, job demand-control–support model, Minnesota Satisfaction Questionnaire, nurses.

Introduction

Job satisfaction impacts significantly on productivity and work absenteeism in nurses. Previous studies have shown that increasing job satisfaction in nurses results in higher quality medical services and leads to better healthcare outcomes and higher patient satisfaction (Janicijevic et al., 2013; Negahban et al., 2017). Job satisfaction is a complicated subject, with low levels of job satisfaction associated with increased intention to leave the nursing profession (De Simone & Planta, 2017). Researchers are currently assessing the critical factors that affect job satisfaction to establish and improve evidence-based job satisfaction theories and management interventions for nurses. Demographic, occupational characteristic, and organizational factors are known to affect job satisfaction (Al Maqbali, 2015; Lu et al., 2016; Schwendimann et al., 2016).

Numerous studies have reported on a strong negative relationship between occupational stress and job satisfaction, suggesting that occupational stress in nurses may lead to intention to leave and reduce nursing quality (Bagheri Hosseinabadi et al., 2018; Gadirzadeh et al., 2017; Sveinsdóttir et al., 2006). Occupational stress has been described as negative emotional and physical reactions that occur when job demands (psychological or physical) do not match a worker’s capabilities (Rao & Chandraiah, 2012).

Job demand is a factor that plays a key role in increasing occupational stress. Nursing is a job known for its high psychological and physical demands (Chen et al., 2015). A study by Hülsheger and Schewe (2011) showed that high psychological demand often causes low self-monitoring, which has negative effects on employees’ general well-being. Several studies have been conducted to identify the risk factors of occupational stress. These studies have developed models of job/occupational stress such as the job demand–control–

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support (JDCS) model and highlighted the harmful effects of occupational stress on worker health (Negussie & Kaur, 2016; Rhee, 2010; Sharma et al., 2014). On the basis of the JDCS model, high job demand and low job control in addition to increasing physical and psychological stress may cause cardiovascular diseases and mental health problems (Nieuwenhuijzen et al., 2010).

Karasek has defined high job demand as high workload. Using the JDCS model, job demand and social support (including supervisor and coworkers support) were shown to influence job satisfaction in Ethiopian nurses (Negussie & Kaur, 2016). Furthermore, studies have shown that job satisfaction and social support in nurses may be affected by burnout (Hamaideh, 2011). Job control, defined as the extent of a person’s independence to make decisions and control actions during their occupational tasks, is negatively correlated with job dissatisfaction (Clumec et al., 2009).

Demographic variables such as age, gender, and marital status are known to influence job satisfaction (Tabatabaei et al., 2013), and many efforts have been made to illustrate the relationship between job satisfaction and job-related stress (Bagheri et al., 2017; Lee et al., 2019). However, further investigation of these factors is needed, as there is wide variability among nursing work conditions, particularly in developing countries, that may exacerbate or alleviate perceived job stress (Bagheri Hosseinabadi et al., 2018; Khamisa et al., 2017).

Several studies have examined the effective factors of job satisfaction among nurses in developed countries. Because of differences between developed and developing countries in terms of healthcare systems and nurses’ job structure, more research in developing countries is desperately needed to identify occupational factors that affect job satisfaction to help health services managers improve organizational culture and nurses’ job satisfaction (Bagheri Hosseinabadi et al., 2018; Khamisa et al., 2017; San Park & Hyun Kim, 2009). Creating an appropriate organizational culture is a well-known first step to creating good working conditions (Banaszak-Holl et al., 2015). Therefore, this study was conducted to evaluate the relationship between job satisfaction and, respectively, job demand, job control, and social support among Iranian nurses.

**Methods**

**Design and Sample**

This cross-sectional study was conducted to evaluate the respective effects of physical and psychological work demands, social and coworker support, and job control on job satisfaction in nurses. Data were collected from March 2016 to February 2017.

The participants were nurses who were currently working in one of four public hospitals in, respectively, northern, southern, eastern, and western Iran (in the respective cities of Babol, Kerman, Mashhad, and Hamedan). The inclusion criteria were being a full-time nurse with more than 1-year clinical experience in the current ward. The exclusion criteria included having a second job or currently under treatment by a psychiatrist. The total number of nurses working in these hospitals was 1,687. Thus, a target sample size of 694 was calculated using the table suggested by Krejcie and Morgan (1970) to obtain a 95% confidence level and 3.5% margin of error. Nurses were selected randomly from all of the wards in the target hospitals. The questionnaires were delivered to 730 nurses, but only 701 were returned, and an additional seven questionnaires were excluded because of incompleteness.

**Data Collection**

**Sociodemographic variables**

The demographic questionnaire contained questions about age, gender, educational level, employment status, ward, clinical experience, and work status (fixed and rotating shifts).

**The job demand–control–support model**

In this study, components of the JDCS model were measured using the Job Content Questionnaire (JCQ). This questionnaire is a self-assessment tool that was designed to measure the psychological and social characteristics of occupations (Karasek et al., 1998). This questionnaire is available in several languages, including Persian, and was approved by the JCQ Center (Choobineh et al., 2011). The three dimensions of the 27-item JCQ respectively measure job demand, job control (decision latitude), and social support.

Job demand covers the physical and psychological aspects of a job that impose an ongoing physical or psychological burden on cognition and perception. Karasek described a high level of job demand as “work overload.” The amount of workload is continuously used in JDC studies to show the level of job demand for employees. In this study, job demand was measured using two scales measuring, respectively, psychological job demands and physical job demands. These scales include 10 items, including working fast, working hard, no excessive work, enough time, conflicting demands, too much physical effort, lifting heavy loads, rapid physical activity, awkward body position, and awkward arm positions. The final job demand score was obtained by summing the respective scores of these two scales.

Job control is the extent to which a person is able to make decisions and control his or her actions independently during occupational tasks. In this study, job control was measured using the two scales of skill discretion and decision authority, which included nine items, including learning new things, repetitive work, requiring creativity, high skills level, variety, developing abilities, allowing to make own decisions, little decision freedom, and lots of say. The job control score was obtained by summing the respective scores of the two scales.

Social support incorporates the concepts of perceived support in the workplace and organizational trust. In this study, social support was measured using the two scales of coworker support and supervisor support, which included eight items, including supervisor concern, supervisor attention, supervisor
helpfulness, supervisor being a good organizer, the coworker component, coworker interest, coworkers friendliness, and coworker helpfulness. The social support score was obtained by summing the respective scores of the two scales.

Each of item was scored using a Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). Scoring and calculations for each dimension were done in accordance with the JCQ user’s guide (Choobineh et al., 2011).

Job satisfaction

The aspect of job satisfaction was measured using the short Minnesota Satisfaction Questionnaire (MSQ). The MSQ is an extensively used tool for evaluating satisfaction in different occupations. This questionnaire contains 20 items that measure three facets of job satisfaction, including intrinsic satisfaction (12 items), extrinsic satisfaction (six items), and general satisfaction (two items). Intrinsic satisfaction relates to working conditions and perceptions regarding specific features of occupational tasks. Extrinsic satisfaction relates to environmental conditions and perceptions regarding job characteristics outside the workplace. The participants answered this questionnaire using a 5-point Likert scale ranging from “highly dissatisfied” to “highly satisfied” (Abugre, 2014). The Persian-version short MSQ is as valid and reliable as the original version (Abugre, 2014). The overall job satisfaction score is obtained by summing the intrinsic satisfaction, extrinsic satisfaction, and general satisfaction scale scores.

Statistical Analyses

Descriptive statistics for all of the variables were reported. The Kolmogorov–Smirnov and Levene’s tests were used to investigate the normality of quantitative data and equality of variances, respectively. Pearson correlation coefficients were used to estimate the relationship between the scales and subscales of JCQ and job satisfaction. In addition, backward, multiple linear regression was used to determine the variables with the most significant impact on job satisfaction. For regression analysis, all categorical variables were converted into dummy variables. All statistical tests were set at a significance level of $p < .05$. All analysis work was done on SPSS Version 18 (IBM, Inc., Armonk, NY, USA).

Ethical Considerations

This study was approved by the Ethics Committee of Kerman University of Medical Science (Approval No. IRB-1392.644). After gaining permission from the hospitals, the researchers visited each department in the target hospitals. The study aim was explained to the people in charge of each ward, and written permission was obtained from the authorities. After obtaining oral consent from the nurses, the purpose of the study as well as instructions regarding how the questionnaires should be completed were explained to the participants. The researchers assured the participants that the collected data would not be used for any purpose other than the study objectives and that their information would be de-identified. The participants were informed that they could leave the study at any time.

Results

Most of the participants were female and married. Over half had work experience of less than 10 years (Table 1). Most held a bachelor of science degree, over two thirds did shift work, and 71% worked more than 30 shifts per month.

Psychological and physical job demands earned the highest mean scores. The correlation results between job satisfaction and job demands, job control, and social support are shown in Table 2. In this study, job satisfaction was shown to be inversely related to psychological demand and physical demand, and direct relationships were found between job satisfaction and skill discretion, decision authority, supervisor support, and coworker support.

The correlations between JDJS model variables and job satisfaction showed job satisfaction as related inversely to job demands and related directly to social support (Table 3). The effective predictors of job satisfaction in the participants, according to backward multiple linear regression models ($R^2 = .42$), are shown in Table 4. On the basis of these results, job satisfaction decreased with increased age. In addition, higher education was shown to be significantly associated with poorer job satisfaction; psychological and physical demands were both shown to be inversely and significantly related to job satisfaction; and higher levels of skill discretion, decision authority, and supervisor support were each shown to be significantly and directly related to job satisfaction.

Discussion

Studies have shown that job satisfaction in healthcare workers, especially nurses, is related to intention to leave, job burnout, and medical care quality. Identifying the factors that relate to job satisfaction in healthcare workers, including nurses, is a high priority for health service managers. Perceived occupational stress from job demands, control, and social support may influence job satisfaction. In this study, the relationships between the psychological aspects of workplaces and job satisfaction were assessed using a sample of nurses working at four general hospitals in northern, southern, eastern, and western Iran.

In this study, the mean score for job satisfaction was 3.14 ($SD = 0.71$), with the participants reporting a higher mean level of job satisfaction than Chinese nurses ($2.95, SD = 0.75$) and a lower mean level of job satisfaction than Turkish nursing managers ($3.63, SD = 0.64$; Kantek & Kaya, 2017; Yang et al., 2014).

These different results may be because of cultural differences in terms of how individuals in different countries perceive questions about job satisfaction (Kristensen & Johansson, 2008), which may make job satisfaction difficult to compare and interpret across cultures.
In this study, the job demand dimensions (psychological and physical job demands) earned the highest mean scores of the JCQ dimensions, which is in line with other studies of nurses in Iran (Bagheri et al., 2017; Barzideh et al., 2014). Canadian nurses have reported the highest scores for job control (Morgan et al., 2002), which reflect social and cultural differences between developed and developing countries. However, Morgan et al.’s study was conducted on 110 nurses only, which is significantly lower than two other studies.

In this study, an inverse correlation was found between age and job satisfaction, with job satisfaction decreasing with increasing age. However, Guglielmi et al. (2013) did not find a similar relationship between age and job satisfaction in emergency nurses. Moreover, job satisfaction was not significantly correlated with age in Semachew et al. (2017) study, in which almost half (49.6%) of the participants were male and nearly two thirds (62.3%) were diploma holders. In this study, only around 15% and 20% of the participants were male and licensed practitioners, respectively. The inverse relationship between age and job satisfaction found in this study may be related to decreased physical abilities and higher occupational stress in older nurses as well as to higher workload because of being more experienced.

In addition, an inverse relation was found between level of education and job satisfaction. Han et al. reported that nurses with more education had less job satisfaction (OR = 1.61, 95% CI [1.06, 2.44]; Han et al., 2015). Furthermore, Lu et al. (2016) found that healthcare workers in China with more education reported lower levels of job satisfaction. This is possibly because nurses with more education expect to have fewer work-related demands, greater control, and more social support.

The results of regression model showed a significant, inverse correlation between physical and psychological job demand and satisfaction, and decreasing job satisfaction related to increases in this demand. Bagheri et al. and Han et al. found that Iranian and American nurses, respectively, who scored higher for physical and psychological demand reported lower levels of job satisfaction (Bagheri et al., 2017; Han et al., 2015). On the basis of these results, higher psychological demands (such as workload and time restraints) and physical demand (such as patient handling and repositioning of patients) are stress factors that may lead to job dissatisfaction.

In this study, a direct relationship was found between job satisfaction with, respectively, skill discretion and decision authority, with job satisfaction increasing as these components increased. A similar result was found among Italian nurses (Karanikola et al., 2014). Moreover, in a systematic review by Cicolini et al. (2014), 12 studies from different countries, including Italy, Canada, Malaysia, and China, were reviewed, with results showing psychological empowerment (e.g., decision authority) and structural empowerment (e.g., leadership, guidance, and feedback received from supervisors and colleagues) to be significantly associated with job satisfaction. Elliott et al. (2017) reported higher job satisfaction as associated with greater job control and lower depression in their study of 173 aged care nurses. Similarly, in this study, job satisfaction was found to correlate significantly with job control (skill discretion and decision authority). However, the job control dimension was found to have only a marginally significant correlation with job satisfaction. Moreover, in this study, the effect of job control on decision making was related to treatment and patient care practices, with higher levels of job control improving nursing care performance and patient conditions (Skär, 2010). In addition,

| Table 1 |
|----------------|
| Demographic Characteristics of the Participants (N = 694) |

| Variable               | n   | %     | M    | SD   | p   |
|------------------------|-----|-------|------|------|-----|
| Gender                 |     |       |      |      |     |
| Female                 | 593 | 84.5  | 62.61| 14.33| .451 |
| Male                   | 101 | 14.6  | 65.09| 14.09|     |
| Age (years)            |     |       |      |      | .067 |
| 20–29                  | 191 | 27.5  | 67.18| 13.83|     |
| 30–39                  | 321 | 46.3  | 62.77| 14.63|     |
| ≥40                    | 182 | 26.2  | 60.51| 13.92|     |
| Marital status         |     |       |      |      | .712 |
| Married                | 517 | 74.5  | 62.67| 13.88|     |
| Unmarried              | 177 | 25.5  | 63.64| 15.07|     |
| Employment status      |     |       |      |      | .911 |
| Permanent              | 153 | 22.0  | 63.13| 14.12|     |
| Contract               | 541 | 78.0  | 62.72| 14.95|     |
| Educational level      |     |       |      |      | .007 |
| LPN                    | 144 | 20.7  | 70.1 | 10.72|     |
| BSN                    | 474 | 68.3  | 62.91| 16.09|     |
| MSN/PhD                | 76  | 11.0  | 60.78| 14.28|     |
| Clinical experience (years) | |       |      |      | .491 |
| ≤ 10                   | 416 | 59.9  | 63.53| 14.58|     |
| 11–20                  | 187 | 27.0  | 60.74| 14.24|     |
| ≥ 21                   | 91  | 13.1  | 64.66| 12.72|     |
| Job position           |     |       |      |      | .224 |
| Nurse                  | 459 | 66.1  | 61.55| 15.22|     |
| Head nurse             | 125 | 18.0  | 66.66| 11.53|     |
| Supervisor             | 110 | 15.9  | 67.92| 12.07|     |
| Number of shifts per month | |       |      |      | .234 |
| ≤ 30                   | 201 | 29.0  | 65.23| 15.21|     |
| > 30                   | 493 | 71.0  | 62.13| 13.82|     |
| Ward                   |     |       |      |      | .543 |
| General ward           | 364 | 52.4  | 61.82| 14.51|     |
| Operating room         | 234 | 33.7  | 63.93| 14.49|     |
| Critical care unit     | 96  | 13.9  | 65.17| 12.77|     |
| Shift work             |     |       |      |      | .974 |
| Fixed                  | 244 | 35.2  | 63.19| 15.73|     |
| Rotating               | 450 | 64.8  | 62.89| 3.64 |     |

Note. LPN = licensed practical nurse; BSN = bachelor of science in nursing; MSN = master of science in nursing; PhD = doctor of philosophy.

*Independent t test. *One-way analysis of variance.
job control, making decisions, and independence all increase self-efficacy, confidence, and sense of success in nurses, which may increase job satisfaction (Elliott et al., 2017). Increased job control has been found to have a consistent and positive impact on self-reported health (Bambra et al., 2009) and is considered an important variable in nurses’ mental health (Elliott et al., 2017).

In this study, a direct relationship was found between supervisor support and job satisfaction. However, Elliott et al. reported no association between supervisor support and job satisfaction (Elliott et al., 2017). The participants in the Elliott et al. study were aged care nurses, which may result in different working conditions than those experienced by the nurses in this study and thus may lead to different results. Some studies have reported a significant relationship between job satisfaction and supervisor support (Bagheri Hosseinabadi et al., 2019; Fila et al., 2014), suggesting that supervisors giving nursing teams positive perceptions of emotional support may help promote a common sense of satisfaction in the work environment. Therefore, providing acknowledgment, trust, and empathy may be an important strategy for supervisors to enhance the quality of interpersonal relationships and job satisfaction (Gok et al., 2015).

**Limitations and Strengths**

The studied population included participants from northern, southern, eastern, and western Iran and was thus relatively representative of nurses working in Iran. In addition, this study attempted to assess job factors related to job satisfaction, which had not been considered in previous research in Iran.

A limitation of this study was that the collected information was subjective, which may either overestimate or

| Table 2 |
| Correlations Between the Subscales of Job Content Questionnaire and Job Satisfaction (N = 695) |

| Item | Score Range | M | SD | 1 | 2 | 3 | 4 | 5 | 6 |
|------|-------------|----|----|---|---|---|---|---|---|
| Job content questionnaire | | | | | | | | | |
| 1. Job demand Psychological | 12–48 | 38.00 | 6.29 | – | | | | | |
| Physical | 5–20 | 17.21 | 2.51 | .17* | – | | | | |
| 2. Job control Skill discretion | 12–48 | 32.91 | 5.60 | .24** | .21** | – | | | |
| Decision authority | 12–48 | 28.13 | 6.41 | .18* | .06 | .20* | – | | |
| 3. Social support Supervisor support | 4–16 | 12.14 | 2.60 | .17* | .17* | .17* | .18* | – | |
| Coworker support | 4–16 | 12.21 | 2.33 | .03 | .19* | .20* | .57** | – | |
| Job satisfaction | 1–5 | 3.14 | 0.71 | .43** | .26** | .16* | .29** | .40** | .35** |

*p < .05. **p < .01.

| Table 3 |
| The Correlation Between the Dimensions of JDCS Model and Job Satisfaction |

| Item | Score Range | M | SD | Score of 100 | 1 | 2 | 3 |
|------|-------------|----|----|-------------|---|---|---|
| 1. Job demand (PsyJD and PhyJD) | 17–68 | 55.33 | 7.09 | 81.36 | – | | |
| 2. Job control (SD and DA) | 24–96 | 60.93 | 9.27 | 63.46 | .07 | | (p = .541) |
| 3. Social support (SupSupp and CoSupp) | 8–32 | 24.29 | 4.28 | 75.90 | – .22 | .27 | – (p = .035) (p = .002) |
| Job satisfaction | 1–5 | 3.14 | 0.71 | 62.80 | .47 | .19 | .42 (p < .001) (p = .061) (p < .001) |

Note. JDCS = Job Demand–Control–Support; PsyJD = psychological job demands; PhyJD = physical job demands; SD = skill discretion; DA = decision authority; SupSupp = supervisor support; CoSupp = coworker support.
underestimate level of job satisfaction, psychological demand, and physical demand variables. Another limitation of this study was the shift-work classification used. We classified regular shifts as fixed shifts and irregular shift as rotating shifts, but we did not take into account the effect of different shift working times (i.e., morning, evening, and night shifts) on job satisfaction. Furthermore, this was a cross-sectional study and thus was not designed to show changes in job satisfaction over time. Finally, as all variables were assessed simultaneously, the causal direction among job satisfaction, job demands, job control, and support could not be assessed.

Conclusions
The job satisfaction of nurses is affected by multiple factors. The findings of this study indicate that nurses with lower levels of psychological and physical demand, greater skill discretion, greater decision authority, and more social support tend to be more satisfied with their job. Nurse managers may enhance the job satisfaction of nurses by improving work-related factors and decreasing work-related stress. For example, managers may decrease dissatisfaction by giving more autonomy to nurses in terms of making decisions related to patient care. Furthermore, maintaining an appropriate nurse-to-patient ratio may help reduce workload and physical demands and enhance job satisfaction. Finally, paying greater attention to nurses who are older and more educated may also help raise overall job satisfaction.

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Table 4
Results of Multivariate Linear Regression Analysis of Job Satisfaction (N = 694)

| Predictor                          | Adjusted B | t     | 95% CI    | p     |
|-----------------------------------|------------|-------|-----------|-------|
|                                   |            |       | Lower     | Upper |
| Age (years)                       |            |       |           |       |
| 31–40 vs. ≤ 30                    | −8.74      | 2.49  | −15.71    | −1.77 | .015 |
| ≥ 41 vs. ≤ 30                     | −8.41      | 2.01  | −16.71    | −0.11 | .047 |
| Educational level                 |            |       |           |       |
| BSN vs. LPN                       | −1.74      | −1.81 | −3.27     | −0.12 | .043 |
| MSN/PhD vs. LPN                   | −8.99      | −2.37 | −16.52    | −1.46 | .021 |
| Psychological job demands         | −0.11      | −4.13 | −0.16     | −0.06 | < .001 |
| Physical job demands              | −0.86      | −3.16 | −1.42     | −0.31 | .004 |
| Skill discretion                  | 0.48       | 2.18  | 0.04      | 0.93  | .033 |
| Decision authority                | 0.43       | 1.88  | 0.05      | 0.83  | .028 |
| Supervisor support                | 1.85       | 2.95  | 0.61      | 3.10  | .004 |

Note. BSN = bachelor of science in nursing; LPN = licensed practical nurse; MSN = master of science in nursing; PhD = doctor of philosophy.

Author Contributions
Study conception and design: MBHA, SES
Data collection: ET, SES
Data analysis and interpretation: NK, ZNK
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