Original Article

Job Characteristics and Work Adjustment among Iranian Nurses: A Correlational Study

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ABSTRACT

Background: Job characteristics (JCs) are an important factor in successful task performance and successful work adjustment (WA). **Objectives:** This study aimed to evaluate the relationship between JCs and WA among Iranian nurses. **Methods:** This descriptive correlational study was carried out in 2018 on 190 nurses randomly recruited from Shahid Beheshti University Hospital, Kashan, Iran. Data were collected using a demographic questionnaire, the JCs Questionnaire, and the WA Questionnaire. Data analysis was performed through the independent-samples *t*-test, the one-way analysis of variance, the Pearson correlation analysis, and the linear regression analysis. **Results:** The total mean scores of JCs and WA were, respectively, 70.43 ± 45.07 and 3.23 ± 0.43. JCs had significant but weak correlation with WA ($r = 0.29$; $P = 0.001$). JCs, age, and employment status were identified as predictors of WA ($r^2 = 0.076$; $P = 0.001$). **Conclusion:** Nursing managers can promote nurses' WA by paying greater attention to their perception of their JCs and promoting their professional autonomy.

KEYWORDS: *Adjustment, Authority, Job characteristics, Nursing*

INTRODUCTION

*H*ealthcare organizations are complex and subject to continuous changes due to economic, social, political, and technological factors. These factors enforce the organization to redesign the roles of the caregivers, especially nurses role.[1] In addition, during their daily practice, nurses face different occupational and personal problems due to their heavy workload, occupational stress, and difficult work conditions. These challenging conditions require nurses to continually adjust themselves to their work environment to provide quality care. Otherwise, they will suffer job dissatisfaction, provide low-quality services, and may finally leave their job.[2]

Work adjustment (WA) is defined as a process through which employees improve the skills needed to meet the requirements of their work. The main assumption of the WA Theory is that employees want to establish and maintain positive relationships with their work environment.[3] Successful WA requires people to match their own needs with work requirements.[4]

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WA not only improves employees' physical and psychological wellbeing but also promotes their personal and organizational performance.[3] Moreover, it enhances organizational productivity and profitability, increases service quality, helps employees establish constructive and humanistic interactions, and improves their sense of belonging, interest, and vitality.[5] It also helps reduce the effects of factors that can lead to job burnout such as stress, the imbalance between skills and work requirements, and imbalance between resources and expectations in the work environment.[6]

WA is affected by many different psychological and nonpsychological factors. Psychological factors refer to the feelings and the ways employees perceive their jobs. These factors include personal characteristics and what experienced and learned during job performance. Weak mutual interactions, physician centeredness of the healthcare organization, low income, and job-related feelings, and values are among the psychological factors. These factors can hinder nurses WA.[5,6] Nonpsychological factors are mainly extrinsic and include factors related to the physical environment, equipment and facilities, organizational structure, and all other factors affecting task performance.[3]

Several studies are available on the factors affecting nurses' WA. A study showed that an innovative and collaborative organizational climate, ample career advancement opportunities, rule orientation, overall living conditions, and organizational coherence had significant effects on nurses' WA.[7] Some studies also found a relationship between factors such as compliance with professional ethics, job satisfaction,[8] personality traits,[9] and job characteristics (JCs)[10] with WA and job performance among nurses. A study also reported that WA is affected by factors such as role clarity and awareness of job description.[11]

JCs or job factors has been defined as aspects specific to a job, such as knowledge and skills, mental and physical demands, and working conditions that can be recognized, defined, and assessed.[12] According to the JCs theory, several characteristics of a job can affect workers' motivation, satisfaction, performance, absenteeism, and turnover. Among the JCs, five are the "core," including skill variety, task identity, task significance, autonomy, and feedback.[13] Some studies indicated the relationships between nurses JCs, and WA motivation,[2,14] satisfaction, and performance.[15-17] However, a study could not find a significant relationship between nurses' JCs and their job satisfaction.[1]

Although several studies are available on WA, job satisfaction and JCs in nurses, most of these studies have been conducted in Western countries. However, some studies have reported that these variables are context-dependent.[18,19] Therefore, the question remains that is there a relationship between JCs and WA in Iranian nurses?

Objectives

This study aimed to evaluate the relationship between JCs and WA among Iranian nurses.

METHODS

Design and setting

This descriptive correlational study was carried out in 2018 in Shahid Beheshti teaching hospital, Kashan, Iran. There were 29 active wards and 735 active hospitalization beds in the hospital at the time of the study. The study population consisted of all 542 nurses who worked in the hospital. Sampling was randomly done by drawing lots and using the list of nurses' names. Inclusion criteria were a bachelor's degree in nursing and clinical work experience of more than 1-year. Reluctance to remain in the study and incomplete answer to the study instruments were the exclusion criteria of the study.

For sample size calculation, a pilot study was conducted to determine the variance of the JCs variable in the study population. Accordingly, thirty nurses were randomly selected to complete a JC questionnaire. Their mean score of JCs was 3.23 ± 0.44. Then, with a variance (S) of 0.44, an alpha of 0.05, a measurement precision (d) of 0.05, and a population size of 542, the sample size was estimated to be 190 [Figure 1].

Instruments

Study data were collected using three instruments, namely a demographic questionnaire, the JCs Questionnaire (JCQ),[20] and the WA Questionnaire (WAQ).[6] The demographic questionnaire included items on participants' gender, marital status, academic degree, employment status, work experience, and working unit. The JCQ was first developed by Hackman and Oldham.[13] This questionnaire contains 15 items that evaluate JCs in five domains, namely task variety, task identity, task significance, autonomy, and feedback. A seven-point Likert scale was used for item scoring. Scores 1 and 7 on the scale represent "Completely

$$n = \frac{N \times t^2 \times S^2}{\left(N \times d^2\right) + \left(t^2 \times S^2\right)}$$

$$= \frac{542 \times 1.96^2 \times 0.44^2}{\left(542 \times 0.05^2\right) + \left(1.96 \times 0.44^2\right)} = 190$$

Figure 1: Sample size calculation

wrong" and "Completely right," respectively. The possible total score of the questionnaire is 15–105 and its cut-off score is 60. Scores 60 and more indicate good JCs, while scores lower 60 indicate poor JCs. A former study in Iran evaluated and confirmed the validity and the reliability of this questionnaire with a Cronbach's alpha of 0.82.[21]

WA was assessed using the WAQ. This questionnaire was developed by Sharabi-Farahani[6] based on Dawis *et al*. Theory of WA.[3] The 35 items of this questionnaire are scored on a five-point scale, resulting in a total score of 35–175. The total score of this questionnaire was divided by the number of its items to produce a possible total score of 1–5. Scores 3 and more were interpreted as good WA, whereas scores <3 were interpreted as poor WA.[20] Sharabi-Farahani reported a Cronbach's alpha of 0.84 for this questionnaire.[6] Another study on fifty teachers reported that the correlation coefficient between the scores of this questionnaire and the Dant Satisfaction Questionnaire was 0.730, confirming its acceptable concurrent validity.[6]

Data collection
Participants were provided with the study instruments in their work setting. Two days later, instruments were collected. Participants were allowed to complete the instruments in a private place in their wards.

Ethical considerations
This study was approved by the Ethics Committee of Kashan University of Medical Sciences, Kashan, Iran (code: IR. KAUMS. NUHEPM. REC.1397.059). All participants were informed about the study objectives and were asked to provide informed consent for participation. Necessary permissions for data collection were obtained from the Research Deputy of Kashan University of Medical Sciences and the authorities of the study setting. Participants were ensured that the study data would be confidential and that they could access the study findings at will. Moreover, they were told that participation in the study was entirely voluntary and data collection would be performed anonymously.

Data analysis
The SPSS software version 13.0 (SPSS Inc., Chicago, IL, USA) was used for statistical data analysis. The data were presented using the measures of descriptive statistics (such as mean, standard deviation, and frequency distribution). Normality was tested through the Kolmogorov–Smirnov test, whereas group comparisons respecting participants' mean scores of JCs and WA were made through the independent-samples t-test, the one-way analysis of variance, and Tukey's *post hoc* test. Moreover, Pearson's correlation analysis was used

to test the correlation between WA and JCs. The linear regression analysis was used to predict WA based on JCs and participants' demographic and occupational characteristics. Variables with a $P < 0.2$ in univariate relationship analysis were entered into the regression model using a backward method. These variables included gender, employment status, academic degree, work experience, and ward. The level of significance was set at <0.05. There were no missing values.

RESULTS
Among 190 nurses who were recruited to the study, 178 nurses completely filled out the study instruments (response rate = 93%). Most of the participants held bachelor's degree in nursing (91%), had a work experience of fewer than 10 years (64.6%), and secured permanent employment (55.6%); [Table 1].

The total mean scores of JCs and WA were 80.00 ± 14.11 and 3.23 ± 0.43, respectively. Regarding the dimensions of JCs, the highest and the lowest mean scores were related to the task significance and the autonomy dimensions, respectively [Table 2].

One-way analysis of variance showed that the mean scores of JCs were significantly different between nurses working in different wards ($P = 0.01$). The Tukey's *post hoc* test revealed that significant differences existed between the mean JCs scores of nurses in critical care units and those working in medical ($P = 0.01$) and surgical units ($P = 0.002$).

One-way analysis of variance also showed that the mean scores of WA were significantly different between nurses working in different wards ($P = 0.003$). The Tukey's *post hoc* test revealed that significant differences existed between the mean WA scores of nurses in the emergency department (ED) and those working in critical care units ($P = 0.008$) and surgical units ($P = 0.008$).

The same analysis also revealed a significant difference between the mean WA scores of nurses with different employment status ($P = 0.01$) [Table 1]. According to the Tukey's *post hoc* test, the mean WA was significantly different between nurses who were working by contract and those who were formally employed ($P = 0.03$) and passing their mandatory governmental services ($P = 0.01$).

Correlation analysis indicated a significant positive correlation between the mean scores of JCs and WA ($r = 0.29$; $P = 0.001$). Among all variables entered into the regression model, three variable of JCs, age, and employment status could significantly predict the nurses WA ($r^2 = 0.076$, adjusted $r^2 = 0.054$; $P = 0.001$); [Table 3].

Table 1: The relationships of participants' characteristics with their job characteristics and work adjustment

Characteristic	*n* (%)	Job characteristics, mean ± SD	*P*	Work adjustment, mean ± SD	*P*
Gender					
Male	36 (20.2)	73.98 ± 78.17	0.59[a]	3.33 ± 0.42	0.10[a]
Female	142 (79.8)	69.53 ± 32.05		3.20 ± 0.41	
Marital status					
Married	45 (25.3)	73.76 ± 50.27	0.09[a]	3.22 ± 0.42	0.57[a]
Single	133 (74.7)	60.58 ± 21.19		3.26 ± 0.40	
Employment status					
a. Permanent	99 (55.6)	76.46 ± 56.80	0.16[b]	3.18 ± 0.44	0.01[b]
b. Conditional permanent	37 (20.8)	64.56 ± 19.76		3.29 ± 0.32	b >a[c]
c. Contractual	12 (6.7)	72.38 ± 32.44		3.56 ± 0.44	c >d[c]
d. Mandatory governmental services	30 (16.9)	56.98 ± 15.69		3.18 ± 0.36	
Academic degree					
Bachelor's	162 (91)	69.13 ± 41.80	0.20[a]	3.21 ± 0.41	0.10[a]
Master's	16 (9)	84.34 ± 71.26		3.38 ± 0.09	
Work experience (years)					
<10	115 (64.6)	66.85 ± 46.19	0.30[b]	3.23 ± 0.46	0.13[b]
11-20	57 (32)	75.85 ± 44.27		3.18 ± 0.30	
>20	6 (3.4)	87.42 ± 16.51		3.54 ± 0.39	
Hospital ward					
a. Critical care	77 (42.3)	84.80 ± 68.04	0.01[b]	3.16 ± 0.35	0.003[b]
b. Surgical	28 (15.7)	54.09 ± 16.84	a >b[c]	2.96 ± 0.45	d >a[c]
c. Medical	55 (30.9)	62.20 ± 21.25	a >c[c]	3.29 ± 0.39	d >b[c]
d. Emergency department	18 (10.1)	76.21 ± 29.66		3.37 ± 0.48	

[a]The results of the independent-sample *t*-test, [b]The results of the one-way ANOVA, [c]Statistically significant difference based on the results of the Tukey's *post hoc* test. ANOVA: Analysis of variance, SD: Standard deviation

Table 2: The mean scores of job characteristics and its dimensions

Dimensions	Mean ± SD
Task variety	17.97 ± 2.27
Task identity	16.61 ± 3.26
Task significance	18.76 ± 9.66
Autonomy	13.82 ± 4.08
Feedback	17.81 ± 2.83
Total	85.00 ± 14.11

SD: Standard deviation

DISCUSSION

Findings indicated that the mean score of JCs was at a good level. Similarly, nurses in two earlier studies reported that their JCs were desirable.[22,23] Skills, knowledge, and values inherent in a profession are not only among the known JCs but also induce the members of the profession a feeling of professional identity.[24] Recent studies in Iran showed that the public image and professional identity of nursing have considerably been improved in the past two decades.[25,26] Moreover, nursing is a relatively secure and stable job in Iran.[27,28] All these features might be associated with the good level of JCs perceived by the nurses in the present study.

The study findings also revealed that the highest dimensional mean score of JCs was related to the task significance dimension. Two earlier studies also reported the same finding.[22,23] By definition, task significance is the importance of the job to the others.[13] Thus, the highest mean score of the task significance dimension denotes that our participants had understood the usefulness of their job for society. Similarly, a former study reported nursing as the core of health-care delivery with significant effects on the wellbeing of individuals and communities.[29]

We also found that the lowest dimensional mean score of JCs was related to the autonomy dimension. Previous studies also reported the same finding.[1,21] Autonomy is the vertical distribution of responsibilities and the permitted level of independence in decision-making for employees.[13] The lowest dimensional mean score of the autonomy dimension may be due to factors such as nurses' inadequate professional knowledge and competence, an unsupportive work environment, and anon-challenging work climate in which nurses are not required to use their professional knowledge and skills. Moreover, nurses' limited participation in decision-making in the process of patient care may reduce their perceived autonomy.[20,30]

We also found that nurses in critical care units obtained significantly higher scores of JCs compared with nurses in other wards. This is in line with the findings of

Table 3: The results of the linear regression analysis to determine the predictors of nurses' work adjustment

Predictors	B	β	SE	t	P	r^2	Adjusted r^2
Constant	3.350	-	0.308	8.638	<0.001	0.076	0.054
Job characteristics	0.018	0.186	0.007	2.530	0.012		
Age	−0.013	−0.199	0.006	−2.049	0.042		
Employment status	−0.063	−0.149	0.032	−2.010	0.046		
Work experience	0.122	0.161	0.073	1.664	0.098		

SE: Standard error

another study.[31] A study also found a direct relationship between job satisfaction and JCs.[15] Due to the critical condition of patients in intensive care units and the need for prompt intervention, nurses in these units have more authority. In addition, these nurses have longer contact time with patients than nurses in other units, and their decisions have a greater impact on the patients' fate. This probably made the nurses in these wards feel more autonomy. Studies have also shown that people who have sufficient authority in their jobs have a greater sense of job richness (25) and a greater sense of independence and job satisfaction.[32,33]

Study findings also revealed the acceptable level of WA among the study participants. Two studies also reported the same finding.[3,34] The acceptable level of WA among our participants might be attributable to their good level of perceived JCs. This conclusion is also supported by the direct association observed between WA and JCs scores. In other words, nurses with better-perceived JCs had greater WA. None of the previous studies examined the correlation between JCS and WA, though a study reported that JCs had a moderate correlation with job performance.[23] Another study also reported that nurses' WA was significantly correlated with factors such as innovative and collaborative organizational climate, ample career advancement opportunities, rule orientation, overall living conditions, and organizational coherence.[7] WA refers to the congruence of employees' personalities and expectations with work-related factors – The greater the congruence, the greater the WA. Intimacy among nurses in the work environment can also affect WA. Moreover, the Theory of WA is based on individuals' interactions with their environment, denoting that those with positive interactions with their environment will show greater environmental coping.[31] Another explanation for the significant correlation of JCs with WA is motivational factors such as higher income, greater job stability, the better quality of work-life, and more job opportunities for nurses compared with most other occupations in Iran. According to Hackman and Lawler, JCs can enhance job motivation and thereby, enhance job satisfaction, professional commitment, job involvement, and WA.[35]

We also found a statistically significant difference between the mean score of WA in nurses who worked in different units, and hence that the mean score of WA was significantly higher among nurses in the ED. Earlier studies showed that a mix of intrinsic and extrinsic factors affect people's WA. Equipment used and work setting are among the extrinsic factors and can largely affect people's WA, and productivity.[3] Although we found no study on the WA of Iranian nurses working in emergency units, some studies report that nurses in the ED have a good level of clinical competence[36] and could suitably adjust themselves with stressful conditions occur in the ED.[34,37] Perhaps, positive adjustment with work-related stresses and good clinical competence helped nurses in these units to suitably adjust with their work.

The current study showed that among all variables, only JCs, age, and employment status could significantly predict 7.6% of the variance of nurses' WA. Although this finding shows that some of the factors – that we did not assess – might affect nurses WA, implies the crucial effects of JCs, work setting, and age on nurses WA. Earlier studies also revealed that JCs can predict nurses work motivation, job satisfaction, and turnover.[38-40] The significant effect of age on WA might also be attributed to the fact that nurses gain more experiences with age and this might help them adjust better with the requirements of their work. Studies also showed that WA is the consequence of coordination between individual and factors related to the work environment.[11] This is a process and happens gradually over time.[41]

This was a single-center study. Yet, as the study setting was a referral university hospital with a high hospitalization rate, findings have the potential to be generalized to other settings. However, we studied a few predictors of WA. Therefore, more studies are still needed to fully understand the factors affecting nurses' WA. Then, further multicenter studies and including nurses working in private hospitals, and considering more variables are suggested.

CONCLUSION

This study shows the acceptable levels of perceived JCs and WA, the significant positive correlation of JCs with

WA, and the significant prediction of WA by JCs among Iranian nurses. However, nurses perceive low levels of task autonomy and thus, managers need to employ strategies to promote nurses' professional autonomy and WA. These strategies may include creating a supportive work environment, developing nurses' professional knowledge, promoting their sense of responsibility and self-confidence through in-service courses and consultation, encouraging their active participation in decision-making, providing them with constructive feedback, and strengthening their job motivation. Moreover, managers can promote nurses' professional autonomy by resolving workplace conflicts and promoting teamwork. The significant prediction of WA by JCs also highlights the necessity of paying greater attention by managers to nurses' perception of their JCs, providing constructive feedback to them, and encouraging friendly relationships in the work environment. The findings of this study can be used in developing in-service training programs for nurses, especially for those working in medical and surgical units, and also for the modification of organizational structure to improve the nurses' WA.

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Conflicts of interest

There are no conflicts of interest.

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