



Can Job Control Ameliorate Work-family Conflict and Enhance Job Satisfaction among Chinese Registered Nurses? A Mediation Model

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Abstract

Background: Low job satisfaction is the most common cause of nurses' turnover and influences the quality of nursing service. Moreover, we have no idea regarding whether job control, as an individual factor, can play a role in the relationship.

Objective: To explore the relationship between work-family conflict and job satisfaction among Chinese registered nurses and the mediating role of job control in this relationship.

Methods: From August 2015 to November 2016, 487 Chinese registered nurses completed a survey. The study used work-family conflict scale, job control scale, job satisfaction scale, as well as general information. Multiple regression analysis was used to explore the independent factors of job satisfaction. Structural equation model was used to explore the mediating role of job control.

Results: Work-family conflict was negatively correlated with job satisfaction ($r = -0.432$, $p < 0.01$). In addition, job control was positively related to job satisfaction ($r = 0.567$, $p < 0.01$). Work-family conflict and job control had significant predictive effects on job satisfaction. Job control partially mediated the relationship between work-family conflict and job satisfaction.

Conclusion: Work-family conflict affected job satisfaction and job control was a mediator in this relationship among Chinese registered nurses. Job control could potentially improve nurses' job satisfaction.

Keywords: Nurses; Occupational stress; Workplace; Family; Job satisfaction; China

Introduction

Job satisfaction is defined as an individual's general attitude toward his work or as a global feeling about the job.¹ Job satisfaction is reported to be associated with many variables such as work-family conflict, social support, turnover in-

attention, and job demand.^{2,3} A recent study reported that job satisfaction is negatively associated with nurses' turnover and that low job satisfaction is the most common cause of nurses' turnover.⁴ Several studies conducted in China have shown that nurses' job satisfaction is relatively lower than that in women working in other profes-

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sions. The absolute number of population in China and a severe shortage of nurses make Chinese nurses experience more burnout and low job satisfaction.^{5,6} Therefore, exploring the independent factors influencing the nurses' job satisfaction is of paramount importance to improve their attitudes toward work and reduce their turnover rate in China.

Work-family conflict has been found to be negatively associated with nurses' job satisfaction in previous studies.⁷ Work and family are two aspects of adult life. However, these two aspects are most often uncoordinated so that participating in work role sometimes spills over into family role and the family role may influence the work role. Greenhaus and Beutell defined work-family conflict as "a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect."⁸

Work interfering family conflict (WIF) and family interfering work (FIW) are two forms of work-family conflict, which is a bi-directional conflict.⁹ Compared with other countries, in China, in most families, both the husband and the wife should work and take more responsibilities and obligations. In developed countries, the ratio of nurses:patients ranges from 1:140

to 1:320; the ratio in China is 1:1750. The shortage of nurses makes them devote more energy to work that causes them experience a higher level of stress and conflict.¹⁰ Some studies have indicated that work-family conflict is associated with job control.¹¹ Yang reported that less work conflict and a higher degree of job satisfaction are associated with internal control.¹²

Job control is defined as a combination of skilled discretion and decision autonomy.¹³ It is not clear whether job control can play a role as an individual factor in the relationship. Besides, to the best of our knowledge, no previous study has taken into account the role of job control on work-family conflict and job satisfaction. So the objectives of the current study comprised two aspects: Firstly, we examined the level of work-family conflict, job control, job satisfaction, and explored the relationship among the three variables in Chinese registered nurses. Secondly, we examined the mediating role of job control in the relationship between work-family conflict and job satisfaction.

Materials and Methods

Sample/Participants

From August 2015 to November 2016, a cross-sectional study was conducted on a convenient sample taken from National Nurse Learning Platform, which contains more than 30 000 registered nurses. The sample size was calculated based on the principle of structural equation modeling where the sample size should increase by at least 5–10 individuals for each additional variable plus a minimum of 200. We investigated five variables in our study, hence, the sample size was estimated to be at least 250 nurses. Assuming a non-response rate of 20%, the minimum sample size was then 313 nurses.¹⁴ We decided to distribute 522 questionnaires to nurses.

For more information on work-life balance and sickness absence in four Nordic countries see

<http://www.theijoem.com/ijoem/index.php/ijoem/article/view/667>



TAKE-HOME MESSAGE

- Low job satisfaction is the most common cause of nurses' turnover in China.
- We found that work-family conflict of Chinese nurses was negatively correlated with their job satisfaction and job control.
- Work-family conflict and job control had significant predictive effects on job satisfaction.
- Job control mediated the effects of work-family conflict on job satisfaction.

Instruments

Electronic questionnaires were used for collection of general information, and data about job satisfaction scale, work-family conflict scale, and job control scale. General information included sex, age, positional rank, working department, marital status, education, night shift work distribution (per month), *etc.*

The validity and reliability of the Chinese version of job satisfaction scale translated by Lu H, *et al*, have been tested.¹⁵ The questionnaire was found suitable for the evaluation of Chinese nurses. The scale consists of 15 items and two dimensions—“work status” and “work relationship.” All the items were scored on a 5-point Likert scale from ‘1’ (very unsatisfied) to ‘5’ (very satisfied). A higher score of the scale indicates a higher level of job satisfaction. In our study, the Cronbach's α for the total scale was 0.907 (0.876 for “work status” and 0.728 for “work relationship”).

The Chinese version of work-family conflict scale has been proven to have satisfactory reliability and validity.⁶ The scale consists of 18 items and two sub-scales—“work-family conflict” (WIF) scale and “family-work conflict” (FIW) scale. All the items were rated on a 5-point Likert scale ranging from ‘1’ (strong disagreement) to ‘5’ (strong agreement). The total score was from 18 to 90; a higher score indicates a stronger work-family conflict. In the present study, the Cronbach's α for the total scale was 0.887 (0.875 for WIF and 0.812 for FIW).

The Chinese version of the job control scale has been found reliable and valid.¹⁶ All the items were rated on a 5-point Likert scale from ‘1’ (very few) to ‘5’ (so much). A higher score of the scale indicates a higher level of job control. In our study, the Cronbach's α for the total scale was 0.896.

Ethics

The study protocol was approved by the Ethics Committee of Anhui Medical University (Approval No. 2017011). Written informed consent was obtained before conducting the survey.

Statistical Analysis

SPSS® for Windows® ver 19.0 (Chicago, IL, USA) was used for data analyses. *Student's t* test and one-way ANOVA were used to compare scores of satisfaction, work-family conflict, and job control. Pearson's correlation coefficient was used to assess the relationship between two normally distributed variables. Multiple regression analysis was used to determine the independent factors of job satisfaction. Job satisfaction was considered the dependent variable. Those variables that were found significant ($p < 0.05$) in univariate analysis as well as work-family conflict and job control scores were used as independent variables.

Structural equation modeling is a statistical method for the analysis of the relationship between variables based on their covariance matrix. Basically, the method integrates two statistical methods—factor analysis and path analysis.^{14,17} Using IBM® SPSS® Amos ver 17.0, we used structural equation modeling to examine the mediating effect of job control on the relationship between work-family conflict and job satisfaction. A p value < 0.05 was considered statistically significant.

Results

Of 522 questionnaires distributed, 487 were found eligible for data analyses—a response rate of 93.3%. Demographic characteristics of the studied nurses and job control, job satisfaction, and work-family conflict scores are presented in Table 1. Most of the studied nurses (92.0%) were females; half of them were aged ≤ 30 ; al-

For more information on validation of multidimensional Persian version of the work-family conflict questionnaire among nurses see <http://www.theijoem.com/ijoem/index.php/ijoem/article/view/748>



Table 1: Demographic characteristics of the study participants and the distributions of work-family conflict, job control, job satisfaction stratified by studied variables

Variable	n (%)	Work-family conflict score Mean (SD)	Job control score Mean (SD)	Job satisfaction score Mean (SD)
Gender		p=0.007	p=0.533	p=0.090
Male	39 (8.0)	56.05 (12.75)	46.77 (11.84)	42.46 (12.41)
Female	448 (92.0)	51.07 (10.90)	47.89 (11.30)	46.00 (9.75)
Age		p=0.007	p<0.001	p<0.001
≤30	245 (50.3)	52.83 (11.16)	44.64 (10.73)	43.59 (10.00)
31–39	171 (35.1)	50.81 (10.81)	50.67 (10.87)	47.94 (9.20)
≥40	71 (14.6)	48.37 (11.14)	51.83 (11.50)	47.72 (10.54)
Positional rank		p=0.008	p<0.001	p<0.001
Nurse	97 (19.9)	53.23 (10.48)	43.78 (11.26)	43.42 (9.56)
Nurse Practitioner	191 (39.2)	52.14 (11.30)	45.51 (9.91)	44.21 (9.44)
Nurse-in-charge	173 (35.5)	50.66 (10.88)	52.16 (11.53)	48.68 (10.15)
Associate Professor of Nursing	26 (5.3)	45.42 (11.93)	50.65 (10.45)	45.62 (10.77)
Working department		p=0.766	p=0.017	p=0.791
Medicine	140 (28.7)	51.24 (11.19)	47.26 (10.78)	46.29 (10.67)
Surgery	111 (22.8)	50.85 (9.82)	48.26 (11.85)	46.32 (10.13)
Pediatrics	23 (4.7)	51.26 (8.72)	46.00 (12.39)	44.78 (8.73)
Emergency	39 (8.0)	53.59 (12.51)	48.10 (10.11)	44.54 (8.53)
Obstetrics and gynecology	31 (6.4)	52.42 (11.72)	52.71 (12.50)	46.94 (9.33)
Intensive care unit	24 (4.9)	51.04 (11.33)	47.08 (9.29)	45.33 (9.13)
Operation room	62 (12.7)	52.90 (10.90)	44.06 (10.49)	44.00 (9.03)
Others	57 (11.7)	49.98 (13.16)	50.47 (11.98)	45.67 (11.44)
Marital status		p=0.286	p<0.001	p=0.012
Single	157 (32.2)	52.55 (10.25)	44.39 (10.61)	43.83 (9.66)
Married	325 (66.7)	50.91 (11.52)	49.37 (11.39)	46.66 (10.07)
Divorced	5 (1.0)	53.80 (10.23)	53.00 (4.85)	43.40 (11.01)
Having children		p=0.064	p<0.001	p=0.002
No	193 (39.6)	52.62 (10.57)	44.77 (10.59)	43.96 (9.77)
Yes	294 (60.4)	50.71 (11.43)	49.79 (11.39)	46.87 (10.03)

Continued

Table 1: Demographic characteristics of the study participants and the distributions of work-family conflict, job control, job satisfaction stratified by studied variables

Variable	n (%)	Work-family conflict score Mean (SD)	Job control score Mean (SD)	Job satisfaction score Mean (SD)
Education		p=0.053	p=0.400	p=0.472
High school or under	6 (1.2)	61.33 (7.26)	45.00 (14.35)	40.83 (11.05)
Junior college	117 (24.0)	51.65 (10.34)	47.86 (11.21)	46.35 (9.94)
Undergraduate	352 (72.3)	51.43 (11.33)	47.65 (11.24)	45.52 (9.87)
Postgraduate or above	12 (2.5)	46.00 (11.61)	53.00 (13.90)	47.75 (14.44)
Monthly income, RMB (US\$)		p=0.303	p=0.209	p=0.618
<3000 (<480)	39 (8.0)	53.23 (10.56)	45.62 (11.55)	44.95 (12.18)
≥3000 (≥480)	448 (92.0)	51.32 (11.17)	47.99 (11.31)	45.78 (9.82)
Years of service		p=0.095	p<0.001	p<0.001
≤5	183 (37.6)	52.51 (10.97)	44.84 (11.03)	43.92 (9.75)
6–10	90 (18.5)	51.51 (11.04)	45.68 (10.00)	44.19 (10.79)
11–20	156 (32.0)	51.40 (11.20)	51.01 (11.03)	48.11 (8.84)
≥21	58 (11.9)	48.29 (11.20)	51.81 (11.85)	47.33 (11.20)
Employment status		p=0.103	p<0.001	p=0.002
Permanent	212 (43.5)	50.53 (11.33)	50.66 (10.98)	47.31 (10.12)
Temporary	275 (56.5)	52.19 (10.93)	45.60 (11.13)	44.49 (9.78)
Night shift work distribution (days/month)		p<0.001	p<0.001	p<0.001
0	88 (18.1)	49.70 (10.88)	51.34 (10.89)	45.88 (10.40)
1–4	200 (41.1)	49.07 (10.79)	49.44 (11.27)	48.63 (9.20)
5–8	134 (27.5)	54.28 (10.55)	43.99 (10.78)	43.22 (9.61)
≥9	65 (13.3)	55.45 (11.42)	45.85 (10.89)	41.69 (10.21)
Types of hospital		p=0.561	p=0.006	p=0.120
Primary	16 (3.3)	52.00 (8.16)	48.81 (10.63)	42.13 (8.22)
Secondary	163 (33.5)	50.71 (11.70)	50.06 (11.71)	46.76 (10.27)
Tertiary	308 (63.2)	51.85 (10.95)	46.56 (11.01)	45.35 (9.93)
Having religious belief		p=0.493	p=0.084	p=0.646
Yes	43 (8.8)	52.58 (12.31)	44.95 (11.59)	45.05 (12.40)
No	444 (91.2)	51.36 (11.01)	48.08 (11.29)	45.78 (9.77)

Table 2: Results of multiple linear regression analysis of the factors associated with job satisfaction in the studied nurses

Variable	Job satisfaction coefficient (95% CI)
Age	0.458 (-1.722 to 2.639)
Professional rank	-0.456 (-1.937 to 1.025)
Having children	0.164 (-2.988 to 3.315)
Years of service	0.083 (-1.708 to 1.873)
Employment status	-0.058 (-1.796 to 1.680)
Night shift work distribution (per month)	-0.404 (-1.263 to 0.456)
Marital status*	
Married	-0.135 (-3.048 to 2.778)
Divorced	-4.532 (-12.141 to 3.076)
Work-family conflict	-0.249 (-0.316 to -0.181)
Job control	0.419 (0.351 to 0.486)

*Variable assignment: unmarried '0,' married '1,' divorced '2'

most one-third were working in medical departments; and two-thirds were married. Most of them (92%) had a monthly income of RMB 3000 (US\$ 480) or more (Table 1). Younger participants with positional rank of “nurse” had higher work-family conflicts and lesser job control and job satisfaction. Male nurses experienced more work-family conflict compared with females (Table 1).

It was found that both work-family conflict and job control scores were significantly correlated with job satisfaction. Work-family conflict was negatively correlated ($r -0.432, p < 0.01$) and job control was positively correlated ($r 0.567, p < 0.01$) with job satisfaction; job control was negatively correlated with work-family conflict ($r -0.310, p < 0.01$).

Multiple regression analysis revealed that of the studied independent variables, age, positional rank, marital status, having children, years of service, employment status, night shift work distribution

(per month), work-family conflict, and job control, only work-family conflict and job control were independent predictors of job satisfaction (Table 2).

The Relationship between Work-family Conflict and Job Satisfaction through the Mediating Role of Job Control

Based on our hypotheses, we drew a structural model that was tested in Amos. Several absolute fit indices were used to evaluate the model fit. Considering the observed statistics, the proposed model seemed to fit the data very well (Fig 1).⁹

Mediation analyses were used to test job control as a mediator role in the relationship between work-family conflict and job satisfaction. We considered work-family conflict (*ie*, WIF and FIW) as the predictor variable, job control as a mediator role, and job satisfaction as the outcome variable. The model was presented in Figure 1. The path coefficients presented in Figure 1 were the standardized coefficient. The direct path indicates that work-family conflict had a significant ($p < 0.001$) negative predictive effect on job satisfaction ($\beta -0.33$). The indirect path indicates that work-family conflict, through the mediating variable “job control” ($\beta -0.37, p < 0.001$), negatively affected job satisfaction ($\beta 0.47, p < 0.001$). The results demonstrated that in the relationship between work-family and job satisfaction, job control played a partial mediating role (Fig 1). The ratio of mediating effect with total effect was 52.7%.

Discussion

The main objective of our study was to examine the potential mediating role of job control on the relationship between work-family conflict and job satisfaction. At the same time, the independent factors were explored for Chinese registered nurses' job satisfaction.

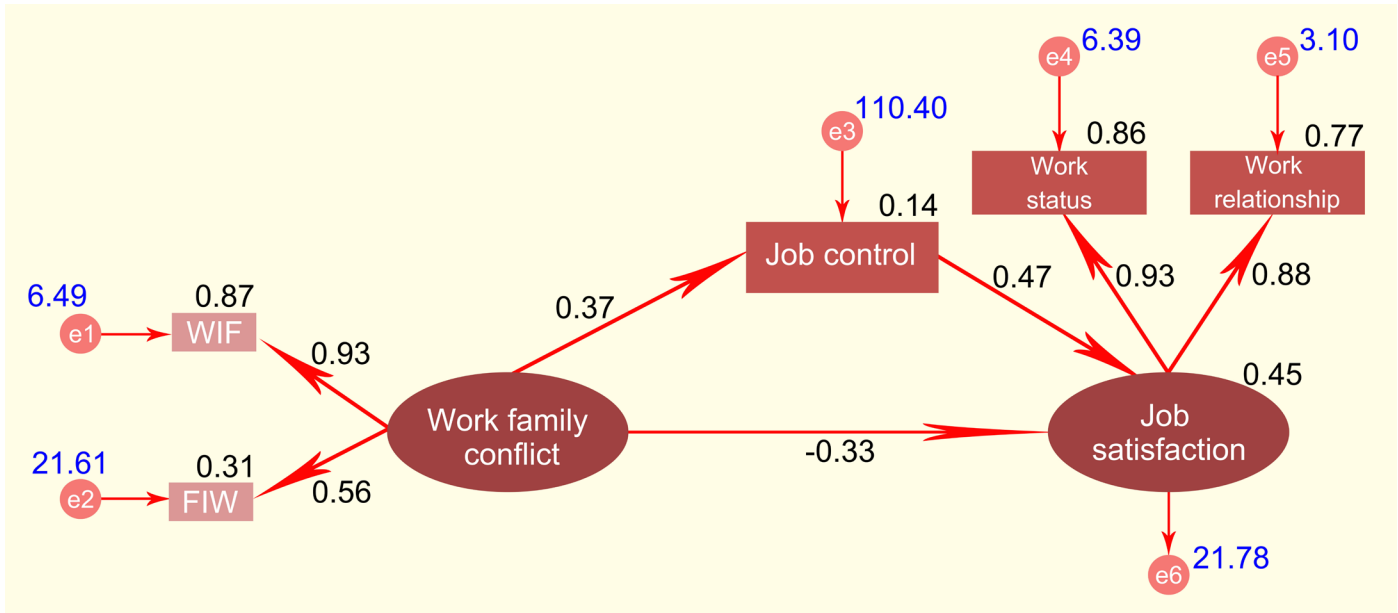


Figure 1: Hypothesized model of work-family conflict, job control and job satisfaction. WIF: work-family conflict, FIW: family-work conflict, e: residual error. Variance of each residual is printed in blue. Values 0.87, 0.31, 0.14, etc, are variances of the observed variables WIF, FIW, Job control, etc, respectively. The path coefficients are the standardized coefficients. Statistics derived in our model included a χ^2 of 4.463 ($p=0.216$), χ^2/df of 1.488, root mean square error of approximation (RMSEA) of 0.032, comparative fit index (CFI) of 0.999, normal fit index (NFI) of 0.996, and goodness of fit index (GFI) of 0.996, which indicates a very good fit.⁹

Regarding the relationship between work-family conflict and job satisfaction, work-family conflict was found to be negatively related to job satisfaction of Chinese registered nurses. The result was in parallel with the findings of many previous studies.^{3,16} The spillover theory of work-family conflict pointed out that skills, behaviors, emotions, attitudes arising in the field of work, and family will spill from one field to another.¹⁸ For nurses, work-family conflict is a negative spillover, so it is hard to balance the conflict between work and family roles. It could lead to job burnout and decrease job satisfaction, resulting in turnover intention. Hospital managers should adopt strategies to decrease nurses' work-family conflict, such as providing more study opportunities for them to enhance their clinical comprehensive ability to fit better in the highly stressful medical environment.²

Our results showed that male nurses experienced more work-family conflict compared with females. These results were different from those reported in previous studies.¹⁹ A possible explanation is that in China, men should take more responsibility than women. We also found that nurses aged <30 years and junior nurses experienced more work-family conflict and lower job satisfaction. It is generally related to those nurses who have poor clinical nursing ability and low experience.²⁰

Another result demonstrated that nurses who were single or divorced, and had no child, reported a lower job satisfaction. The probable explanation is that compared with married nurses, they had lesser social support and had to shoulder more pressure alone. In general, most junior nurses have no child; they often have less clinical experience with lower level of technical skills.

As part of work resources, the effect of job control on nurses' job satisfaction was rarely examined in previous studies. Our study indicated that job control was positively related to job satisfaction among Chinese registered nurses.

According to multiple regression analysis, we found that work-family conflict and job control were independent predictors of job satisfaction. The results were in keeping with the job demand-control model and further validated the model. Our findings revealed that job control partially mediated the effects of work-family conflict on job satisfaction. When the relationship between work and family is unbalanced, nurses who perceive more work-family conflict would be more likely to experience exhaustion that would lead to job burnout. This in turn would further decrease the level of job control, which ultimately decreases job satisfaction. Therefore, to decrease the Chinese registered nurses' work-family conflict, there should be a more positive and workable strategy for hospital administrators to take appropriate measures to increase the level of nurses' job control, by creating a relatively beneficial working environment, and assuring more interests from work. Nurses' job satisfaction could therefore be improved resulting reduced job burnout. Job demand-control model pointed out that high job demands (including role conflict) and low job control lead to high working pressure. Job motivation increases when job demands and job control are both at a high level. Therefore, it is beneficial to improve the work performance and job satisfaction of employees. Our results were not only consistent with this model, but also conceived expansion and extension of the job demand-control model.

Nowadays, health care reform is happening in China. Under this situation, Chinese nurses need to work hard and may experience great pressure. Recent studies

have shown that nurses' turnover intention is high.²¹ Therefore, "how to enhance nurses' job satisfaction in order to reduce possible turnover" is a big question to focus on. In the meantime, interventions designed to enhance the levels of job control should be developed as soon as possible in China to solve the problem.

Several limitations of our study are worth noting. Firstly, this study was used a convenient sampling of nurses, which would jeopardize the generalizability of the findings to all Chinese nurses, but we believe considering the large sample size would remedy this limitation. Secondly, all the data were self-expressed, which can cause biased results. Furthermore, for the cross-sectional nature of the study, it is hard to confirm any causal relationship. Appropriate changes should thus be made in design of the future studies for work-family conflict, job control and job satisfaction. More confounding factors should be considered in the future beyond the limitation of our study where only controls of some basic demographic data and job characteristics have been done.

In conclusion, our study revealed that work-family conflict of Chinese nurses was negatively correlated with their job satisfaction and job control. Work-family conflict and job control had significant predictive effects on job satisfaction. Job control mediated the effects of work-family conflict on job satisfaction. Accordingly, interventions though job control to decrease the work-family conflict among nurses and to improve their job satisfaction should be developed in China.

Conflicts of Interest: None declared.

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