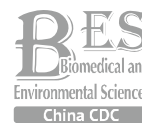


Letter to the Editor



Development of Job Burden-capital Model of Occupational Stress: An Exploratory Study*

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This study proposes a new framework as job burden-capital model for comprehensive assessment on occupational stress. 1618 valid samples were recruited from electronic manufacturing service industry in Hunan province by self-rated questionnaires after written consent. Structural equation model analysis was employed to verify the model by the data collected. The final fitting model has satisfactory fitting goodness (CMIN/DF=5.78, AGFI=0.937, NNFI=0.960, IFI=0.968, RMSEA=0.054). Both of the measurement model and structural model have acceptable path loadings. Job burden and capital could either directly affect occupational outcomes or indirectly influence them through personality. Multi-group structural equation model analyses indicate general applicability of the model to the basic features of such population. The job burden-capital model opens up new horizons for more in-depth study on occupational stress.

The occupational population is the basis of social and economic development, and their safety and health is an important guarantee for social progress^[1]. With the further industrialization and modernization, the increasing occupational psychological problems, represented by occupational stress^[2], have obtained the attention from all sectors of society. At present, most researches on occupational stress have been carried out on health hazards, and have achieved great success^[3-5]. But the latest and optimizing research on the theory of occupational stress is rare. Most of the studies are usually based on occupational stressors for evaluation and prediction of occupational stress, or use the internationally recognized two models in

recent years, i.e. job demands-control (JDC) model^[6] and effort-reward imbalance (ERI) model^[7], to evaluate and predict the occupational stress.

The core of the basic theory of job demand-control model proposed by Karasek and effort-reward imbalance model proposed by Siegrist can be summarized as follows: when the available working capital (such as autonomy, income, work stability, etc.), can't balance with the burden of work, it may lead to occupational stress (or even occupational burnout)^[3]. The two models take the two important parts of occupational stress as the theoretical basis of evaluation and prediction of occupational stress respectively, but in the face of the growing complexity of occupational population and occupational characteristics, the evaluation results may not reflect the panorama of occupational stress of current occupational population to some extent^[3].

A large amount of studies have conducted researches on occupational stress by using JDC and ERI simultaneously to figure out comprehensive and systematic conditions of occupational stress. However, obviously, there is still one question that cannot be avoided even by using both of these two models at the same time, as: the evaluation systems of these two models are independent, and they are initially designed to evaluate occupational stress from independent angles, and it is unadvisable to confound their dimensions or items without any theoretical basis. By considering the questions above, and for the requirement of a model that fits Chinese social and cultural background, we developed 'Job burden-capital model', on the basis of the widely used JDC and ERI in China.

doi: 10.3967/bes2016.090

*This research was supported by the Science and Technology Fund for Young Scholars of the national institute of occupational health and poison control (No. JC201601).

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The basic theory of the model shows that: job burden of occupational population goes beyond the capital owned, the risk of occupational stress will increase, and the extent and speed of development of occupational stress are also affected by the regulation of the personal personality. 'Job burden' mainly refers to those psychological, physical, organizational, social and personal job factors that require enhanced or transitory physical and/or psychological diathesis or capability and lead to daily costs physiologically and/or psychologically. 'Capital' refers to those psychological, physical, organizational, social and personal factors that can function to address the requirement of job burden, fulfill job tasks, alleviate depressed feelings^[3], increase sense of accomplishment and improve individuals' ability (Supplemental Figure S1, in the website of BES, www.besjournal.com).

In order to verify the theoretical framework, this paper proposes three hypotheses: 1) The job burden and capital can directly affect the occupational stress which is evaluated from positive and negative aspects (the overall perception of stress and job satisfaction); 2) The individual characteristics can mediate the relationship between the job burden, capital, occupational stress and satisfaction; 3) For the occupational groups, the theoretical model has general applicability among population of different characteristics.

Formal investigation was carried out from June to July, 2015 officially. A total of 1800 questionnaires were issued, 1618 questionnaires were recovered, and the recovery rate was 89.9%. The measurement of all factor items is based on the job content questionnaire of Chinese version and the effort-reward imbalance questionnaire, and the most representative items which are consistent with the model's hypothesis and Chinese social background shall be extracted. The study reflected the overall work stress perception by three self-assessment questions, namely about physical stress feeling, mental stress and total stress perception. The standard measurement of overall job satisfaction is also subject to the self-rated measurement method. It also involves three levels of satisfaction, i.e., relaxed body feeling, psychological satisfaction and overall satisfaction. Epidata3.1 was used for data entry, and SPSS Statistics 19.0 and SPSS AMOS 21.0 were used for statistical analysis. α takes 0.05 with two tails. Cronbach's α , Pearson test of correlation analysis, structural equation model analysis and mediation analysis were employed to

verify the hypotheses proposed.

The coefficients between job burden, capital or personality and overall stress perception are 0.564, -0.559, and 0.539 respectively, and the coefficients between three the above aspects and overall job satisfaction are -0.430, 0.507, and -0.398 respectively, which have statistical significance. In addition, the result of internal consistent test shows that the Cronbach's α are between 0.750 and 0.943, reaching a high level. After testing that the selected items and dimensions have correlation and internal consistency, we used the structural equation model to conduct data fitting and optimization for model hypotheses. The final fitting model have satisfactory fitting goodness (CMIN/DF=5.78, AGFI=0.937, NNFI=0.960, IFI=0.968, RMSEA=0.054), and the coefficients of each path are of statistical significance respectively (Table 1 and Supplemental Table S1, in the website of BES, www.besjournal.com). The standardized regression weight from burden to the overall stress perception and overall job satisfaction are 0.34 and -0.17 respectively, i.e., once the job burden increases by an unit, the occupational stress perception increases by 0.34 unit, and the overall job satisfaction decreases by 0.17 unit; similarly, the standardized path loadings between capital and the two aspects are -0.24 and 0.32 respectively (Figure 1). With the increase of capital, the occupational stress perception decreased gradually, and the overall job satisfaction increased gradually. Namely, the higher burden will directly cause greater occupational stress and lower job satisfaction, which is consistent with the majority of previous studies. Similarly, the increase of capital can significantly reduce the risk of occupational stress. In the personality characteristics, the susceptibility of job stress, ergasiomania and the characteristics of thinking the work at any time will increase the occupational pressure and reduce the overall work satisfaction.

In order to further test the hypothesis that personality may mediate the relationship between the job burden, capital and stress perception, satisfaction, we carried out the mediating effect analysis of structural equation model. The bootstrap statistical method was used, and the sampling number was set as 5000 according to the research of Hayes, taking the bias correction interval as the confidence interval of mediating effect. The results show that the direct effects of job burden on stress perception and job satisfaction are 0.34 (0.24—0.45) and -0.17 (-0.28—-0.07) respectively, and the

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