

# Examining Job Satisfaction, Mental Workload, and Job Control in Midwives working in hospital

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## ABSTRACT

**Background:** Midwives constitute a group of health care personnel in hospitals. Clearly, job satisfaction and control have a key effect on improvement of work condition and alleviation of mental workload in workers. Job satisfaction, mental workload, and job control in midwives in hospital were examined.

**Methodology:** A descriptive-analytical study was carried out on 143 midwives working in educational hospitals. Four questionnaires including a demographics form, NASA-TLX, JDI job satisfaction inventory, and a job control questionnaire was used in the study. Data analyses were done using SPSS (v. 18).

**Results** The mean scores of mental workload, job satisfaction, and job control were 70.98, 193.77, and 14.65 respectively. Mental workload was high in the subjects and there was a correlation between mental workload, job satisfaction, and job control.

**Conclusion:** An increase in mental workload decreases job satisfaction. Job control has a key role in the improvement of work condition of midwives. Therefore, there is a need for managerial approaches to alleviate workload and increase job control and job satisfaction in hospital workers.

**Keywords:** Job satisfaction, job control, mental workload, hospital midwife

## INTRODUCTION

Human capital is one of the main factors in the development and progress of a society or organization. Therefore, it is important to pay more attention to satisfaction in human forces and provide a suitable work condition for them<sup>1</sup>. Job satisfaction refers to one's attitude and viewpoint about their job. In other words, satisfaction is about one's content, realization of career needs, job performance, efficiency, and performance<sup>2</sup>. Personal and organizational factors affect one's job satisfaction so that personal, family, and genetic specifications, education, justice, work experience, social structure of life, and environment all have a key role in job satisfaction. Factors like nature of work, hardship level of job, social status, work condition and safety, promotion opportunities, efficient incentive system, management, workers' participation in decision making, and workload are the factors in job satisfaction in the work environment. Job satisfaction increases performance<sup>3</sup>. As studies have shown, job satisfaction depends on different aspects of work condition and personal specifications; therefore, improvement of job satisfaction depends on improvement of work condition<sup>4</sup>. Job dissatisfaction might lead to absenteeism, decrease in performance, and potential effects on the quality of services provided to clients<sup>5</sup>. Studies have shown a close relationship between job satisfaction and performance of nurses<sup>6</sup>. The workload has a determinant role in creating unwanted outcomes such as emotional fatigue and job burnout<sup>8</sup>. As shown by studies, the second cause of stress is lack of adequate time or skill to do the task<sup>9</sup>. Hospital jobs are featured with high workload and a wide range of job demands so that they are among the jobs with high mental workload. Studies on mental workload, job burnout, job stress, and job satisfaction are numerous and they have been mostly on nurses<sup>8-24</sup>. Mental workload in midwives can be also high due to a large number of clients, high workload, understaffed wards, and tight schedules<sup>9,16</sup>. Mental workload and job satisfaction in individuals have a direct relationship with the quality of care provided to patients<sup>4</sup>. In addition, job dissatisfaction and lack of balance between workload and one's capability and limitations might affect the general health of individuals<sup>25</sup>. Studies have shown that inconsistency between workload and job control, according to the theory of control, demand, and job stress (Karasek Theorell), creates the general condition for anxiety and depression. In addition, low job control creates work pressure, while high job control enables individuals to make decisions about their work<sup>34</sup>. There is a paucity of studies on the relationship between mental workload and job satisfaction in different groups

like physicians, professors, university staff, and industrial workers in metal industries<sup>3,4,25-28</sup>. Taking into account that the majority of studies have been on mental workload or job satisfaction on specific groups like nurses, and paucity of studies on the relationship between job satisfaction and mental workload in hospital workers with job control as a mediator variable, the present study is an attempt to examine the relationship between job satisfaction, mental workload, and job control in hospital midwives.

## METHODOLOGY

The study was carried out as a descriptive-analytical work in 2019. The study population consisted of all midwives working in Ardabil and Shoushtar-based educational hospitals. Information of 143 midwives was collected through census sampling. At first, required arrangements were made with the wards in hospitals. Then, given the descriptive nature of the study and no need for clinical intervention, after briefing the target group about the objectives, the data were collected from the participants interested in participating in the study.

To collect the data, four tools including a demographics form, NASA-TLX questionnaire, job satisfaction inventory (JDI), and a researcher-designed questionnaire (Adibi et al.) to measure job control were used.

Job control questionnaire includes five questions with a five-point scale (completely agree, ..., completely disagree). The five questions, measure perceived control in the employees on work affairs, ways of doing the job, work policies, and perceived autonomy at work. Face and content validity of the questionnaire was examined based on the relevance between the face and content of the items and the control phenomenon by two experts. To final check, the tool was provided to a third expert for examination. Construct validity was examined through explorative factor analysis and varimax rotation in two stages; once with job demand, performance, and burnout questionnaires and once independently. The results of the analysis loaded the five questions on an independent factor in an independent and a distinguishable way (factor loads 0.57-0.85). Cronbach's alpha of the five questions was obtained equal to 0.72<sup>9</sup>.

The demographics form covered age, gender, work experience, education level, main job, second job, and type of employment contract. The NASA-TLX questionnaire is designed to measure mental workload and it is validated in Iran by Seraji et al. In 2013<sup>30</sup>. The tool is developed by NASA to measure perceptual

aspects of workload and it is one of the best tools available in this field. The NASA-TLX measure six subscales of mental need, physical need, time need, level of effort, performance, and frustration<sup>31</sup>. The JDI job satisfaction inventory has been used by several studies<sup>4,26</sup>. The questionnaire is developed in the Kernel University with validity and reliability coefficients equal to 0.96 and 0.94 respectively. It is one of the reliable questionnaires about job satisfaction with 54 items. The items are designed based on Likert's five-point scale. Job satisfaction is rooted in different variables like payment, promotion opportunities, supervisor, colleagues, work environment factors (supervisors' style, strategies, procedures, work team attachment, work condition, and benefits). The items are five-alternative questions (1 – 5)<sup>26</sup>. To evaluate job control, a researcher-designed questionnaire by Adibi was used. The questionnaire includes five questions designed based on Likert's five-point scale (completely agree,..., completely disagree). The five questions, measure perceived control on job affairs by workers, work condition method, policies on work process, and perceived autonomy at work. Face and content validity of the questionnaires have been examined by two experts based on the relevance between face and content of the questionnaire and control phenomenon. The tool was also finally checked by an independent expert and Cronbach alpha of these five questions was obtained equal to 0.7<sup>31</sup>. Eventually, the relationship between job satisfaction and mental workload, the relationship between mental workload and job satisfaction, and the role of job control as a facilitator were examined. To analyze the results, Chi Square or Fisher's exact test and post hoc tests were used for pairwise comparison of the variables. To determine the relationship between qualitative variables, Pearson correlation coefficient was used. To examine the effects of mediating variables, MANOVA was used and to examine other variables on one hand and the mediating variable, structural equation models (SEM) was used (p<0.05). Data analyses were done in SPSS (v.18) and the AMOS (v. 18). The SEM method is a set of multivariate regression equations where all the equations determine goodness of fit of the model and generate single parameter estimate test. The SEM is recommended to examine linear relationships of observed and not observed variables. It is a technique of the general linear model and enables researchers to examine a set of regression equations simultaneously.

**RESULTS**

Totally, 150 midwives working in four Ardabil-based educational hospitals took part in this cross-sectional study. Table 1 lists mean

and SD of mental workload, job satisfaction, and job control. Demographics of the participants along with mean score, SD, and correlation of the variables are listed in Table 2.

Based on ANOVA results and Pearson correlation coefficient; qualitative variables based on N (%) and quantitative variables as mean±SD (\* p=0.05, \* p=0.001).

The relationship between demographic variables and other variables under study was also examined. As listed in Table 1, there is a positive and significant relationship between age, mental workload and there is a negative and significant relationship between age and job satisfaction. There is also a significant and positive relationship between work record and mental workload. The relationship between work record and job satisfaction was negative and significant. There was no significant relationship between age and work record and job control. Figure 1 illustrates the model for the relationship between workload and job satisfaction (r=-0.19, p<0.001) (Fig. 1a). As the model shows, an increase in workload leads to a decrease in job satisfaction.

As listed in Table 3, some of the indices of goodness of fit of the model for the relationship between workload and job satisfaction indicate that the goodness of fit of the model is supported. Model No.2 demonstrated the relationship between workload and job satisfaction with job control as a mediating variable. Figure 1b illustrates the standard coefficient between the two variables of mental workload and job satisfaction (r=-0.20, p<0.001) and standard coefficient of job control (r=-0.28, p<0.001). That is, by adding job control (with a significant and inverse relationship with mental workload), the relationship between workload and job satisfaction intensifies. Some of the indices of goodness of fit of the model to examine the relationship between workload and job satisfaction that contains job control as a variable, supported goodness of fit of the model (Table 3).

As the results showed, among the aspects of mental workload, the highest score was obtained by effort, followed by time pressure, and mental pressure. Among the various aspects of job satisfaction, the highest score was obtained from nature of job followed by salary and work environment (Fig. 1). According to the model designed for midwives (n=150), standard coefficients (r) between the two variables of the workload and job satisfaction, and between job control and workload were equal to -0.15 and -0.25 respectively (p<0.001). Goodness of fit indices of the model to examine the relationship between workload and job satisfaction with job control as mediating variable supported goodness of fit of the model (Table 4).

Table 1: Mean score, SD, and correlation of variables in the participants (n=150)

	Mean	SD	(1)	(2)	(3)
Mental workload (1)	70.98	15.14	1	-0.256**	-0.123**
Satisfaction (2)	193.77	55.14	-0.256**	1	0.130**
Job control (3)	14.65	5.71	-0.123**	0.130**	1

Table 2: Frequency and mean score of background variables and their relationship with workload, satisfaction, and job control

Variable	N (%)	Workload		Satisfaction		Job control	
		Mean±SD	P-value	Mean±SD	P-value	Mean±SD	P-value
Education	412(85.8)	70.81±15.55	0.714	55.83±195.27	<0.001**	14.71±5.75	0.234
Variable	Mean±SD	Pearson correlation coefficient	P-value	Pearson correlation coefficient	P-value	Pearson correlation coefficient	P-value
Age	34.01± 6.02	0.235	<0.001**	-0.894	<0.001**	-0.051	0.264
Work record	7.91± 7.25	0.224	<0.001**	-0.683	<0.001**	-0.048	0.296

Table 3: Goodness of fit indices of the model representing relationship between mental workload, job satisfaction and job control as a mediating variable

Goodness of fit index (GFI)	CMIN/DF <sup>1</sup>	IFI <sup>1</sup>	TLI <sup>1</sup>	CFI <sup>1</sup>	RMSEA <sup>1</sup>
Relationship model without job control variable	3.435	0.916	0.893	0.916	0.071
Relationship model with job control variable	2.985	0.919	0.899	0.918	0.064
An acceptable level	<5	0.08<	0.08<	0.08<	<0.08
1) Chi-square/DF 2) Incremental fit index 3) Tucker-Lewis Index			4) Comparative Fit Index 5) Root Mean Square Error of Approximation		

Figure 1: Relationship between job satisfaction and mental workload in absence of job control as a mediating variable

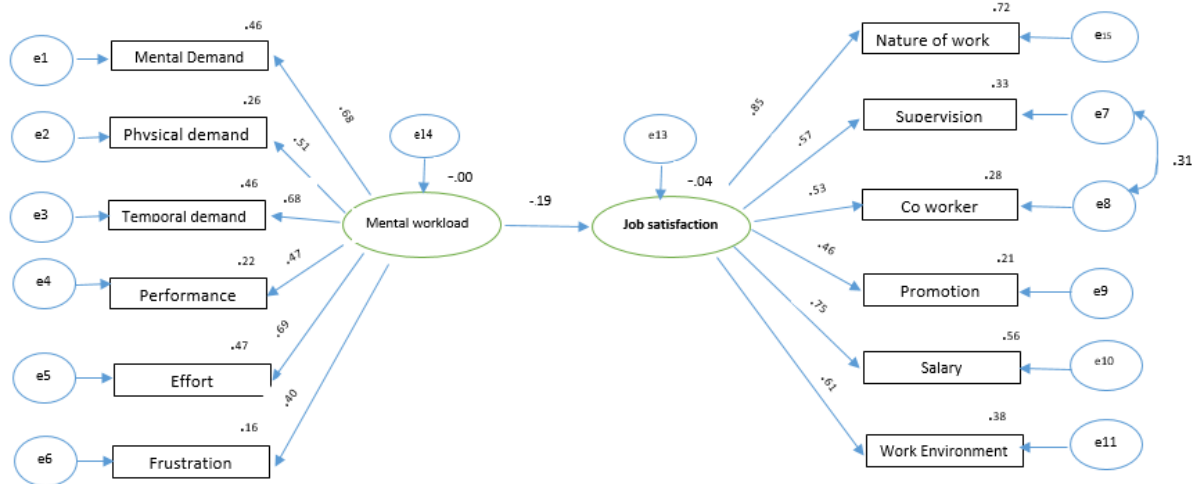


Figure 2: Relationship between job satisfaction and mental workload with job control as a mediating variable

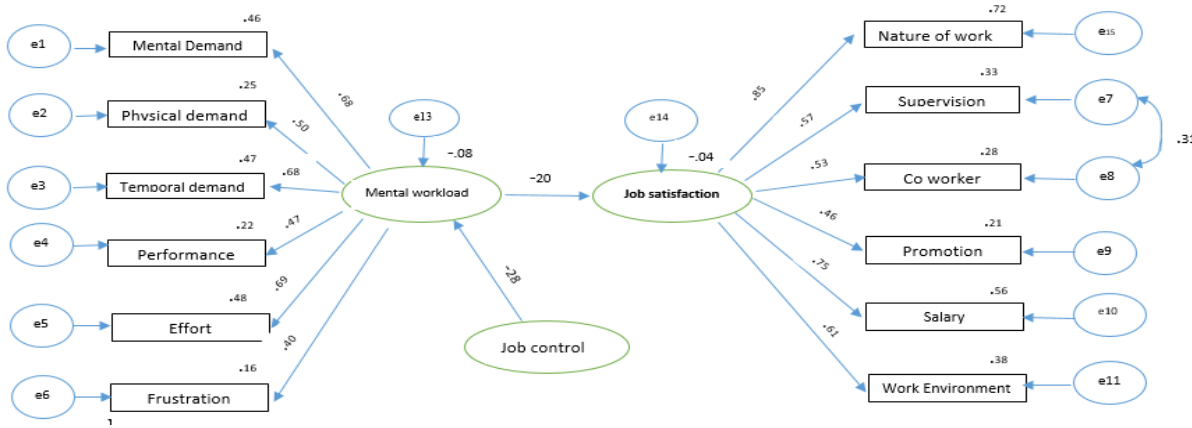


Table 4: The relationship between two variables of the workload and job satisfaction with job control as mediating variable

Goodness of fit index (GFI) Job	CMIN/DF	IFI	TLI	CFI	RMSEA
Midwives	2.254	0.847	0.804	0.842	0.072
An acceptable level	<5	0.08<	0.08<	0.08<	<0.08

**DISCUSSION**

The present paper examined the relationship between mental workload and job satisfaction taking into account the mediating role of job control in midwives. The results showed that job control properly elaborates on the relationship between mental workload and job satisfaction. In addition, the results of regression analysis indicated that, to some extent, job control attenuated the negative effect of mental workload on job satisfaction. The results can be explained by the results of Karasek’s control-demand model. Based on this model, rather than experiencing stress and pressure, an individual can enjoy active learning and feel efficient, competent, and successful when they have the opportunity and enough power to carry out the tasks [33]. A study by Oscar et al. in USA, Texas on job satisfaction and mental workload in physicians and also a study by Zamanian et al. On mental workload and job satisfaction of professors and university personnel found no relationship between job satisfaction and mental workload<sup>4,26</sup>. These findings are inconsistent with the present study. Khandan et al. Studied the relationship between mental workload and job satisfaction in a heavy part production factory. They showed that workload did not have a significant effect on job satisfaction; while performance had a positive relationship with job satisfaction and

hopelessness had a negative relationship with job satisfaction<sup>28</sup>. Beheshti et al. Reported no significant relationship between job satisfaction, workload, and general health, while they found a significant relationship between some elements of the workload and job satisfaction [24]. Goetz (2013) examined the effects of workload and healthy behaviors on job satisfaction of general practitioners in Germany. To examine job satisfaction, Warr-Cook-Wall job satisfaction (revised version) was used. To examine healthy behavior, BMI and demographic data were used. The results showed that there was no relationship between physical activity and job satisfaction. Healthy behaviors and health indices were significantly related to job satisfaction [36]. Platis (2015) in Greece reported that there was a relationship between job satisfaction and performance in health care systems. There is a strong relationship between performance and job satisfaction. The present study emphasized on the role of management in creating a decent work environment. In particular, in the case of health care services, personal feeling, viewpoints, and attitudes of nurses have a key role in the fulfillment of tasks<sup>6</sup>. The proposed model indicated a significant and negative relationship between two variables of mental workload and job satisfaction. By adding job control (as a mediating variable) the relationship between the two variables of the workload and job satisfaction was intensified as an increase in

job control relatively alleviates mental workload, which in return increases job satisfaction. Portoghese et al (2014) in Italy conducted a study on the mediating role of job control in the relationship between job burnout and workload in hospital personnel. The results indicated that job control had an effect on the relationship between workload and job burnout. That is, there was a positive and significant relationship between workload and job burnout so that low job control intensifies the relationship, which is consistent with our findings<sup>25</sup>. Still, job control adjusted the relationship between job conflict and destructive behaviors. In other words, by adding job control as a mediating variable, there is a relationship between the conflict and destructive behavior<sup>32</sup>. The mean score of mental workload, job satisfaction, and job control were 70.98, 193.77, and 14.65 respectively. That is, the subjects had a high level of mental workload and experienced high mental pressures during the work. The mean score of job satisfaction was 193.77, which indicates that the participants had a relative satisfaction with the work environment and condition and the benefits. In addition, total score of job control showed that the hospital workers had a proper control of their tasks. The results of a study in heavy parts, factory showed that the job satisfaction was equal to 65% on a moderate level and workload with a mean score of 85.11 was at a high level<sup>28</sup>. A study in 2007 by Oscar et al. In the USA Texas on job satisfaction and mental workload of physicians showed that mental workload had a strong relationship with physicians' remote services, so that it was mostly stable<sup>4</sup>. A study by Muhammadani (2015) in Pakistan on the midwives' job satisfaction in gynecology ward showed that the subjects had a high level of satisfaction with organizational structure and the benefits and a low level of satisfaction with work environment and opportunities at work. In general, the midwives' satisfaction was high<sup>9</sup>. A study by Rafiee indicated that nurses experienced a high level of workload at work<sup>5</sup>. The present study showed that there was a significant relationship between demographic variables (age, work record, mental workload, and job satisfaction,). This can be explained by the fact that with aging an increase in work record, the individual gains more experience and feels less mental workload, which in return results in a higher job satisfaction. Asgari et al. (2011) examined job satisfaction of operating room technicians and found no significant relationship between job satisfaction and demographic variables. In addition, there was no significant relationship between work shifts and job satisfaction<sup>37</sup>. Other studies on the relationship between workload and job satisfaction found no significant relationship between job satisfaction and gender<sup>3</sup>. Here, no significant relationship was found between age and work record, and job control, as job control is rooted in one's skills, which can be independent of age and work record. The higher the skill, the higher the job control. Mirmolaie et al. Examined job satisfaction in midwives and reported that there was a significant relationship between total job satisfaction and work record. They reported no significant relationship between job satisfaction and age<sup>34</sup>. As the findings, showed the highest score among the aspects of mental workload was for the effort. In terms of the aspect of job satisfaction, the highest score was obtained from nature of the job. Taheri et al. Demonstrated that in addition to physical work, nurses are affected by other side-effects such as time pressure, no control on the pace of work, and mental demand, which have a determining role in needle stick injuries [38]. Hashemi et al. Studied mental health and job stress in midwives working in hospitals with operating room and found that mental health disorder in public hospital midwives was higher than that in private hospital midwives<sup>39</sup>. A study on job satisfaction and workload at universities showed that professors' workload was higher than that of other personnel<sup>26</sup>. The results about the relationship between job stress, self-efficacy, and mental health in nurses and midwives in hospitals indicated that individuals with a master's degree experienced a higher level of stress, which might be due to more responsibility assigned to them<sup>8</sup>.

Given the results, the less the workload of personnel, the higher the job satisfaction and control on tasks. By implementing

better management approaches, it is possible to lower the workload in workers and in return improve job satisfaction in personnel.

A major limitation of the present study was its scope limited to mental workload and job satisfaction and omittance of other variables that are affected by the job control. Future works can encompass other variables like occupational burnout in medical sciences personnel and other job groups. Another limitation was failure to categorize nurses based on the type of their tasks. Moreover, the study was limited to educational hospitals located in Ardabil and Shoushtar and the results should be generalized with caution. Moreover, several studies populations should be used for sampling along with other data gathering tools.

## CONCLUSION

There is a relationship between the increase in mental workload and job satisfaction and control. So that, the lower the workload in workers, the higher the job satisfaction and better the control of assigned tasks. Therefore, job control has a key role in improvement of work condition in hospital midwives. There is a need for a better management approach to lower workload and improve job control, which results in job satisfaction in hospital workers.

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