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# The relationship between work resources and physical and mental health among nurses: A confirmatory factor analysis

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## Abstract:

**INTRODUCTION:** Physical and mental health is one of the major factors during work life among nurses that can be affected by differential aspects of work such as work resources. Therefore, the present study was conducted to determine the relationship between work resources and physical and mental health among nurses.

**MATERIALS AND METHODS:** This study was a cross-sectional correlation study performed on 320 nurses employed in hospitals affiliated to Isfahan University of Medical Sciences in 2018. The data gathering tools was Work Resources, Physical and Mental Health questionnaires. data were analyzed using descriptive and analytical statistics (Pearson's correlation coefficient, analysis of variance, linear regression, and confirmatory factor analysis).

**RESULTS:** Data analysis revealed that 46% and 34% of the participants had moderate and well work resources, respectively. Furthermore, 48% and 54% of nurses had physical and mental health in high level, respectively. Pearson's correlation coefficient showed that work resources score had significant positive relationship with a score of physical and mental health score ( $P < 0.001$ ,  $r = 0.23$ , and  $P < 0.001$ ,  $r = 0.17$ , respectively).

**CONCLUSION:** Work resources are likely to be associated with an increased physical and mental health level among nurses in Iran. The parameters illustrated in the work resources can act as acceptable predictors for physical and mental health as general health.

## Keywords:

Mental health, nurses, physical health, work resources

## Introduction

Human resource is considered as the most important factor in the development of each country and organization. Therefore, the physical and mental health of the employees is one of the phenomena and factors affecting job efficiency and the efficiency of individuals in an organization. Occupational factors are factors with special importance and sensitivity affecting the physical and mental health of the

employees. Since any working environment has its own value, physical and mental status, and ability and interest, individuals must be occupied in an environment they are compatible with.<sup>[1]</sup> The output of this process will be the increase in job satisfaction, followed by human resource health, decrease in organizational stress, and increase in productivity. As human resources in the health-care system serve as an arm providing care with an important contribution to the health of the community, the quality of service requires maintaining and improving the health among the service providers.<sup>[2]</sup> In fact, one of the important

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considerations in the occupational area is to consider the employee's job resources. The work resources refer to physical, psychological, social, and organizational dimensions of occupation, which lay at various levels, including organizational, social, and interpersonal relationships, work organization, and task level.<sup>[3]</sup> In the study by Adibi and Golparvar (2011), it has been shown that some of the work resources among the staff, including supervisor support, technological support, appreciation and training, job control, and role conflict, were in the moderate levels.<sup>[4]</sup>

In fact, work resources can affect a person's life and health. A new movement has emerged in the past few decades, and health has been recognized as a human right and a social goal worldwide, that is, health is essential for meeting the basic needs and improving the quality of life of humans and it should be available to all humans.<sup>[5]</sup> Physical and mental health as one of the important indicators of life satisfaction is not only the lack of illness and being good, but it also includes full physical, spiritual, and social health.<sup>[6]</sup> In this regard, a study carried out by Sadeghian and Hoseinzade indicated that 53%, 70%, and 93% of nurses, respectively, had low, moderate, and high physical complaints such as backache. An investigation by Hojjati *et al.* also indicated that 52% and 48% of nurses had undesirable and desirable mental health status, respectively.<sup>[7]</sup> Moreover, 69% and 29% of the nurses had partially desirable and undesirable physical health, respectively.<sup>[8]</sup> The results of the study by Wood *et al.* suggested that there was a significant relationship between the use of support and the three dimensions of work resources of employees, including job satisfaction, anxiety and satisfaction, and depression.<sup>[9]</sup> In a study by Ghislieri *et al.*, it was also found that work-family conflict had a positive relationship with occupational demands and severe managerial reactions and a negative relationship with perceived organizational support. However, there was no significant relationship between the enrichment of work and family and the aspects of severe reaction of the supervisor.<sup>[10]</sup>

Nurses lacking a good general health will not be able to provide good care, such as physical and mental support for patients, hence increasing the risk of mistakes and the occurrence of occupational accidents, the outcome of which will ultimately affect the patients and the nurses themselves. Therefore, considering the nurses' health and its consequences on patient care as well as the relationship between occupational factors and nurses' health is of great importance. Thus, regarding the aforementioned cases and since the work resources considered in this study including supervisor support, appreciation, colleague support, emotions and working conditions, etc., reduce work and emotional stress on

the employees, in addition, taking into account the fact that reducing occupational stress and having job control as well as feeling of independence at work can reduce the tendency of individuals to commit diversionary behaviors, paying attention to the occupational life of health-care providers, especially nurses, and considering their physical and mental health are essential in order to improve the level of care for patients. Therefore, the present study aims to detect the relationship between work resources and physical and mental health among nurses in Isfahan University of Medical Sciences in 2018.

## Materials and Methods

This is a cross-sectional study conducted on 320 nurses affiliated to Isfahan University of Medical Sciences in 2018. The sample size was calculated as 320 based on Cochran index.

The inclusion criteria were as follows: (1) having an informed consent to attend the study; (2) 6 months of work experience (at least). Having medical disease (such as thyroid, diabetes, heart and kidney) and experiencing stressful events during 1 year ago (such as divorce and death of family member) were exclusion criteria. To collect the data, a demographic-work questionnaire, The Work Resources Questionnaire (25 questions) and physical and mental health questionnaires (17 questions) were used. The Work Resources Questionnaire consists of 25 items and 4 dimensions (work conditions, supervisor support and coworker support, and emotion). In addition, the Physical and Mental Health Questionnaire including 17 items was applied. The Work Resources and Physical and Mental Health Questionnaires used in 5-point Likert scale (1–5) and used in Esakhani and Niri *et al.* (2016) studies in Iran, respectively.<sup>[11,12]</sup> In addition, the content and face validity of the questionnaires were confirmed by applying the opinions of experts on the first draft. The reliability of the instruments was evaluated using a pilot study on twenty nurses eligible to participate in the study. In assessing internal consistencies, Cronbach's alpha was 0.91 and 0.89 and 0.85 for work resources and physical and mental health questionnaires, respectively.

After getting the letter of introduction from the research chancellery of the university, the researcher referred to selected hospitals, and after explaining about the research aims and filling the four questionnaires, sampling was started and the research was conducted. The questionnaires were given to the nurses after getting their signed informed consent form. Then, the researcher checked the inclusion and exclusion criteria and the eligible nurses were given questionnaires for assessing demographic and working characteristics, work resources, and physical and mental health. Data were analyzed by

Pearson’s correlation coefficient, oneway analysis of variance, and linear regression test and structural model through SPSS version 22 (IBM Inc., Chicago, IL, USA) and AMOOS (V22) (IBM Inc., Chicago, IL, USA).

## Results

The results showed that 34.1% of participants were in the age range of 22–27 years, 38.4% in 28–32 years, 16.3% in 33–38 years, 9.4% in 39–44 years, and 1.9% were aged >45 years. Nearly 20.6% were males and 79.4% were females. Around 50.6% were single and 49.4% were married. Almost 91.6% completed BS and 8.4% completed MS and PhD. Nearly 14.4% had <1 year work experience, 45% had 1–6 years, 13.1% had 7–12 years, 14.1% had 13–18 years, and 13.4% had >19 years. The results of Pearson’s correlation coefficient showed a positive correlation between the total score of work resources and physical health which means that high work resources are related to high physical health score in nurses [Table 1]. In order to investigate the level of the effect, fitting of the regression model has been analyzed [Table 1].

To evaluate and present the model, work resources (x) and physical health (y) after examining the model adequacy indices and then the fitted model are summarized in Table 2.

Furthermore, the results of Pearson’s correlation coefficient showed a positive correlation between the total score of work resources and mental health which means that high work resources are related to high mental health score in nurses [Table 3]. In order to investigate the level of the effect, fitting of the regression model has been analyzed [Table 4].

To evaluate and present the model, work resources (x) and mental health (y) after examining the model adequacy indices and then the fitted model are summarized in Table 4.

The results of the structural equation modeling test showed that work resources do not affect physical and mental health [Table 5].

As illustrated in Table 5, the significance value of physical and mental health was >0.05. In other words, there was no relationship between physical and mental health and work resources.

## Discussion

The objective of this study was to determine the relationship between work resources and the physical and mental health of nurses. The results of the study suggested that there was a significant correlation between work resources and physical and mental

**Table 1: Correlations between work resources and physical health**

R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SE of the estimate
0.443	0.164	0.162	8.2

SE=Standard error

**Table 2: T-test result for correlations between work resources and physical health**

Model	Unstandardized coefficients		Standardized coefficients (β)	t	P
	B	SE			
1					
Constant	16.2	1.4		11.5	0.001
Work resources	0.13	0.01	0.443	7.9	0.001

Predictors b: (Constant), work resources. Based on the above results, work resources and physical health were related.  $Y=16.2X+0.13$ . SE=Standard error

**Table 3: Correlations between work resources and mental health**

R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SE of the estimate
0.405	0.172	0.170	7.2

SE=Standard error

**Table 4: T-test result for correlations between work resources and mental health**

Model	Unstandardized Coefficients		Standardized coefficients (β)	t	P
	B	SE			
1					
Constant	15.9	1.3		11.6	0.001
Work resources	0.13	0.01	0.405	8.1	0.001

SE=Standard error. Based on the above results, work resources and mental health were related.  $Y=15.9X+0.13$

**Table 5: Fitness model of relationship between work resources and mental and physical health due to happiness**

Independent variable	Dependent variable	Critical ratio	Significance level
Mental health	Work resources	1.435	0.151
Physical health	Work resources	1.943	0.052

health of employees. This means that the correlation between the two variables is linear and direct, i.e., both variables increase and decrease at the same time; in addition, the correlation between the two variables is relatively strong. Therefore, the first hypothesis of the research was confirmed, meaning that changes in work resources would cause fluctuation in dependent variables (physical and mental health), as the higher the amount of work resources, the more positive the physical and mental health results. In this regard, the results of the study by Danesh *et al.* revealed that job requirements predicted emotional exhaustion of teachers more strongly than work resources. In addition, the relationships of these two variables with strength were the same but opposite of each other. Moreover, the results showed that emotional exhaustion, the

relationship among job requirements, health, and strength slightly mediate the relationship between work resources and the organizational commitment of teachers. Finally, based on the findings of this study, the adoption of programs with priority of adjusting job requirements followed by improving work resources available to teachers was proposed as an effective way to reduce job burnout and increase work, health, and organizational commitment.<sup>[13]</sup> In a longitudinal study conducted by da Costa *et al.* aiming to determine the risk factors associated with occupational neuromuscular disorders, it was shown that the most common occupational factors associated with neuromuscular disorders included heavy work, smoking, high body mass index, and high psychosocial and occupational demand.<sup>[14]</sup> Niedhammer *et al.* in a study titled "The importance of psychosocial and occupational factors on general outcomes of public health in the national survey in France" showed that low levels of decision-making and social support as well as high psychological needs were important risk factors for the health of working individuals, which have been associated with low levels of health and long-term absence of individuals. Moreover, high job requirements were associated with work damage.<sup>[15]</sup>

Niri *et al.* in their study with the aim of "determining the effect of occupational stress on general health and job performance among flight attendants" showed that there was a negative and significant relationship between work-related stress and job performance. This means that job performance decreased with increasing occupational stress; in addition, general health plays a mediating role in the stress associated with workplace and job performance. Based on the results of the study, which confirmed the negative impact of stress on job performance and also the mediating role of the public health in the relationship between stress and job performance among the flight attendants, a comprehensive program on employee stress management, general health promotion, as well as an examination of the status of occupational promotion and security and providing opportunities for their participation in decision-making was proposed to improve the performance of the employees.<sup>[13]</sup> Song *et al.* also showed that there is a significant difference between the happiness index and type of ward, type of work, duration of employment, position, and salary of the staff. Moreover, the happiness index was also influenced by self-efficacy, work environment, and emotional affairs.<sup>[16]</sup> The results of the study by Villotti *et al.* revealed that, in a general working environment, social support provides the grounds for enhancing the perceived productivity through reducing the internal concern level and raising the level of trust. In this study, during the multilevel (serial) multiple mediator test, an indirect effect of high specific social support of

the workplace on job productivity through reducing both internal motivation and occupational long-term self-efficacy was noticeable.<sup>[17]</sup> The results of this study emphasized the difficulty of integrating the work of individuals with severe mental disorders due to limited access to workplaces in supportive and nondiagnostic environments. The social participation represents an effective model for supporting individuals with severe mental disorders to integrate the labor market, and in public work places, social protection provides a better understanding of labor productivity through lower levels of internal concern and higher self-confidence in the face of occupational problems.

The adverse work situation with various shifting of nurses and their high work burden in their departments were of the limitations of this study, which could make problems when completing the questionnaires. In this regard, the researcher tried to manage the situation through spending time as much as possible. Since work resources vary in different work environments and different societies, it is recommended that the work resources used in this study, whose validity and reliability were confirmed, be used among other employees. It is also suggested that the relationship of work resources with physical and mental health in other employees of organizations, not only in health care but also in other institutions, be examined. The relationship between work resources and other health aspects, including spiritual health, is also recommended to be investigated.

## Conclusion

The results of the current study showed that high work resources is related to high physical and mental health among nurses, so work ability in midwives. According to our findings, a lot of work resources should be provided in order to increase physical and mental health.

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## Conflicts of interest

There are no conflicts of interest.



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