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Vulnerability Study of Health Human Resources in the Iranian Ministry of Health and Medical Education

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Abstract

Background and Objectives: Health human resources is the major asset of the health system. The status of human resources in upstream and regulatory health organizations can exert high impact on the effectiveness of health policies and the performance of health system. This study, hence, was designed to explore the possible area of human resource damage to the employees of the Iranian Ministry of Health and Medical Education (MOHME).

Methods: A total of 316 MOHME staff was surveyed. A questionnaire containing 36 items related to three dimensions of human resources damage, including behavioral, structural, and contextual dimensions was designed and used as the study tool. The content validity of the questionnaire was ensured by applying the experts' opinions. The reliability of the instrument was ensured by obtaining a Cronbach's alpha of 0.93. T-test and Friedman test were sued for inferential analysis of the data.

Findings: The behavioral dimension was perceived to represent the most vulnerable area of human resources damage, followed by structural and contextual dimensions. In regard to the behavioral dimension, 'motivational factors' was perceived to be the most important area of damage, followed by 'job satisfaction' and 'job security'. Regarding structural dimension, 'appointment and job promotion' received the highest perceived significance, followed by 'payment system' and 'recruitment'.

Conclusions: This study ranks the area of damage to health human resources in MOHME. Our results support the previous studies highlighting the role of behavioral factors in bringing damage to human resources. Our findings, therefore, could be applied to development of human resources supporting plans aimed at improving the performance of upstream governmental health organizations. Specifically, providing motivating incentives and implementing strategies supporting job satisfaction and job security can bring significant protection to health human resources.

Keywords: Health human resources; Human Resources Performance; Vulnerability analysis; Quality of work life

Background and Objectives

Organizations are kinds of social system which are affected by the environmental changes [1]. As current evidence shows, almost all organizations are facing different organizational difficulties [2] and lack of relationship between effective management and managerial skills depicts an unsatisfactory picture of the overall management skills Organizational [3]. Pathology often deems to be the most critical part of establishing an organizational development plan. Hence, almost all successful organizations perform the pathology study of human resource to improve the effectiveness of their organization [3-7]. An organizational pathology is a collective process of gathering appropriate information about organizational problems and their roots, analyzing the information and categorizing the problems in two level of general and technical to deliver suggestions to resolve the problems. This process runs by a group of organizational pathology experts and consultants [2, 6]. Huselid et.al speaks of organizational development as a systematic method which is based on planned strategic changes and the best way for facing with organizational transformation [7] which has strong impact on employee psychological empowerment [8].

A variety of organizational pathology models are in-

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troduced by different scholars and experts who examine the organization from different dimensions. Among important models are Marvin Wise Board seven-dimensional model, Harrison model and Three-dimensional analytical model [9, 10]. The basic model of this study is the three-dimensional analytical model.

According to this model, The management and organization phenomena can be analyzed from three dimensions of behavioral, structural and contextual factors. Here, the behavioral factors refer to all factors related to human resources which constitute the organization's content. These factors include organizational motivation, working morale and job satisfaction. Structural factors embrace all those relations connecting the internal components of the organization to one another and into a unique body. These factors include organizational structure and regulations. And the contextual factors are those environmental and external factors that cause the behavioral and structural factors to happen [6, 11, 12]. The main reason for calling the model 'three dimensional' is that there isn't any organizational phenomenon which is not explicable by the interactions between three factors of behavioral, structural and contextual. In other words, there is a close relationship between these three factors that makes them integral. They are as three branches grown out of an organizational body [13, 14].

The purposes of this study are to help the managers of ministry of health and medical education (MOHME) to resolve the organizational challenges and increase the organizational effectiveness through identifying the human resource problems and damages from different perspectives, and prevent the current challenges to get worse and the human resources' utilization to diminish.

Methods

A cross-sectional and descriptive field study method was used in 2012. The target population of the study includes all 2852 staff in MOHME. Cochran formula was used to determine the sample size. 'p' and 'q' were considered 0.5 to maximize the size of the sample (z=1.96 and d=0.05). The sample size was determined 339. Cluster sampling method was used to determine the sample members. The sample members were categorized according to the three variables of the 'gender', the 'organizational position' and the 'education'. Then, random sampling was used to determine the sample members within each category.

A semi-comprehensive review of literature was provided to gather the secondary data which contained book, research articles, documents and reports for developing the theoretical framework. Moreover, a close-ended questionnaire including 36 questions was provided to collect data on human resource damages and testing the study's hypothesis. Likert approach was used in designing the questionnaire to scaling the responses in the survey research. The main areas measured by questionnaire includes organizational structure (questions 1 to 3), method improvement (questions 4 and 5), mechanized information system (questions 6 to 8), payment system (questions 9 to 11), selection and recruitment (questions 12 to 14), appointment and job promotion (questions 15 to 17), performance evaluation (question 18), organizational culture (questions 19 to 21), motivation and job satisfaction (question 22 to 26), leadership (question 27), training and development (questions 28 to 31), job security (questions 32 and 33) and customer orientation (questions 34 to 36).

Using expert opinion, Scientific Validity of questionnaire was tested by content validity method. Moreover, the questionnaire has been used for data gathering in other studies in which the validity matter had been confirmed [15, 16]. Also for testing the reliability of questionnaire the Cronbach's alpha was calculated (α=0.93).

For analyzing the data SPSS v18 software was used to calculate descriptive statistics (including Mean,

Table 1 Demographic characteritics of the study sample

Variable	N	%
Sex *(n=316)*		
male	124	39.2
female	188	59.5
unanswered	4	1.3
Degree *(n=316)*		
Under bachelor	63	19.9
bachelor	152	48.1
master	89	28.2
PHD	8	2.5
unanswered	4	1.3
Work experience *(n=316)*		
< 1 year	7	2.2
1-5 years	81	25..6
5-10years	71	22.5
10-15 years	59	18.7
> 15 years	91	28.8
unanswered	7	2.2
Organization level *(n=316)*		
Employee	257	81.3
Supervisor	24	7.6
management	22	7
unanswered	13	4.1

frequency rate and standard deviation) and inferential statistics (including one-sample T-test and Friedman test ranking). The cut-off score in one-sample T-test was considered three. The significance level was considered 0.05 in sampling and all analytical tests throughout the study.

Results

From 340 questionnaires distributed, 94% were answered. 59.9% of participants were women. The average work experiences of participants were calculated about seven years. 48.1% of participants had a master's degree. The demographic statues and other features of participants are provided in the table 1.

The results indicated that among the tripartite factors, structural (P-value Mean= 2.62) and behavioral factors (P-value Mean= 2.41) were determined as critical effective damages in the viewpoint of the staff. It is noteworthy that the less the mean, the more damaging the factor is. Contextual factors are not known as human resource damages (P-value=0.817, Mean=3.01).

According to the result of the Friedman test provided in table 3, among tripartite factors, behavioral ones in comparison with the structural factors were determined as the most critical damages to human resources. However, the contextual factors were not recognized effective enough.

Having finished with the tripartite factors analyzing, the sub-factors of each main factors were analyzed. According to the results provided in table 4, five out of seven structural sub-factors including 'organizational structure', 'payment system', selection and recruitment' appointment and job promotion' and 'performance evaluation' were determined as critical effective damages (P-value). The damaging rates of 'Method improvement' and 'mechanized information system' sub-factors were not determined significant to researchers. According to the ranking table of the above mentioned five significant sub-factors, the most effect belonged to the sub-factor 'appointment and job promotion'. The statues of other sub-factors are provided in table 5.

According to the result of the one-sample t-test, all five behavioral sub-factors were determined as critical effective damages. The ranking results of them , as provided in table 4, indicated that sub-factors including 'organizational motivation and job satisfaction', 'job security', 'training and development', 'leadership' and 'organizational culture' were determined as critical effective damages successively.

Table 2 T-Test results for contextual, behavioral, and structural Factors

Factoras	P-value	d	t	SD	Mean
Structural factors	< 0.001	315	-9.09	0.74	2.62
Behavioral factors	< 0.001	314	-12.9	0.81	2.41
Contextual factors	0.817	313	0.23	1.06	3.01

Discussion

The results indicated that the most damaging effects belong to the behavioral, structural and contextual factors successively. According to the studies by Joneydi and his colleagues and Kamrani, structural and contextual factors were determined as the most and the least effective damages successively. As it is clear, the result of this study about contextual factor is the same as the Joneydi's and Kamrani's [15, 16]. Esfandiyari and his colleagues achieved the same results as what the researchers achieved in this study. So that the behavioral factor had the most damaging effect and the contextual factor had the least damaging effect [17]. Having the most damaging effect concerning behavioral factor provide us that the management of staff units of the MOHME have not been able to establish the appropriate context and requirement in relation to each of the behavioral sub-factors successfully. This failure in a staff unit of a system can brings about non- satisfactory effects on the performance of staff and also the line personnel. Among behavioral sub-factors, 'organizational motivation and job satisfaction' had the most damaging effect. The same result is

Table 3 Comparison of 3-dimansion factors by Friedman test

Friedman test result	Mean Rank	Variables
Chi-Square=17.32 df=2 P-value < 0.001	2.04	Contextual factors
	1.61	Behavioral factors
	2.34	Structural factors

Table 4 T-test results for variables of contextual, behavioral, and structural Factors

Factors	Variables	P-value	df	t	SD	Mean
Structural factors	Organization structure	< 0.001	315	-8.4	0.89	2.58
	Method improvement	0.001	314	3.22	0.97	3.18
	Mechanized information system	< 0.001	315	5.66	0.88	3.28
	Payment system	< 0.001	315	-11.93	1.02	2.32
	Selection and recruitment	< 0.001	315	-11.04	1.08	2.33
	Appointment and job promotion	< 0.001	314	-13.13	0.96	2.29
	Performance evaluation	< 0.001	307	-9.43	1.12	2.40
Behavioral factors	Organization culture	< 0.001	311	-6.48	0.93	2.66
	Motivation and job satisfaction	< 0.001	314	-15.68	0.92	2.19
	leadership	< 0.001	300	-5.88	1.13	2.62
	Training and development	< 0.001	312	-9	0.96	2.51
	Job security	< 0.001	311	-11.01	1.14	2.29
Contextual factors	Customer orientation	0.817	313	0.23	1.06	3.01

achieved by Joneydi, Esfandiyari and Tavakoli [15, 17, 18]. Moreover, 'organizational motivation and job satisfaction' in this study had the least rank among all behavioral sub-factors. That means the MOHME should pay more attention to make the workplace atmosphere more motivational and satisfactory to the staff. Among behavioral sub-factors 'organizational motivations and job satisfaction', 'job security', 'training and development', 'leadership' and 'organizational culture' had the most damaging effect on human resource successively. However structural factor had the first rank among factors with damaging effect on human resources in Joneydi and Kamrani's study [16], the factor had the second rank in this study and the study of Esfandiyari and Tavakoli [17, 18].

Table 5 Comparison of variables of 3-dimansion factors by Friedman test

Factors	Result	Variables	Mean
Structural factors	Chi-Square=481.1 df=6 P-value < 0.001	Organization structure	3.96
		Method improvement	5.38
		Mechanized information system	5.57
		Payment system	3.23
		Selection and recruitment	3.25
		Appointment and job promotion	3.16
		Performance evaluation	3.46
Behavioral factors	Chi-Square=101.9 df=4 P-value < 0.001	Organization culture	3.42
		Motivation and job satisfaction	2.49
		leadership	3.3
		Training and development	3.21
		Job security	2.58
Contextual factors		Customer orientation	

Among structural sub-factors, 'appointment and job promotion' and 'payment system' had the most damaging effect among all successively. Esfandiyari and his colleagues [17], Tavakoli and Kamrani [16, 18] archived the same result as this study's. However Joneydi speaks if two structural sub-factors 'selection and recruitment' and ''appointment and job promotion' as having the most damaging effect on human resource [15].' Appointment and job promotion' is one of the most critical functions of human resource management system due to having a significant effect on recruitment and making the staff satisfied. Moreover as mentioned above, this structural sun-factor had the most damaging effect on human resource in MOHME. Thus it seems that designing the staff's job career and job promotion path should be among important policy priorities of the MOHME. The payment and the payrolls management system in MOHME should be revised structurally, inasmuch as it had significant damaging effect on human resources in this study. It's because when the payment system is designed appropriately then the organizational health economy would be guaranteed and the workforce would be recruited correctly [19]. No significant damaging effect observed concerning contextual sub-factors including customer orientation.

Conclusions

According to the study's result the MOHME achieved an approximately high score in contextual dimension factors. That indicated of not existing critical contextual damages in the MOHME. Having no damages concerning contextual factor can be due to the specific nature of the activities and the customers of the ministry which includes academics, students and university staff. Hence the MOHME have been successful in providing a good communication network with its customers. Similarly, Joneydi, Kamrani and Esfandiyari provided the same argue about the communication network in MOHME. Human resource development will not obtain just through professional and technical training today [17]. Hence the MOHME should create a motivational environment in workplace through designing systems of payroll management, appointment and job promotion, skill development, information management and job enrichment to provide an effective management to improve the human resources' performance.

Competing Interests

The authors declare no competing interests.

Authors' Contributions

The authors contributed equally to this work.

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