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Assessment of the Required Manpower for Shiraz University of Medical Sciences hospitals based on Ministry of Health and Medical Education Method, 2012

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A B S T R A C T

Introduction: New organization's success depends on the efficient use of human resources In this study, we aimed to estimate the staffing needs in hospitals of Shiraz University of Medical Sciences (SUMS) according to model proposed by the Ministry of Health and Medical Education in 2012.

Method: This is a cross-sectional definitive study conducted in three general and six specialized SUMS hospitals. The research tool used was a checklist that determines the number of nurses, paraclinic and service employees and finally the decrease and increase of human resources in the departments of the hospitals regarding Iranian Ministry of Health (MOH) issues. The data were collected and analyzed using SPSS software to determine the differences between the current situation in accordance to MOH issues.

Results: Results showed that of the nine teaching hospitals of SUMs in 2012, Namazi hospital had 288 redundant staff and Khalili hospital had a shortage of manpower in 8 places . We observeda deficiency in human resources in all the studied hospitals. Also, the distribution of human resources among most of the hospital departments was not conform with MOH issues.

Conclusion: Various models have been proposed for estimating human resources of hospitals. Because of better ergometer and time to estimate the correct manpower, the model introduced by the Department of Health is suitable for planning to increase the efficiency and effectiveness of the hospitals.

Keywords: Manpower planning, Health centers, Health Ministry model, Hospital

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Introduction

Manpower assessment and planning is a deep and wide subject that is the main task of management(1). All over the world, healthcare systems are increasingly faced with a shortage and distribution of skilled labor (2). Educated manpower shortage as the main obstacle in provision of health services is discussed and the proper management of human resources can increasingly improve the effectiveness of human resources in health systems(3). There is a general agreement states despite the importance of human resources, it is a neglected component in the development of health system in low-income countries(4). The World Health Report (2006) states that there is a shortage of health care workers around the world including almost 4.3 million doctors, midwives, nurses and support staff (5).

Planning of the number of manpower is still done traditionally. To eliminate inequities and inefficiencies in the health system, the number and distribution of clinical staff should be planned so that the involved population's health needs can be satisfied. In addition, it is essential to continuously review manpower planning in the health system in order to adapt to unforeseen changes (6).

Method of supplying manpower is a regular process based on a profound logic that is used to determine the correct number and type of required manpower to provide the standard care in an institute. (7). Factors such as systematic assessment of the number and distribution of employees, competent staff selection process based on provable criteria, participation in the treatment process and the way of communication between patients and other staff in the care team can affect the effectiveness and efficiency of the clinical team. Considering these factors, appropriate fields for mitigation of negative impacts on the shortage of manpower in the health system will be provided (8). Topics about manpower in the health sector related to the job description, issues related to calculation of the number

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of required personnel, performance evaluation, etc. have been discussed and among the most complex issues are topics about the calculation of the number of required personnel in hospitals(9).

The subject of providing and utilizing the required manpower, the method of calculations related to the needs of different ranks and jobs especially in the recent decade is considered as a big challenge due to the scheme of relative autonomy of hospitals. The most formal method and pattern by the former management and planning organization that was applied in 1376 (1997) was fixed rate of 1.54 per bed in the form of an instruction in public hospitals(10). In this method which was proposed by the ministry of health and medical education, all attempts were made to calculate the manpower of each ward of hospital including hospitalization, laboratory, clinic and support and other relevant wards such as operation rooms, etc. independently. As a result, in this method, indicators of each hospital can be specific. This method tries to generalize the fixed index from down to top instead of generalizing it from top to down (11). Therefore, this research aimed to study the assessment of all required manpower for Shiraz University of Medical Sciences hospitals based on ministry of health and medical education method 1391 (2012).

Methods

This cross-sectional research was conducted in three hospitals (Namazi, Hafez, Shahid Dastgheib) and six specialty and subspecialty hospitals (Shahid Faghihi, Shahid Chamran, Zeinab (PBUH), KHalili, Ghotbedin, Ibn Sina) affiliated to Shiraz University of Medical Sciences in nursing wards, laboratory, financial and supply department; all of their manpower participated in this study.

The research tool was a checklist designed based on previous studies and consisting of four parts. The first part was related to the hospital's profile including information such as its name, type of ownership, type of hospital, date of establishment and its operation; it consisted of six items. The second part was related to the information of performance indicators of hospitals in order to obtain the activity of hospital wards, bed occupancy rate and number of active beds and consisted of twelve items.

The third part was related to determination of the status of available star beds including information about the number of active beds in operation room, dialysis room, emergency and other beds for which there is no hoteling and consists of four items. And the last part was related to the number of staff in various occupational groups in hospital and it consisted of four items. This checklist was filled out by personal interview with the vice-chancellor of the university, authorities of wards and hospitals. This tool determines the number of nurses, paraclinic and supportive employees and finally the decrease and increase of the human resources among the departments of the hospitals regarding Iranian Ministry of Health (MOH) issues. The data were collected and analyzed by SPSS software. We determined the differences between the current situation based on MOH issues.

After gathering the data, surpluses and shortages of occupational groups in the studied hospitals were determined and the number of required manpower was estimated. The data were analyzed using descriptive statistics indicators and a guide to the proposed staffing pattern of Ministry of Health and Medical Education using statistical software excel.

Results

Information about the number of fixed and active beds, mean percentage of bed occupancy, year of establishment and area of each hospital is presented in table 1. As shown in the table, Namazi, Chamran and Faghihi Hospitals were of large size and Ibn Sina, Hazrate zeinab, Hafez and Dastgheib hospitals were medium size, and also Khalili and Ghotbedin hospitals were small size.

Situation of manpower in hospitals was determined based on the type of recruitment; the result is shown in Table 2. According to this table, the number of staff in Namazi hospital was2138, Chamran 733, Ibn Sina 178, Khalili 290, Ghotbedin 190, Zeinab 459, Hafez 306, Dastgheib 296, and Faghihi 1081.

Table 1. Identification of the Hospitals Studied

Hospital	Namazi	Chamran	Ibn Sina	Khalili	Ghotbedin	Hazrate zeinab	Hafez	Dastgheib	Faghihi
Years Founding	1331	1331	1370	1345	1339	1365	1342	1346	1318
The average percentage of occupied beds	85	65	96	60	38	72	75	75	96
Bed active	703	241	185	80	60	180	180	138	386
Bed constant	750	300	120	138	72	162	166	130	372
Area (Square meters)	250000	90000	3700	2500	2500	14000	2500	11000	2500

Table 2. Employment Status staffing of the hospitals studied

Hospital / Employment Status	Namazi	Chamran	Ibn Sina	Khalili	Ghotbedin	zeinab	Hafez	Dastgheib	Faghihi
	N	N	N	N	N	N	N	N	N
Formal Or non	752	365	88	154	103	232	149	139	479
tarhi	301	123	3	30	6	59	57	65	111
tabsareh4	395	119	33	53	44	79	47	41	184
tabsareh 3	690	126	54	53	37	89	53	51	307
total	2138	733	178	290	190	459	306	296	1081

Table 3 shows the total number of manpower in the status quo, number of required manpower based on proposed pattern, the distance between proposed pattern and the status quo for the studied hospitals. As you can see, after implementing the proposed pattern, the four studied hospitals have shortage of manpower while other hospitals have surpluses manpower. The status quo in comparison with the required manpower based on the proposed pattern of ministry of health and medical education in nine hospital of Shiraz university of medical sciences, the maximum and minimum distance between the status quo and the proposed pattern in assessment of manpower of the above-mentioned hospitals including clinical teams, financial administration and services are related to Namazi hospital with 288 surpluses manpower and Khalili hospital with a shortage of 8 persons. Table 4 shows the maximum surpluses and shortages of occupational groups in nine studied hospitals based on the proposed pattern. As you can see, the maximum shortages are related to nursing division and the greatest surpluses are related to cleaners group.

Table 3. Employment Status of the staff of the studied hospitals

Hospital / manpower	Namazi	Chamran	Ibn Sina	Khalili	Ghotbedin	zeinab	Hafez	Dastgheib	Faghihi
	N	N	N	N	N	N	N	N	N
The number of available manpower	2138	733	178	290	190	459	306	296	1081
Total power requirement proposed is based on a model	1850	631	381	298	251	593	522	279	1041
The distance from the proposed model	-288	-102	203	8	61	134	216	-17	-40

Table 4. Employment status of the greatest shortages and surpluses of health centers in the study

Hospital / Employment Status	Namazi	Chamran	Ibn Sina	Khalili	Ghotbedin	zeinab	Hafez	Dastgheib	Faghihi
	Groups	Groups	Groups	Groups	Groups	Groups	Groups	Groups	Groups
Most manpower shortage of professionals	Nursing	Operating room	Nursing	Operating room	Nursing	Operating room	Nursing	Operating room	Nursing
Most staffing of occupational groups	House keeper	House keeper	House keeper	House keeper	House keeper	House keeper	House keeper	Psychology or Social worker	House keeper

Discussion

The results of the study showed that among the nine studied hospitals, there was a little difference between the estimated manpower and the proposed pattern in four hospitals, Khalili and Ghotbedin hospitals had surpluses and Shahid Dastgheib and Shahid Faghihi hospitals had shortages. Other centers that are more different from the proposed pattern are Hafez, Ibn Sina, Zeinab (PBUH) that are facing surpluses and Namazi and Shahid Chamran hospitals that are facing shortages.

The greatest shortage of manpower was related to Namazi hospital with 288 persons. The mean of employees to the number of active beds in this center is 2.63 that in comparison with the confirmed mean of former management and planning organization of the country (Vice President of Strategic) that is 1.73, there is a shortage of 0.9. However, it seems quite natural because this method is not based on a scientific basis, but a part of the proposed pattern considers beds with hoteling (such as beds of operation room, emergency room, thalassemia, hemodialysis, maternity beds, etc.) in addition to the staffing of the total active beds in order to calculate a specific indicator for each hospital according to its specific circumstances.

In another study done by Matsumoto (2010), it was also shown that in Japan, USA and UK, poor distribution of human resources in the health care sector can be seen. (12). In the research done by Janati et al., they found on average in the studied public hospitals there were 1.08 nurses, 0.19 administrative personnel, and 0.33 service personnel for each bed; also, in the studied private hospitals there were 0.88 nurses, 0.42 administrative personnel, and 0.48 service personnel for each bed. In the studied hospitals related to the social security organization, there were 1.12 nurses, 0.40 administrative personnel, and 0.63 service personnel for each bed. They declared that all the studied hospitals in case of required manpower are different in nursing, administrative, financial and services from each other and from the standard of the ministry of health, management and planning organization and basic standards (13). According to the previous research and international standards, manpower cost is estimated about 55 to 60 percent of whole costs of the hospital operating costs. These issues indicate the undeniable importance of manpower in the hospitals and its considerable role in the hospital expenses They also show that the hospital manager can reduce the costs of the hospital by reviewing the alignment of manpower and recognition of unnecessary costs of their manpower and even increase the effectiveness and efficiency of hospital care (14).

Conclusions

Each health care system includes five parts (health care providers, health services, training centers for skilled manpower, government and information system); planning in this system requires communication between these parts and feedback loop and complex overlap between these parts (15). Since manpower is the main part of health care providers system and the greatest consumer of public spending on health in developing countries (16). It is emphasized that any mistake in calculation of the required manpower of hospital wards will cause wasting of available limited funds and lack of manpower productivity and efficiency. So a pattern should be utilized to estimate the required manpower based on determination of the required time for each unit of work in one work shift and the amount of work done by one person at the same time. According to some studies, the best option is the proposed pattern (11).

In general, in addition to the removal of a standard about assessment of hospitals manpower, many factors includingeducati, situation and concentration of organizational units, hospital equipment status, the volume of wards activity situation, contravention of activated beds with the number of approved beds in hospitals,etc. deeply affect the number and distribution of manpower (17).

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