Comparing the Hospital Indices before and after the Health Reform Plan in Imam Hospital of Ilam, Iran

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Abstract: Hospital indices before and after the health reform plan play an important role in health care policy. Health promotion programs focus on healthy people to reduce the incidence of disease (chronic and non-chronic) and to promote their health every day. In addition to the overall vision of health promotion programs which focus on improving the health status of the people believed that improving the health status of a community can improve the health of society as a whole. This was an applied research which was performed in monitoring-descriptive method. This study aimed to compare the hospital indices before and after the health reform plan in Imam Hospital of Ilam, Iran using questionnaire, statistical analyzes of comparing means and T-test. To test the hypothesis of statistical tests using the SPSS software version 22. Information analysis is considered as a scientific step of the cornerstones of any scientific research by which all research activities will be controlled and guided to achieve the results. This study also describes the research data and analysis of the hypotheses. The results showed that all hypotheses were confirmed and there was a significant relationship between hospital indices before and after health reform plan.

Keywords: Hospital Indices, Health Reform Plan, Imam Hospital.

Introduction

Each country has a standard or standards for health care services. The features of these standards are different from country to country and even by regions. Hospital is the most important health care provider which is responsible for clients to provide services for the prevention, early detection, timely treatment and rehabilitation. Hospital appropriate function has an important role in improving and returning of patients to the society as the slightest error will lead to serious problems (Taleb-Shahrestani, 2000). Health care (hospital) in any form (whether private or public sector) should have a clear and comprehensive standard for health care providers. Without standards, there will be no health care assessment. So, to supervise effectively the preparation and implementation of appropriate indices are needed. In this regard, both qualitative and quantitative indicators are important. Having information about the need for health care may be a standard tool in planning in this field. Hospital indices reveal hospital performance in various fields, so, attention to these markers is essential. Some of these indices showed not only the hospital, but also it clearly revealed the covered situation. At the hospital, qualitative factors are important. These indicators should be developed for each specific activity. Also, The hospital indices reflects the performance
of the hospital as the important factor of hospital function regularly and should be evaluated and compared in terms of their specific situation identified in the provinces, regions and various organizations (public, private, social security, etc.) (Sedghiani, 2005). Different sources provide different definitions of the term index or indices, based on the definition of the World Health Organization, indices or markers are variables that contribute to measure changes directly or indirectly (Ismaili, 2001), according to Health Ministry hospital indices are the ratio of the active to fixed bed, bed occupancy, bed-performance ratio, rotating bed, the acceptance of each bed, average length of patients’ stay, the surgery in the operating room (operation day), ratio of death to hospitalized people. The benefits of health reform plan was to reduce the paid amount of patients, the doctors, to determine tariffs physicians in outpatient clinics, improve the quality of hostelling, package and promote of vaginal delivery refractory patients, patients do not pay more than 10% of the cost of hospitalization and do not go to out of hospital for services. The requirements of this package are for those hospitals to provide all equipment and drugs needed for patients. Thus, this study aimed to compare the hospital indices before and after the health reform plan in Imam Hospital of Ilam, Iran to enumerate weaknesses to make recommendations in order to overcome their defects. Also, we hope to reach a point that in our hospitals provide the best services and people receive appropriate service.

Materials and Methods

This was an applied research which was performed in monitoring - descriptive method. The territory of this research was Imam Hospital affiliated with the University of Medical Sciences in the city of Ilam, Iran. The statistical population of this study was personnel of Imam Hospital in Ilam, Iran and aimed to compare the hospital indices before and after the health reform plan in the academic years of 2014-2015. The sample included 230 individuals of hospital staff.

Results

**Mean test of a community:** In this section studied the variables using mean test a community in the research population. In fact, it characterized the status of each of the variables in the population. Design of its hypothesis is as follows:

- **The null hypothesis:** the average variable was less than or equal to 3 ($H_0: \mu \leq 3$).
- **Alternative hypothesis:** the average variable was greater than 3 ($H_1: \mu > 3$).

If the significance level was less than 0.05, the alternative hypothesis will be accepted.

**The first hypothesis test:** there is a significant difference between the ratio of active to fixed beds before and after health reform plan.

**Table 1.** The first hypothesis test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
<th>Mean difference</th>
<th>Standard error</th>
<th>At significant level of 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border-bottom</td>
<td>0.108</td>
<td>0.395</td>
<td>0.00</td>
<td>0.252</td>
<td>0.072</td>
<td>230</td>
<td>3.252</td>
<td>3.462</td>
</tr>
<tr>
<td>Top-bottom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

330
The results of the first hypothesis are presented in Table 1. As you can see, regarding to the t-test, the null hypothesis was less than 5% (0 < 5%) rejected the equality of mean with 3 in the significant level of 5% due to the less measure of significant level. Hence, there was a significant difference between 3 and mean. Also, because the difference between the mean and the number 3 is positive, so, the average of responses is more than mediocrity. Therefore, it can be concluded that there was a significant difference between the ratio of active to fixed beds before and after the health reform plan.

**The second hypothesis test:** there is a significant difference between the ratio of bed function before and after health reform plan.

### Table 2. The second hypothesis test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
<th>Mean difference</th>
<th>Standard error</th>
<th>At significant level of 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>The difference between the rotating bed before and after health reform plan.</td>
<td>230</td>
<td>3.526</td>
<td>6.909</td>
<td>229</td>
<td>0.00</td>
<td>0.526</td>
<td>0.076</td>
<td>0.376 0.676</td>
</tr>
</tbody>
</table>

The results of the second hypothesis test are presented in Table 2. As you can see, regarding to the t-test, the null hypothesis was less than 5% (0 < 5%) rejected the equality of mean with the number 3 in the significant level of 5% due to the less measure of significant level. Hence, there was a significant difference between the number 3 and mean. Also, because the difference between the mean and the number 3 is positive, so, the average of responses is more than mediocrity. Therefore, it can be concluded that there was a significant difference between the ratio of active to fixed beds before and after the health reform plan.

**The third hypothesis test:** there is a significant difference between the rotating bed before and after health reform plan.

### Table 3. The third hypothesis test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
<th>Mean difference</th>
<th>Standard error</th>
<th>At significant level of 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>The difference between the rotating bed before and after health reform plan.</td>
<td>230</td>
<td>3.308</td>
<td>4.351</td>
<td>229</td>
<td>0.00</td>
<td>0.308</td>
<td>0.070</td>
<td>0.168 0.448</td>
</tr>
</tbody>
</table>
The results of the second hypothesis test are presented in Table 3. As you can see, regarding to the t-test, the null hypothesis was less than 5% (0 <5%) therefore was rejected the equality of mean with the number 3 in the significant level of 5% due to the less measure of significant level. Hence, there was a significant difference between the number 3 and mean. Also, because the difference between the mean and the number 3 was positive, so, the average of responses was more than mediocrity. Therefore, it can be concluded that there was a significant difference between the ratio of active to fixed beds bed before and after the health reform plan. The third hypothesis test: there is a significant difference between the active and fixed bed before and after health reform plan.

The fourth hypothesis test: there is a significant difference between the length of patient’s stay (days) before and after health reform plan.

### Table 4. The fourth hypothesis test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
<th>Mean difference</th>
<th>Standard error</th>
<th>At significant level of 95%</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Border-bottom</td>
</tr>
<tr>
<td>The difference between the average length of patient’s stay (days) before and after the health reform plan</td>
<td>230</td>
<td>3.347</td>
<td>5.947</td>
<td>229</td>
<td>0.00</td>
<td>0.347</td>
<td>0.058</td>
<td>0.232</td>
</tr>
</tbody>
</table>

As you can see, regarding to the T-test, the null hypothesis was less than 5% (0 <5 %) so, was rejected the equality of mean with the number 3 in the significant level of 5% due to the less measure of significant level. Hence, there was a significant difference between the number 3 and mean. Also, because the difference between the mean and the number 3 was positive, so, the average of responses is more than mediocrity. Therefore, it can be concluded that there was a significant difference between the before and after the health reform plan. The third hypothesis test: there is a significant difference between the length of patient’s stay (days) before and after the health reform plan.

The fifth hypothesis test: there is a significant difference between the ratio of surgery in the operating room before and after health reform plan.

### Table 5. The fifth hypothesis test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
<th>Mean difference</th>
<th>Standard error</th>
<th>At significant level of 95%</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Border-bottom</td>
</tr>
<tr>
<td>The difference between the proportion of surgical procedures in the operating room before and after the health reform plan</td>
<td>230</td>
<td>3.417</td>
<td>5.513</td>
<td>229</td>
<td>0.00</td>
<td>0.417</td>
<td>0.075</td>
<td>0.268</td>
</tr>
</tbody>
</table>

The results of the fifth hypothesis test are presented in Table 5. As you can see, regarding to the t-test, the null hypothesis was less than 5% (0 <5 %) therefore, was rejected the equality of mean with the number 3 in the significant level of 5% due to the less measure of significant level. Hence, there was a significant difference between
the number 3 and mean. Also, because the difference between the mean and the number 3 was positive, so, the average of responses was more than mediocrity. Therefore, it can be concluded that there was a significant difference between the ratio of surgery in the operating room before and after the health reform plan.

**Conclusion**

In this study, data was selected from 230 individuals and were tested using SPSS statistical software version 22 with the significant level of 95%, generally the following results were obtained:

The results of this research explained the research of Ameriun and Delavari (2008), Rafeai et al (2008) considering the hierarchical model as a random component value of the BOR's data very well. It was consistent with Joneydi-jafari et al (2010), Gholamhoseyini et al (2010) on evaluating the ongoing function of the statistic units of hospital based on standards approved by the Ministry of Health and Medical Education to use statistics health management and delivery of health services in all military hospitals and also was not consistence with the research results of with the results of Erhan et al (2004) which studied the maternity ward compared to the surgical wards and nerves and revealed its bad function.

**Suggestions**

- Hospital management methods such as AHP need improving and evolving to rank hospital activities.
- Applying of AHP (AHP) to compare health and serving the hospital before and after implementation of the health reform plan by future researchers.
- Reviewing the management practices to improve the rights promotion of services recipients before and after the program to improve hospital
- Checking the amount of attention to the patient safety and accreditation

**References**


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