THE EVALUATION OF THE POSITION OF HEALTH AND SAFETY SYSTEM IN MULTI-LEVEL STRATEGIC MANAGEMENT OF STAFFS IN SHIRAZ UNIVERSITY OF MEDICAL SCIENCE

Somayeh Hessam1, Afsaneh Simi2, Abbas Yazdanpanah2

1Department of Health Services Administration, South Tehran branch, Islamic Azad University, Tehran, Iran.
2Department of Healthcare Management, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran.

ABSTRACT

Objectives: The present research aimed to evaluate the position of health and safety system in multi-level strategic management of Shiraz University of medical science. This is a co relational-surveying study. Field information was collected via questionnaire. Statistical population consists of all staffs of Shiraz University of medical science (900 individuals).

Methods: To determine the sample size, Morgan Table was used so 269 individuals were selected by simple random method. To prevent drop out, 320 questionnaires were distributed and collected. As a result, 308 questionnaires were completed. Random sampling was used in the research. The instrument includes researcher-conducted questionnaire for evaluation of position of health and safety in multilevel management. The questionnaire's validity and reliability were confirmed. To analyze data, Kolmogorov-Smirnov, Pearson correlation coefficient, one sample T, independent T as well as variance analysis tests and SPSS version 20 were used.

Results: Results indicated that the safety system has an improper position in multilevel management of staffs in Shiraz University of medical science in addition; health system has a good position in multilevel management of staffs in Shiraz University of medical science.

Conclusion: It is suggested that subjects’ related to multilevel management of staffs is considered.

Keywords: Health information management, family physician, treatment process.

INTRODUCTION

All organizations wish to reach correct job performance via control of risks of occupational health and safety which is compatible with macro goals and policy of occupational safety and health1. This is done in form of strict rules, development of economic policies and other actions in direction of proper activities of occupational safety and health as well as the increasing attention of stakeholders to occupational safety and health2-5. It is necessary to deal with staffs' health, welfare and comfort as well as to apply strategies for adaptation with psychological and physical conditions. High level of staffs' health is effective on the growth and development of organizations and society. The role of management, as a main factor in promotion of health and welfare of the organization, is very important leading to organizational growth6,5,10. Strategic management has been considered as one of important factors in successful organizations. The process of strategic management consists of three stages: formulation, implementation and evaluation of strategy. The practices done in these stages are conducted in three levels of organizational hierarchy management including the whole company, current strategic unit and task level11. Multilevel planning is used to model non-centralized decision. Therefore, there are either several decision makers in several levels or a hierarchical organization and their decisions have reciprocal influence. In such planning, decision makers in different levels have related variables and targets12-14. ILO organizations are responsible for protection of workers against occupational diseases and events. Occupational diseases and events are due to ignorance of workers' health and safety. The main goal of ILO is to increase the chance of women and men in reaching

Article Info: Received 29 September 2017; Revised 10 February; Accepted 25 February, Available online 15 March 2018

Cite this article:


DOI: http://doi.org/10.22270/ujpr.v3i1.R3

Address for Correspondence:

Somayeh Hessam, Department of Health Services Administration, South Tehran branch, Islamic Azad University, Tehran, Iran. E-mail: somayeh59@yahoo.com
qualified work under conditions of freedom, justice, safety and respect to human rights. Such conditions were summarized under the term "qualified labor". Qualified labor is safe which is a positive and effective factor on economic growth and manufacture of products. According to statistics of international labor organization, 2.1 million people will die annually due to occupational diseases and events throughout the world. 250 million occupational events as well as 160 million occupational diseases are occurred in different regions of the world. About 4 percent of national gross production is due to such diseases and events. Technological advances and competitive pressures cause rapid changes in work condition manufacture process and company structure. In this way, rules and regulations are not sufficient to resist against risks and an efficient management is required. Technological advances and strong competition between industries caused rapid changes in managerial condition, process and system. However, it is necessary but not sufficient to legislate rules for such changes as well as new risks. Organizations should solve problems occurring continuously for health and safety. They should find good solutions by dynamic managerial strategy. Safety and health require an active management system because they cannot be supplied either collectively or individually or by compulsory regulations. The evidences for importance of safety management system in the high level of industrial safety and health suggest that an organizational cause has been involved in 46% of occupational events that lead to disability. According to studies, 50% of occupational events are due to lack of an efficient safety management system. A professional health and safety management system as well as environmental management should be created and kept by top managers and supervisors of the organization. First, top management should try hard to grow and strengthen environmental management and professional health and safety management system. It is necessary to solve such problem and reach achievements. One of such solutions is to increase healthy factors affecting the health and satisfaction of human source as well as to settle contradictory environmental factors through establishment of professional health and safety management and environmental management systems. The present research aims to evaluate the position of health and safety system in management.

**METHODS**

This is a co-relation-surveying research. Statistical population includes all staffs in Shiraz University of medical science (900 individuals). To specify sample size, Morgan Table was used, thus 269 individuals were chosen by simply random sampling. To prevent drop out, 320 questionnaires were distributed and collected. As a result, 308 questionnaires were collected. Two researcher-conducted questionnaires of the position of safety system as well as the position of health system were used. Face validity of the questionnaire was evaluated by 5 professors and their opinions were applied. In addition, the reliability of the questionnaire of safety system position was 0.90 as well as health system position was 0.83 using Cronbach alpha. Results were expressed by descriptive and inferential statistics as well as SPSS.

**RESULTS**

To evaluate normality of data distribution, Kolmogorov-Smirnov test was used as shown in Table 1. As shown in the Table 1, all components are normal due to significance level of 0.05, thus parametric statistic is allowed. To evaluate research hypotheses, one sample T test was used as shown in Table 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Z</th>
<th>Sig. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety system position</td>
<td>4.127</td>
<td>0.001</td>
</tr>
<tr>
<td>Health system position</td>
<td>1.119</td>
<td>0.120</td>
</tr>
</tbody>
</table>

As seen in the Table 2, mean of health system position in multilevel management of staffs in Shiraz University of medical science is 3.67. Concerning T= -9.807 and sig. level= 0.001, it can be concluded that health system in multilevel management of staffs in Shiraz University of medical science has a proper position.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard</th>
<th>Mean</th>
<th>T</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health system position</td>
<td>3.67</td>
<td>9.807</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>Safety system position</td>
<td>2.27</td>
<td>-8.874</td>
<td>0.001</td>
<td></td>
</tr>
</tbody>
</table>

In addition, mean of health system position in multilevel management is 2.27. Concerning T= 8.874 and Sig. level=0.001, it can be concluded that safety system in multilevel management does not have a proper position. There is a significant difference among views of individuals with different genders in terms of safety system and health system positions in multilevel management of staffs in Shiraz University of medical science.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Groups</th>
<th>Mean</th>
<th>T</th>
<th>Sig. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety system position</td>
<td>Men</td>
<td>2.12</td>
<td>8.019</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>2.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health system position</td>
<td>Men</td>
<td>3.24</td>
<td>7.453</td>
<td>0.001</td>
</tr>
</tbody>
</table>

T test was used to evaluate hypotheses as shown in Table 3. According to Table 3, there is a significant difference between views of men and women in terms of health and safety system position in multilevel management. Results also showed that women evaluated high level of health and safety system in multilevel management due to their high means. There is a significant difference among individual's views with different educations on safety system position in multilevel management.
Results were shown in Table 4. It is noteworthy that variances were homogeneous in all groups. As shown in the Table 4, there is a significant difference among individuals’ views with different educations on safety system position in multilevel management (Sig. level=0.015, F=4.203)\(^{26,27}\).

### Table 4: Results of variance analysis test

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sum of squares</th>
<th>Freedom degree</th>
<th>Root mean squares</th>
<th>F</th>
<th>Sig. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-group</td>
<td>4.415</td>
<td>2</td>
<td>2.208</td>
<td>4.203</td>
<td>0.015</td>
</tr>
<tr>
<td>Intra-group</td>
<td>293.079</td>
<td>306</td>
<td>0.525</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>297.494</td>
<td>308</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Schaffe test was used to determine differences as shown in Table 5. According to results, there is a significant difference between views of individuals with diploma and lower degrees and those with M.A and higher degrees.

### Table 5: Results of Schaffe test

<table>
<thead>
<tr>
<th>Groups</th>
<th>Diploma and lower degrees</th>
<th>Associate degree and B.A</th>
<th>M.A and higher degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma and lower</td>
<td>0.290</td>
<td>0.016</td>
<td></td>
</tr>
<tr>
<td>Associate degree</td>
<td>0.365</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.A and higher degrees</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean opinion of each group on safety system position in multilevel management has been shown in Table 6. There is a significant difference among views of people with different educations on health system position in multilevel management of staffs of Shiraz University of medical science\(^{38,29}\).

### Table 6: Descriptive statistic of safety system position in multilevel management from views of groups with different educations

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.A and higher degrees</td>
<td>3.01</td>
<td>0.743</td>
</tr>
<tr>
<td>Associate degree</td>
<td>2.55</td>
<td>0.902</td>
</tr>
<tr>
<td>and B.A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma and lower</td>
<td>2.14</td>
<td>0.535</td>
</tr>
</tbody>
</table>

Variance analysis test was used to evaluate this hypothesis as shown in Table 7. It is noteworthy that variances were homogenous in all groups. According to results of the fourth hypothesis, there is a significant difference among views of individuals with different educations about health system position in multilevel management (Sig. level= 0.003, F= 6.034). To specify differences, Schaffe test was used as shown in Table 8.

### Table 7: Results of variance analysis test

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sum of squares</th>
<th>Freedom degree</th>
<th>Root mean squares</th>
<th>F</th>
<th>Sig. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-group</td>
<td>8.126</td>
<td>2</td>
<td>4.063</td>
<td>6.034</td>
<td>0.003</td>
</tr>
<tr>
<td>Intra-group</td>
<td>375.716</td>
<td>306</td>
<td>0.673</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>383.842</td>
<td>308</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in results of Schaffe test, there was a significant difference between views of individuals with diploma and lower degrees and those with M.A and higher degrees. Mean views of each group on health system position in multilevel management have been shown in Table 9.

### Table 8: Results of Schaffe test

<table>
<thead>
<tr>
<th>Groups</th>
<th>Diploma and lower</th>
<th>Associate degree and B.A</th>
<th>M.A and higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma and lower</td>
<td>0.358</td>
<td>0.007*</td>
<td></td>
</tr>
<tr>
<td>Associate degree</td>
<td></td>
<td>0.060</td>
<td></td>
</tr>
<tr>
<td>and B.A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.A and higher degrees</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 9: Descriptive statistic of health system position in multilevel management from different educational groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.A and higher degrees</td>
<td>3.88</td>
<td>0.780</td>
</tr>
<tr>
<td>Associate degree</td>
<td>3.40</td>
<td>0.258</td>
</tr>
<tr>
<td>and B.A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma and lower</td>
<td>2.98</td>
<td>0.123</td>
</tr>
</tbody>
</table>

### DISCUSSION AND CONCLUSION

The present research aimed to evaluate the position of health and safety system in multilevel strategic management in Shiraz University of medical science. This is an applied research as well as it is a correlational-surveying research. Field information was collected by the questionnaire. Statistical population includes all staffs of Shiraz University of medical science (900). To specify sample size, Morgan Table was used to choose 269 samples via simple random method. To prevent drop out, 320 questionnaires were distributed and collected. As a result, 308 questionnaires were collected. Random sampling was used in present research. The instrument used in the research was the researcher-conducted questionnaire of health and safety system position in multilevel management. The questionnaire’s validity and reliability were evaluated and confirmed. Kolmogorov-Smirnov test, Pearson correlation coefficient, one sample T test, independent T test, variance analysis test as well as SPSS 20 were used to analyze data. Results indicated that mean safety system position in multilevel management of staffs of Shiraz University of medical science is 2.27. Regarding T= - 8.874 and Sig. level= 0.001, it can be concluded that safety system in multilevel management of staffs of Shiraz University of medical science did not have a proper position. Ismail et al., found in his research that safety system position was appropriate\(^{32}\). Therefore, the results of the first hypothesis in present research are not in agreement with their results. It seems that different organizations used in present research and in the research of Ismail et al., caused such disagreement. In addition\(^{32}\), Hu et al., found in his research that safety system has not had a proper position in industries. In this way, results of present research are in agreement.
with results of Hu31. To explore this hypothesis, it can be said that there is no proper safety in medical science at Shiraz University because this organization has ignored the standards of safety. It seems that health issues have influence on inappropriate position of safety. In addition, results of the present research indicated that mean health system position in multilevel management of staffs of Shiraz University of medical science was 3.67. Concerning T= - 9.807 and Sig. level= 0.001, it can be said that health system in multilevel management of staffs of Shiraz University of medical science has a proper position. Pinto et al., found in his research that health position was proper in industries34. Ismail et al., evaluated factors affecting health and safety system32. They came up with the conclusion that appropriate planning and policy led to establishment of health and safety system, thus better application and effectiveness were resulted. Farshad et al., evaluated the role of HSE system in improvement of health, safety and environmental performances of organizations11. They concluded that health and safety indicators have been improved although the number of staffs, projects and work hours has increased11. Therefore, the results of the second hypothesis in present research are in agreement with results of Pinto et al.,34, Ismail et al.,32 and Farshad et al.,11. To explore this hypothesis, it can be said that skillful human sources in field of health as well as top managers’ attention to health position caused proper position of health system in multilevel management of Shiraz University of medical science. The results of present research indicated that there was a significant difference between views of women and men on health and safety system position in multilevel management. Furthermore, results showed that women evaluated high level of health and safety system in multilevel management due to their high means. Choudhry et al., noticed in their research that safety system was more important for men than women39. Therefore, results of the present research are not in agreement with their results. It seems that different organizations used in present research and that of Choudhry et al., caused such disagreement39. Tom et al., found that women evaluated more appropriately the position of safety and health system37. Therefore, the results of the second hypothesis in present research are in agreement with those of Tome et al. Results also showed that there was a significant difference among views of individuals with different educations on safety system position in multi-level management (F=4.203, Sig. level=0.015). Results indicated that there was a significant difference between views of individuals with diploma and lower degrees and individuals with M.A or higher degrees. Ismail et al., found that individuals with higher education evaluated more positively safety system1. Arjomand et al., found in their research that safety in work place of individuals with lower educations was less important7. The results of the fourth hypothesis in this research are in agreement with those of Ismail et al.,32 and Arjomand et al.,7. To explore this hypothesis, it can be said that individuals with higher education evaluate properly the position of safety in multilevel management of Shiraz University of medical science because they have better understanding from safety and its position. Results of present research showed that there was a significant difference between views of individuals with different educations on health system position in multilevel management (F=6.034, Sig. level=0.003). Results also indicated that there was a significant difference between views of individuals with diploma and lower degrees and those with M.A and higher degrees. Ismail et al., found in his research that individuals with higher education view health system in a higher position32. It can be expected that results of the fifth hypothesis in present research are consistent with those of Ismail et al.32 To explore this hypothesis, it can be said that individuals with higher education pay more attention to health showing their sensitivity to healthy issues. Therefore, individuals with higher education evaluate properly health system position in multilevel management of Shiraz University of medical science due their sensitivity to healthy issues. Results showed that safety system did not have a good position in multilevel management of staffs of Shiraz University of medical science whereas health position had a proper position multilevel management of staffs of Shiraz University of medical science34,35,36. Results revealed that women evaluated high level of safety and health system in multilevel management due to their high means. According to results, there was a significant difference between views of individuals with diploma and lower degrees and those with M.A and higher education about safety system position. Results showed that there was a significant difference between views of individuals with diploma and lower degrees and those with M.A and higher degrees about health system position38.

AUTHOR’S CONTRIBUTION
The manuscript was carried out, written, and approved in collaboration with all authors.

CONFLICT OF INTEREST
No conflict of interest associated with this work.

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