cjhr.gums.ac.ir
Caspian J Health Res. 2018;3(2):53-57 doi: 10.29252/cjhr.3.2.53

Caspian Journal of Health Research

Original Article

Strategic Thinking Among Directors of the Ministry of Health and Medical Education

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ABSTRACT

Background: Organizational directors should change their way of thinking to keep up with the increasing changes and take measures to achieve organizational goals. When organizations are faced with new problems, old solutions are futile and no longer effective. Henceforth, strategic thinking skill is increasingly essential for different levels of directors. The present study aimed to investigate the amount of strategic thinking at different levels of (directors of the Ministry of Health and Medical Education.

Methods: The present descriptive cross-sectional study was conducted in 2017. The study population consisted of all directors of the Ministry of Health and Medical Education, including Director General, Advisors to the Minister, Advisors to Deputies, and Administrative Deputies, who entered the study by census. Data were collected using the pre-validated Strategic Thinking Scale based on Liedtka model, and analyzed in SPSS version 20.

Results: The mean strategic thinking score was 68/100 for different levels of directors, which is higher than average. Among dimensions of strategic thinking, systems perspective and thinking in time had the highest and the lowest mean scores, respectively. No significant differences were observed in strategic thinking and its dimensions in terms of gender, age group, work experience, being a deputy, position or type of employment. Mean score of thinking in time was significantly different in terms of education, and those with Ph.D. and higher education scored had significantly higher score than the rest.

Conclusion: Given the higher-than-average scores obtained by directors in strategic thinking and its dimensions, it is recommended that measures such as holding educational workshops and use of strategic management and planning consultants be taken to strengthen dimensions of strategic thinking.

Keywords: Health Services, Strategic thinking, Systems perspective

Citation: Rabbanikha F, Moradi R, Monafi F, Kazemi Bollboloy A. Strategic thinking among Headquarter Directors of the Ministry of Health and Medical Education. Caspian J Health Res. 2018;3(2):53-7. doi: 10.29252/cjhr.3.2.53.

ARTICLE INFO

Received: November 24, 2017
Accepted: June 10, 2018
ePublished: June 27,2018

Introduction

Strategic thinking in organizations has been defined as a tool for generating value and creativity in employees and innovation in organization. According to Liedtka (1), the term "strategic thinking" has been so extensively used that it runs the risk of becoming meaningless (2). However, Mintzberg explicitly asserts in his studies that "strategic thinking is not merely a second name for whatever there is under strategic management umbrella, but a special way of thinking with totally distinctive features". Several attempts have been made to make the concept of strategic thinking meaningful, for example, Ohmae (3), Mintzberg (2), Stacey (4), Zabriskie and Huellmantel (5), Bates and Dillard (6), Raimond (7), Liedtka (1), Wilson (8), Heracleous (9), Turset (10), and Bowen (11) made much effort to further conceptualize strategic thinking and provide models to help understand the subject (12). According to research conducted to identify managerial skills needed by managers in Asian countries, strategic thinking was ranked by respondents the first or second skill needed to improve managers' performance. Mintzberg believes reinforcing strategic thinking leads to development of better strategies. He believes that managers with strategic thinking skill are able to encourage other employees to find creative solutions for organizational success. They view their organization the way it should be, and not the way it is. Thus, strategic thinking can be regarded as the precursor to future design of the organization. Strategic thinking competence is vital to staying competitive in the turbulent global environment (13). Hence, identifying challenges and planning to resolve them is particularly important.

Strategic thinking is one of the two essential skills for efficient leaders, but previous studies consider its absence among top-ranking leaders as one of the main problems in the performance of companies (14). Depending on how strategic thinking is dealt with, recent studies have provided various definitions for this subject, each focusing on its different aspects (15). However, there is not much consensus in the literature on what strategic thinking is (16). According to their perception of the subject, each expert in the field has provided his own definition. For instance, according to Mintzberg, strategic thinking is a process of mental synthesis, which generates a uniform perspective on business through creativity and intuition (17). Gary Hammel considers strategic thinking as artistic architecture of strategy based on creativity, discovery and understanding of business discontinuities (18). Abra Hammel regards strategic thinking as a way of finding competitive and value-creating alternatives for clients (15). As a general perception, strategic thinking can be said to be a divergent and pragmatic thinking, like dynamic thinking that is developed through ongoing interaction with the environment and creativity, and in fact, it is a continuous process of removing ambiguities and giving meaning to a complex environment. A manager wishing to be effective and useful for the organization should improve their strategic thinking skills (19). Strategic thinking can be regarded as a method of solving organizational strategic problem, which combines rational and convergent approach with creative and divergent thinking process. With strategic thinking, complex problems are simplified without being trivialized, and the secret of its success is hope in the future, positive thinking, non-trivializing optimism, and relentless effort (20).

Given the many current challenges faced by organizations, strategic management processes are necessary for organizations such as hospitals more than ever before, and without them, many organizations will not be able to survive. Hence, organizations now focus on using different strategic thinking methods. In this respect, realization of productivity will be very difficult if not impossible in organizations with no strategic thinking or planning (21). Hospitals benefiting from strategic thinking parameters have a higher place compared to other hospitals. In a study, improving productivity and strategic management were proposed as the key management tool for success in a highly competitive environment (22), and although hospitals use up 50% to 80% of the total healthcare costs, their productivity is now being scrutinized more than ever before (23, 24). Health sector directors can facilitate the country's progress in this sector by increasing organizational productivity and achieving organizational goals (25). Although health systems have had a major role in improving lives and increasing life expectancy, there are huge gaps between their potential ability and current performance. The ministry of health is different from other social systems such as education or markets that provide clients with goods and services. One such a difference is that healthcare may incur huge costs. Therefore, protecting people in such a way that they are not forced to choose between bankruptcy and their health is vital. With good planning and management in this field and strategic thinking in all stages, the gaps between managers' ability and performance will decrease. Given the importance of the subject, the present study investigates the level of strategic thinking among directors of the Ministry of Health and Medical Education and proposes strategies for their improvement.

Methods

The present descriptive cross-sectional study was conducted in 2017. The study population consisted of all directors of the Ministry of Health and Medical Education, including Director General, Advisors to the Minister, Advisors to Deputies, and Administrative Deputies, who entered the study by census since the population was small. Data were collected using a demographic details form (gender, age, work experience, education, type of employment, being a deputy, and position) and strategic thinking questionnaire based on Liedtka model (26) in five domains of systems perspective, intent focused, hypothesis driven, intelligent opportunism, and thinking in time, with scoring based on Likert scale from very little = 1 to very much = 5 points. Scores of each dimension were converted into percentage. Content and face validity of this questionnaire were confirmed by an expert panel, and its reliability was confirmed in previous studies ($\alpha = 87.3$) (27). Data were analyzed in SPSS-22 using descriptive and inferential statistical tests. Normal distribution of data was assessed by Kolmogorov-Smirnov test, and the assumption of normality in all domains of strategic thinking was confirmed (P-value > 0.05). Next, independent t-test and one-way variance analysis (ANOVA) were used.

Results

Of the 55 questionnaires distributed, 41 were returned and analyzed (response rate = 74.5%). Of the respondents, 85.4% were men, 41.5% were older than 50 years, 58.5% had a work history of more than 20 years, 39% had Ph.D. and higher qualifications, 68.3% were in definite formal employment, 31.7% were from ministerial posts and 39% from administrative deputies. Demographic characteristics of participants are presented in Table 1.

Table 1. Participants' Demographic Characteristics

Variable	No. of persons (%)
Gender	
Male	35 (85.4)
Female	6 (14.6)
Age group (years)	
30-35	5 (2.4)
35-40	5 (12.2)
40-45	6 (14.6)
45-50	12 (29.3)
50 and older	17 (41.5)
Deputy	
Social	1 (2.4)
Management and resources development	6 (24.6)
Planning, coordination and parliament	3 (7.3)
matters	3 (7.3)
Nursing	5 (12.2)
Research	10 (24.4)
Health	13 (31.7)
Ministerial	0 (0)
Medical	0 (0)
Cultural and student	
Work experience (years)	
5-10	2 (4.9)
10-15	12 (29.3)
15-20	3 (7.3)
20 and higher	24 (58.5)
Education	
Bachelor's degree	4 (9.8)
Master's degree	15 (36.6)
General practitioner	6 (14.6)
Ph.D. and higher	16 (39)
Type of employment	
Definite formal	28 (68.3)
Trial formal	3 (7.3)
Contract	5 (12.2)
Other	5 (12.2)
Position	
Director general	13 (31.7)
Advisor to the minister	3 (7.3)
Advisor to deputy minister	9 (22)
Administrative deputy	16 (39)

Directors' mean score of strategic thinking was at a moderate level of 68.31 (10.54. Among dimensions of strategic thinking, systems perspective had the highest score and thinking in time the lowest, which suggests the dominance of strategic thinking among headquarter directors of the Ministry of Health and Medical Education. Mean and standard deviation of strategic thinking and its dimensions according to study variables are shown in Table 2.

The independent t-test showed no significant difference in directors' mean score of strategic thinking and its dimensions in terms of gender. Moreover, one-way variance analysis showed no significant differences in directors' mean scores of strategic thinking and its dimensions in terms of age, work experience, type of employment, or position. Among dimensions of strategic thinking, a significant difference was observed in hypothesis driven in terms of being a deputy, and this was higher in nursing directors compared to other deputies. A significant difference was also found in the dimension of thinking in time in terms of education (P-value < 0.05), and this was higher in people with general medicine education.

According to the above table, mean total score of strategic thinking of headquarter directors of the Ministry of Health and Medical Education was not significantly different in any of the study variables.

Discussion

Given the many challenges in organizational environment, strategic management processes are necessary for organizations now more than before, and without them, many organizations will not even survive. In Iran, very few studies have been conducted on the subject of strategic thinking of ministerial directors; therefore, there is still room for internalizing strategic thinking as a managerial necessity. As explained, the present study was conducted to investigate strategic thinking among headquarter directors of the Ministry of Health and Medical Education.

The results obtained showed the moderate mean score of strategic thinking among directors of different levels, and systems perspective as the dominant mode of thinking among directors of different levels. In a study by Kiaei et al (28), systems perspective scored the highest of all strategic thinking dimensions, which agrees with the present study. Because of the systematic nature of systems perspective in organizations, this mode of thinking appears to have been reinforced among directors. In a case-control study titled "Strategic thinking education: empirical evidence", Juan et al. concluded that between control and case groups, the group that had received strategic thinking education was more capable in strategic decision-making than the other group, and also found that strategic thinking is the cause of organizational success in a competitive environment (29). Parvizian et al. argued that improving productivity and strategic management are the management tool for success in a highly competitive environment (30).

The present study results showed no significant difference in directors' mean score of strategic thinking in terms of age, gender, being a deputy, work experience, education, type of employment, or position. The results obtained by Kiaei et al. showed that strategic thinking in directors of teaching hospitals in Shiraz was significantly different in terms of education, age, and management experience, which disagrees with the present study results. The disagreement appears to be due to the difference in the statistical population in two studies. In their study, Sibel Kargin concluded that strategic thinking had no significant relationship with age, work experience or education (31), which agrees with the present study results.

Table 2. Mean and Standard Deviation of Strategic Thinking and its Dimensions Among Directors According to Study Variables

Variable	Systems perspective	Intent focused	Hypothesis driven	Intelligent opportunism	Thinking in time	Total
Gender						
Male	71.61 (14.01)	71.42 (8.32)	67.04 (16.16)	65.30 (15.24)	64.00 (16.75)	68.40 (11.34)
Female	76.11 (4.43)	71.25 (7.73)	66.66 (11.92)	62.85 (7.45)	57.50 (16.04)	69.73 (3.79)
P-value	0.14	0.96	0.95	0.70	0.38	0.88
Age group (years)						
30-35	83.33 (00.00)	72.50 (00.00)	60.00 (00.00)	54.28 (00.00)	55.00 (00.00)	66.42 (00.00)
35-40	73.33 (7.45)	73.50 (7.41)	62.66 (15.34)	65.14 (11.67)	64.00 (14.31)	68.85 (7.46)
45-50	67.77 (8.07)	66.25 (8.02)	72.22 (9.81)	60.00 (6.25)	55.83 (11.58)	64.16 (4.36)
50 and older	72.94 (17.11)	73.38 (8.00)	66.27 (18.17)	67.89 (16.61)	67.35 (18.12)	70.29 (12.75)
P-value	0.84	0.41	0.86	0.74	0.62	0.81
Deputy						
Social	73.33 (00.00)	80.00 (00.00)	73.33 (00.00)	80.00 (00.00)	70.00 (00.00)	76.42 (00.00)
Management & RD	75.55 (13.77)	75.41 (7.31)	72.22 (9.81)	71.42 (15.64)	72.50 (15.08)	73.69 (10.58)
Planning and coordination	72.22 (28.34)	74.16 (7.63)	66.66 (11.54)	58.09 (21.82)	56.66 (18.92)	66.42 (16.22)
Nursing	81.11 (17.10)	71.66 (16.07)	77.77 (19.24)	76.19 (13.19)	65.00 (30.41)	74.52 (17.86)
Research	74.00 (7.22)	67.00 (4.80)	76.00 (7.60)	67.42 (12.38)	69.00 (10.83)	69.85 (5.96)
Health	67.33 (14.63)	69.25 (8.08)	52.66 (20.23)	59.71 (15.20)	55.50 (15.53)	62.71 (12.13)
Ministerial	71.79 (9.29)	71.53 (7.67)	69.23 (9.63)	62.85 (11.66)	62.69 (16.40)	67.91 (6.86)
P-value	0.80	0.55	0.03	0.36	0.52	0.41
Work experience (years)						
5-10	71.66 (16.49)	73.75 (1.76)	80.00 (00.00)	74.28 (16.16)	67.50 (10.60)	73.21 (8.58)
10-15	69.72 (11.76)	67.91 (8.24)	62.77 (16.44)	58.33 (13.64)	60.41 (16.43)	64.28 (10.24)
15-20	74.44 (8.38)	73.33 (11.54)	68.88 (3.84)	71.42 (7.55)	58.33 (12.58)	70.47 (7.43)
More than 20	73.33 (14.47)	72.70 (7.79)	67.77 (16.17)	66.66 (14.58)	64.58 (17.93)	69.64 (11.05)
P-value	0.88	0.37	0.50	0.22	0.83	0.45
Education						
Bachelor's degree	75.00 (7.93)	73.12 (8.50)	63.33 (13.87)	62.14 (6.33)	55.00 (14.71)	67.14 (5.62)
Master's degree	68.66 (17.40)	69.66 (9.20)	62.66 (16.29)	60.38 (17.30)	53.66 (15.52)	64.09 (13.15)
General practitioner	76.66 (6.32)	71.25 (8.47)	64.44 (13.10)	62.85 (9.89)	68.33 (6.05)	69.16 (6.16)
PhD and higher	73.33 (11.22)	72.65 (7.21)	72.71 (12.92)	70.71 (12.92)	17.87 (16.00)	72.23 (9.02)
P-value	0.57	0.75	0.27	0.22	0.008	0.19
Type of employment						
Definite formal	72.50 (14.36)	71.25 (8.85)	66.66 (17.68)	65.61 (14.39)	61.60 (17.90)	68.23 (11.52)
Trial formal	70.00 (5.77)	68.33 (2.88)	62.22 (13.87)	58.09 (9.18)	60.00 (13.22)	64.28 (5.15)
Contract	72.00 (8.36)	73.00 (7.78)	69.33 (7.60)	60.57 (14.19)	62.00 (11.51)	67.71 (7.13)
Other	72.66 (15.34)	72.50 (7.07)	69.33 (10.11)	69.71 (17.91)	74.00 (14.31)	71.71 (11.19)
P-value	0.99	0.87	0.92	0.63	0.48	0.81
Position						
Director general	69.48 (18.14)	71.92 (8.96)	66.15 (21.85)	64.39 (19.11)	59.61 (20.56)	67.14 (14.76)
Advisor to minister	78.88 (3.84)	74.16 (8.77)	68.88 (10.18)	72.38 (11.89)	76.66 (7.63)	74.52 (5.06)
Advisor to deputy	68.88 (11.18)	69.72 (6.42)	72.59 (8.46)	66.66 (11.24)	71.11 (11.93)	69.28 (7.37)
Admin deputy	75.20 (9.73)	71.40 (8.65)	64.16 (13.30)	63.03 (12.32)	58.75 (14.43)	67.54 (8.94)
P-value	0.44	0.86	0.63	0.75	0.12	0.73
Total	72.27 (13.11)	71.40 (8.10)	66.99 (15.48)	64.94 (14.32)	63.04 (16.61)	68.31 (10.54)

Abbreviation: RD, resource development. Values are mean (standard deviation)

The present study showed a significant difference in mean score of thinking in time in terms of education, and general practitioners score the highest in this domain. In contrast, the results obtained by Kiaei et al. showed no significant difference in mean score of thinking in time in terms of education, and the difference in the results appears to be due to different study population and setting (28).

The present study limitations included a small statistical population of headquarter directors of the Ministry of Health and Medical Education, unwillingness of some directors to take part, and lack of domestic research conducted on this subject.

Given the current competitive business environment, strategic thinking and strategic management are more important to organizations than they were before, and survival of organizations will depend on these capabilities.

Assessment and improvement of strategic thinking as an ongoing process that accelerates learning in organizational managers and boosts creativity are now the focus of every successful organization.

Conclusion

The results showed moderate levels of strategic thinking in directors and low levels in deputies. Organizations can improve their productivity with strategic perspective and strategic management methods, the skill to adapt to the environment and knowledge of the job, and by providing employees with a supportive organizational spirit. Increased productivity in the current competitive environment is an undeniable necessity for survival of every organization. Hence, it is recommended that measures be taken to include holding strategic management educational workshops, the use of consultants, and role-modeling successful organizations.

Acknowledgements
None.

Ethical consideration
The study protocol has been approved by the Institutional Review board of School of Public Health, Tehran University of Medical Sciences, Tehran, Iran.

Conflicts of interests
Authors declared no conflict of interest.

Funding
None.

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