

**ISSUES OF THE EFFECTIVENESS OF IMPLEMENTING “HEALTHY CITY” STRATEGIES (WITH THE EXAMPLE OF HEALTH SERVICES INDICATORS OF KERMANSHAH, IRAN)**

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### **Introduction**

The development of healthy cities is a global initiative prompted by the World Health Organization to improve the health of people who are influenced by urbanization. This helps promote standards of living and creates harmony between people, their surroundings and society. The health plan of every city is unique because each city has its own culture and diversity, its own political agendas and organizational capacity to respond to the global and local challenge. The approach involves facilitating collaboration among citizens and people from business, government and other sectors of society who recognized that their synergy could be used to maintain and improve the wellbeing of the entire community<sup>1</sup>.

A Healthy City program is concerned about the physical, social, economic and spiritual determinants of health and the essential elements necessary to improve health and the environment. The approach works on the principle that health and quality of life can be improved by modification of living conditions in the home, school, workplace, city - the places or settings where people live and work<sup>2</sup>.

One of the key features of the healthy cities approach is its recognition of the importance of interactions between individuals and the natural, built and social environment. By optimizing these interactions, both individual and community health can be improved<sup>3</sup>.

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<sup>1</sup> Kenneth J, Sherriff N, Hall C, Review of Brighton and Hove Healthy City Program Phase IV, University of Brighton, International Health Development Research Centre, 2008, p. 19.

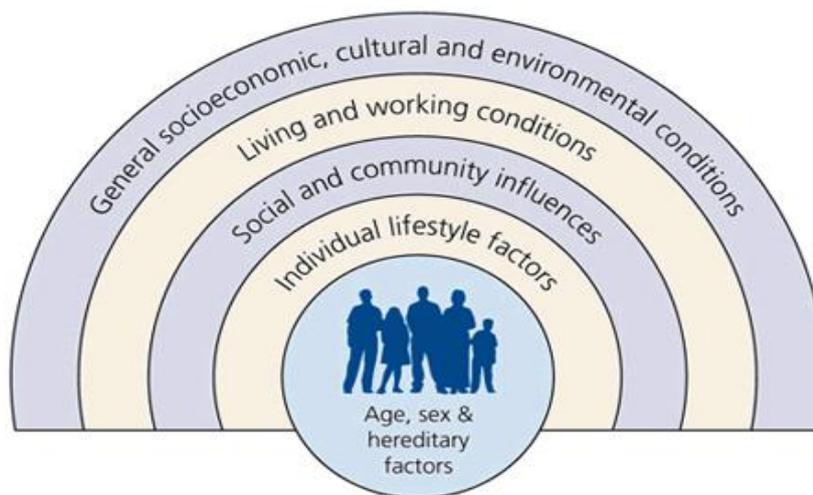
<sup>2</sup> WHO Regional Office for the Eastern Mediterranean, Training manual for the healthy city program, 2007, pp. 5-36.

<sup>3</sup> Sholom Glouberman, Phillippa Campsie, Michael Gemar and Glen Miller, A Toolbox for Improving Health in Cities: A Discussion Paper, February 2003, pp. 8-9.

According to WHO definition, health promotion is a process of offering, both to individuals and communities, the possibility of having greater control of health factors to improve their health. The Ottawa Charter for Health Promotion, which was adopted in 1986, describes the five elements of its strategic framework as building healthy public policy, creating supportive environments, strengthening community actions, developing personal skills and reorientating health services.

Health promotion is the aggregate of all purposeful activities designed to improve personal and public health through a combination of strategies, including health education and awareness, environmental modification, healthy lifestyles and behavioral changes, nutrition<sup>4</sup>.

Factors that influence people's health are known as determinants of health. These factors are often interactive and outside an individual's control. The below diagram summarizes the main determinants of health according to their spheres of influence, starting from those at the individual level and moving through to those in the wider society (Figure 1).



**Figure 1.** The main determinants of health (A Social Model of Health)<sup>5</sup>

<sup>4</sup> WHO Regional Office for the Eastern Mediterranean, Training manual for the healthy city program, 2007, pp. 5-36.

<sup>5</sup> Whitehead M. & Dahlgren G. What can we do about inequalities in health? Lancet, 1991, 338: 1059-1063

### **The Concept of Healthy City**

The concept of Healthy City was introduced by the World Health Organization and aims promote comprehensive local strategies for health and sustainable development, and ultimately, to enhance the physical, mental, social, and environmental health and wellbeing of the people living and working in cities.

The HC project was developed initially in the WHO European Region in 1987 as a means of implementing the Ottawa Charter at local city and municipality level. Healthy City approaches have been gradually extended over different countries of the world including African region, European region, regions of America, Southeast Asia region and Western pacific region. A particularly strong emphasis is given in this approach to equity, social justice, participatory governance and solidarity, intersectoral collaboration and action to address the broad determinants of health. The HC concept is dynamic. Its shape and content has been influenced over time by a wide range of factors including new global strategies and WHO regional and inter-regional priorities; changing socio-political, demographic and organizational contexts, lessons learnt from past experience, and advances in the evidence base relevant to interventions that address the determinants of health.

In December 1991 with holding the “Healthy City” symposium in Tehran, the Healthy City concept was introduced to the Islamic Republic of Iran. The primary operational procedure of this project as a model project was started in “Sizdah-e Aban” area in the southern part of Tehran. In the year 1996 the yearly motto of WHO “Healthy City for Better Life” was welcomed with great interest. At the same time, in April 15, 1996 the Council of Ministers announced the establishment of the “National Coordination Council of Healthy Cities Project” including nine ministers and four head of organizations to enhance intersectoral collaboration in the Healthy City Project<sup>6</sup>.

The present paper tends to propose a strategic plan of Healthy City on the basis of Health Services Indicators for Kermanshah, Iran, using ideas, experiences and practical suggestions of urban managers, different specialists and people's representatives. It also attempts to introduce the most important health services indicators of Kermanshah and specify the strengths, weaknesses, threats, and opportunities of this city regarding health services indicators.

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<sup>6</sup> Parhizkar A, Farhady R, AN EVALUATION OF HEALTHY CITY PROJECT AND PRESENTATION OF OPTIMUM PATTERN (Case Study: REY CITY), Tarbiat Modarres University, 2007, pp.23-24..

Lipp and Premila<sup>7</sup> (2005) presented an overview of a review of indicators of inequality within the city health profiles, focusing on health status, well-being, services, economic conditions and the environment within cities. The review identified 500 indicators of inequality from 35 cities in the WHO European Healthy Cities Network across 16 countries. Of the indicators, 33% focused on health status, services 14%, economic conditions 13%, lifestyle 12%, demographics 9%, and environment 6%. Education, crime, traffic and housing accounted for 3% or less respectively.

According to Trevor Hancock<sup>8</sup> (2009) there is no universal healthy community model that can or should be applied to all communities. An important issue is that this approach must be based on the community's strengths and assets, not its weaknesses and dysfunctions.

Khakpour and Amiri<sup>9</sup> (2010) have emphasized the effective role of an 'electronic city program' in implementing the objectives of 'healthy cities'.

### **Methodology**

The participants included thirty-six managers in charge of health-related organizations, twenty-three city representatives, and thirty-six faculty members. The data was collected through a validated Likert-scale questionnaire (which entailed 9 health services indicators), semi-structured interviews, and focus-group discussions. Using Cronbach's alpha, Delphi method, and expert judgments, the reliability and validity of the questionnaire were evaluated and ensured. To analyze the obtained data, descriptive statistics (demographic characteristics such as age and education) and inferential statistics (Friedman's test and SWOT) were applied. All the statistical analyses were performed using SPSS. As mentioned earlier, to look at the issue under question from different angles, some of the participants were selected to be interviewed. They included five city representatives, seventeen managers, and nineteen faculty members.

Descriptive statistics containing demographic characteristics of the participants (age and education) are presented in Table 1 and 2.

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<sup>7</sup> Lipp A, Webster P, Analysis of health profiles, Report on the Integrated Meetings of the WHO European Healthy Cities Network and the Network of the European National Healthy Cities Networks/ Report on a WHO Business and Technical Meeting, Bursa, Turkey, 21–23rd September 2005 ©World Health Organization 2006

<sup>8</sup> Hancock, T., Act Locally: Community-based population health promotion, Victoria BC. For The Senate Sub-Committee on Population Health, 2009, Appendix B: pp. 18-20

<sup>9</sup> Khakpour B, Amiri A, Electronic City, Steps towards Healthy City objectives, Second National Conference on Healthy Cities, Sabzevar, Iran (2010)

**Table 1.** Demographic Characteristics Based on Age

Age	Number of individuals	Percentage
30-39	21	26.25
40-49	37	46.25
50-59	20	25
Above 60	2	2.5
Total	80	100

**Table 2.** Demographic Characteristics Based on Education

Level	Number of individuals	Percentage
PhD	25	31.25
PhD students	2	2.5
MA or MSC	30	37.5
BA or BS	14	17.5
General practitioners	4	5
Specialist Practitioner	5	6.25
Total	80	100

### **Instruments and procedures**

**A validated Likert-scale questionnaire:** WHO healthy city questionnaire, European healthy cities questionnaire, and Sustainable Development Indicators questionnaire formed the basis of developing a context-sensitive version of the

questionnaire to be validly used to investigate urban health indicators in Kermanshah<sup>10</sup>. Based on the three available questionnaires, 74 Urban Health indicators were extracted<sup>11</sup>. After the questionnaire was constructed, it was delivered to the related fields experts to comment on its content and structure. Based on their comments, the indicators were prioritized. To pilot-test the questionnaire, it was distributed among 16 managers of health-related organizations and 22 faculty members. The data was entered into SPSS. To ensure the reliability of the questionnaire, Cronbach's alpha reliability coefficient was used and the results indicated that the questionnaire enjoyed a good level of reliability ( $\alpha=.80$ ). Finally, the validated questionnaire was distributed among the main participants to identify the importance of each indicator.

**Semi-structured interview:** To find out the strengths and weaknesses, opportunities and threats of each health indicator identified through the questionnaire, interviews were conducted with some participants based on their expertise, experience and availability.

### **Data analysis**

The data collected through the Liker-scale questionnaire were submitted to statistical analyses such as mean, standard deviation, and reliability analysis (i.e. Cronbach's alpha). The data collected from these interviews were content analyzed. SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis was also used to prepare an urban health strategy plan in Kermanshah metropolis. To propose an urban health strategy plan for Kermanshah, a comprehensive framework including the following four main stages was used:

1) Initial Stage: Kermanshah urban health mission is determined and its statement is prepared;

2) Input stage: the information required to formulate strategies are determined. This stage includes IFE (Internal Factors Evaluation) Matrix and EFE (External Factors Evaluation) Matrix;

3) Matching stage: after considering the information resulting from the previous stages, by taking into account the conditions of Kermanshah, the main internal factors

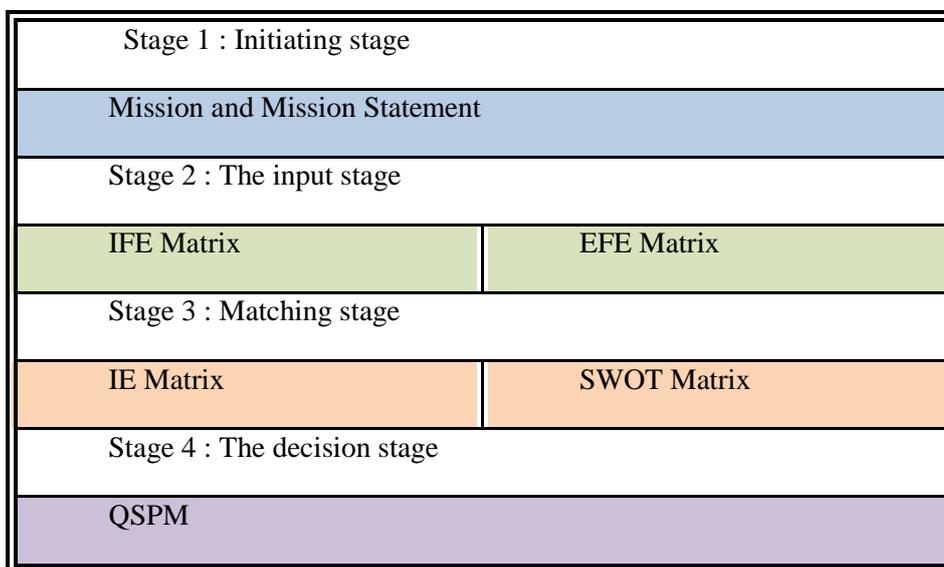
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<sup>10</sup> To confirm the validity of the questionnaire, Delphi method in addition to expert view was utilized.

<sup>11</sup> Urban Health indicators were categorized in five separated groups of health indicators (3), health services indicators (9), environmental indicators (19), socioeconomic indicators (32) and healthy lifestyle indicators (11). In this article 9 health services indicators are investigated.

(key strengths and weaknesses) and external factors (strategic opportunities and threats) are matched to establish a balance between them. The instruments utilized at this stage are SWOT matrix and IE (Internal External) matrix.

4) Decision Stage: In the final stage, by utilizing QSPM (Quantitative Strategic Programming Matrix) the various strategy options identified in the previous stage are evaluated based on objective unbiased methods. This matrix determines the relative attractiveness of various strategies and therefore provides an objective basis for a specific strategy.



**Figure 2.** General Framework for formulating strategy

### Research Findings

The Health Services indicators which were extracted based on the data obtained from the questionnaires are presented in Table 3.

Freidman test was used to analyze and rank these indicators in four states, during which general ranking of indicators (views of all samples), ranking by representatives, by managers and by faculty members were carried out respectfully.

**Table 3.** Health Services Indicators

№	Health services indicators
1	Educational program in the field of urban health
2	Percentage of children vaccinated
3	Ratio of health care employees to city residents
4	Ratio of nurses to city residents
5	Access to emergency services
6	Number of hospital beds per 10,000
7	The population covered by health insurance
8	Availability of primary health care for ethnic minorities
9	Number of health related questions examined by the city council every year

Significance coefficient of each state is presented in Table 4. Freidman test is significant in each four states based on the amount of Chi-square test and significance level which is less than critical significance level (0.05).

**Table 4.** Chi-Square Test Results for Health Services Indicators

	Case 1	Case 2	Case 3	Case 4
N	80	16	33	31
Chi-Square	424.35	213.34	365.12	345.76
Df	8	8	8	8
Sig.	0.00	0.00	0.00	0.00

**Table 5.** Priority Setting for Health Services Indicators

№	Health Services Indicator	Friedman 1	Friedman 2	Friedman 3	Friedman 4
1	Educational program in the field of urban health	7.93	7.12	7.45	7.99
2	Population covered by health insurance	7.48	6.67	7.11	7.45
3	Number of health related questions examined by city council every year	6.88	6.35	6.56	6.88
4	Access to emergency services	6.38	6.12	6.01	6.47
5	Ratio of nurses to the city residents	4.01	5.34	4.67	4.11
6	Number of hospital beds per 10,000	3.68	4.33	3.45	3.45
7	Ratio of primary healthcare forces to city residents	3.55	3.67	3.12	3.54
8	Availability of primary healthcare in the language of ethnic minorities	2.71	3.34	2.87	2.99
9	Percentage of children vaccinated	2.39	3.01	2.56	2.44

Based on the results, “educational program in the field of urban health”, “the population covered by health insurance”, “number of health related questions examined by the city council every year”, “access to emergency services”, “ratio of nurses to the city residents”, and “number of hospital beds per 10,000” are the most important indicators of health services group in Kermanshah respectively. (Table 5)

**The results of the SWOT Analysis**

**IFE Matrix of Health Services Indicators**

Expert workgroup were requested to assign internal factors of health indicators group a significance coefficient from 1 to 10 and a rank from 1 to 4 that after performing this phase the significance coefficient of each group was multiplied by its rank to obtain the score of each column. The total score was divided by 100 and it was observed that the weaknesses of health services indicators group dominate the strengths. This is due to relative low score (2.49) from 2.5.

**Table 6.**The Most Important Factors of IFE Matrix of Health Services Indicators

SW factors of health services indicators group	Significance Coefficient	Rank	Score
<b>Strengths (S)</b>			
Specialized human resources (1)	2	4	8
National standards and directives in this field (1)	2	2	4
Vaccination executive plans (2)	2	3	6
Public interest especially the youth and specialized work forces to participate in city’s health issues (3)	2	3	6
General efforts of authorities in resolving the problems of nurses and the possibility of finding solutions by their cooperation (4)	2	3	6
<b>Weaknesses (W)</b>			
Failure to use available education equipment and spaces optimally (1)	2	3	6
Theoretical based education programs and low quality of education because of traditional methods (1)	2	3	6
Failure to cover some of vaccinations completely (2)	3	4	12
Insufficient budget regarding job opportunities for physicians, nurses and other related work forces for family doctor plan (3 & 4)	2	4	8
Management problems (urban health education programs & emergency section) (1 & 5)	2	4	8

Considering the statistics from Table 6, the weaknesses of health services indicators group dominate the strengths.

**EFE Matrix of Health Services Indicators**

As with the previous case the significance coefficient of each group was multiplied by its rank to obtain the score of each column. The total score was divided by 100 and it was observed that opportunities of health services indicators group dominate their threats. This is due to relatively high score (2.74) from 2.5.

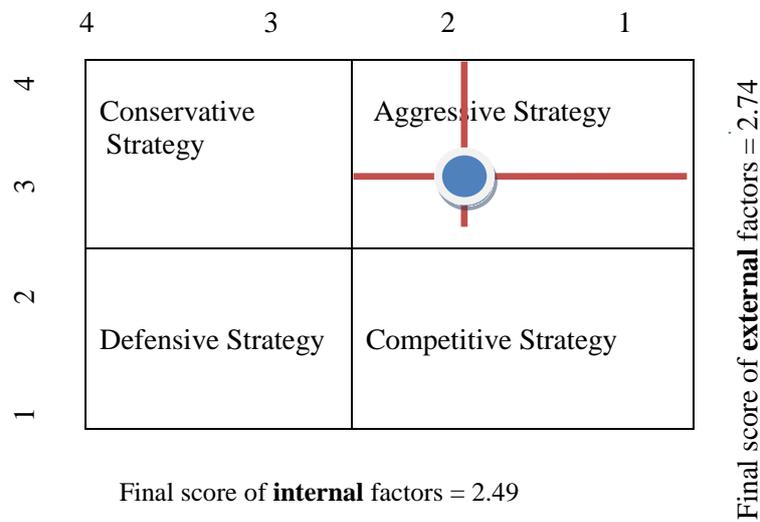
**Table 7.** The Most Important Factors of EFE Matrix of Health Services Indicators

<b>OT Factors of Health Services Indicators Group</b>	<b>Significance Coefficient</b>	<b>Rank</b>	<b>Score</b>
<b>Opportunities (O)</b>			
Support of education programs from authorities in ministry of health (1)	4	3	12
Available experts in medical education in the province (1)	5	3	15
Government support of vaccination program and production and distribution of required vaccines (2)	6	3	18
Specialized emergency medicine as one of specializations of universities of medical sciences (5)	7	2	14
<b>Threats (T)</b>			
Lack of an effective and active education system in public health education (1)	3	4	12
Relatively unfavorable economical situation in the region and cultural problems threatening health education (1)	2	4	8
Defibrillators unavailable in several emergency wards for CPR (5)	3	3	9
Unfair usage of hospital beds because of high costs and significant difference in income levels (6)	2	4	8
Several medical supplies are not covered by insurance (7)	4	3	12

Considering the statistics from Table 7, opportunities of health services indicators group dominate their threats.

**Matching Stage: IE Matrix**

For simultaneous analysis of internal and external factors, IE matrix is used to determine the status of indicators.



**Figure 5.** IE Matrix of Health Services Indicators Group

According to the matrix results there is externally more opportunity and internally more weakness; therefore conservative strategy (WO strategy) must be implemented to utilize the external opportunities in order to overcome the internal weaknesses.

**Table 8.** Strategies Priority Setting for Health Services Indicators Group

№	Strategy	Internal factors score	External factors score	Average Score
1	Development of Specialist Human Resources	2.41	1.83	4.24
2	Development and reconstruction of health services infrastructures in the province	2.36	1.82	4.18
3	Submission of health services macro projects to private sector	2.4	1.94	4.34
4	Attracting financial support from international institutions	2.57	1.85	4.42
5	Increasing public participation and promoting intersectoral cooperation	2.38	1.91	4.29

### Conclusion

The findings of the present study aimed to identify the most important health services indicators of urban health for Kermanshah, a western city of Iran indicate that

the indicators include “educational program in the field of urban health”, “the population covered by health insurance”, “number of health related questions examined by the city council every year”, “access to emergency services”, “ratio of nurses to the city residents”, “number of hospital beds per 10,000”, “ratio of primary healthcare forces to city residents”, “availability of primary healthcare in the language of ethnic minorities”, and “percentage of children vaccinated”.

It was also observed that the weaknesses of health services indicators group were relatively dominant over its strengths and the opportunities of health services indicators group dominated its threats. After matching Internal and external factors, it was found that there were externally more opportunities and internally more weaknesses; therefore, conservative strategies must be implemented to utilize the external opportunities in order to overcome the internal weaknesses. The following strategies are found to be appropriate for health services indicators group:

- Attracting financial support from international institutions
- Submission of health services macro projects to the private sector
- Increasing public participation and promoting intersectoral cooperation
- Development of Specialist Human Resources
- Development and reconstruction of health service infrastructures in the provinces

The urban health indicators suggested by the samples during the research can be considered when implementing urban health programs. An important such program can be “The Establishment of Regional Indicators on Urban Health in the City of Kermanshah”.

### **Payman DOOSTI**

#### **Issues of the effectiveness of implementing “Healthy city” strategies (with the example of health services indicators of Kermanshah, Iran)**

*Key words: health, health promotion, healthy community, urban health, healthy city, WHO*

This research is on developing a strategic plan of Healthy City on the basis of health services indicators of Kermanshah, Iran, using qualitative and quantitative data collection methods. It was also found that there were externally more opportunities and internally more weaknesses, which requires to develop a conservative strategy, including attracting financial support from international institutions.

## Փեյման ԴԻՄԹԻ

### “Առողջ քաղաքի” ռազմավարության իրականացման արդյունավետությունը

*Քանակի բառեր. առողջություն, առողջության խթանում, առողջ համայնք, ԱՅԿ*

Սույն հետազոտությունն ուղղված է նշակելու քաղաքային առողջության ռազմավարությունների ծրագիր, հիմնվելով Իրանի արևմուտքում գտնվող Քերմանշահ քաղաքի առողջապահական ծառայությունների ցուցիչների վրա և օգտագործելով տվյալների հավաքման որակական և քանակական մեթոդներ: Բացահայտվել են վերոնշյալ ցուցիչներն ըստ կարևորության. “քաղաքային առողջության ոլորտի կրթական ծրագիրը”, “առողջապահական ապահովագրություն ունեցող բնակչության քանակը”, “քաղաքային խորհրդի կողմից հարցերի քանակը” և այլն:

## Пейман ДУСТИ

### Основные проблемы осуществления стратегий "Здорового города"

*Ключевые слова: здоровье, стимулирование здоровья, здоровая община, ВОЗ*

Настоящее исследование имеет целью разработать программу стратегий здоровья, основываясь на показателях служб здравоохранения города Керманшах и с использованием качественных и количественных методов сбора данных. Было установлено, что вышеуказанные показатели по степени важности следующие: “образовательная программа сферы городского здравоохранения”, “численность населения, имеющего страхование здоровья”, “количество вопросов, связанные с здравоохранением, рассматриваемом ежегодно городским советом” и др.

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