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Evaluation of quality of urban life with emphasis on health; A case study in Mashhad city

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Abstract

Background: The quality of life of the citizens is one of the most important issues studied in different countries and used in the planning and monitoring of public policies. The present study measured and evaluated the indicators of quality of urban life among citizens of Mashhad city.

Methods: This analytical study was conducted on 375 citizens of various regions in Mashhad city. The random sampling method using population distribution and short-form questionnaires for data collection were applied. The validity of the questionnaires was verified by experts and the points given each question based on a 5-point Likert scale, and the Cronbach αcoefficient was used to measure the reliability of the questionnaire; the questionnaire rated 0.853%. To analyze the variables under study, SPSS and other statistical methods such as average answers and t test for independent variables were used.

Results: Findings of this research showed that the average health-sanitation dimension and environmental quality dimension are lower than 50% in Mashhad city. Sanitation and health, with a standard deviation of 5.838, are situated below the median level. The most common weakness is related to the dietary intake of protein. Environmental quality with a standard deviation of 5.857 is lower than the median level which is related to garbage separation and landfill sites. This result indicates that the quality of health and the environment in Mashhad is undesirable.

Conclusion: Citizens' satisfaction with quality of life index is lower than average in Mashhad city. Plans for improving the quality of life and developing services are highly necessary for increasing the quality of life.

Keywords: Sanitation, Personal satisfaction, Quality of life, Urban healt

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Introduction

A healthy city develops a combination of a healthy and dynamic community. Urbanization is considered one of the most important factors influencing citizens' individual and social health; therefore, the people's health is greatly affected by the social, economic, and environmental conditions of their city. Raising the quality of life in urban areas depends on the promotion of health (1,2). Quality of life is a vital issue in healthcare in the present era and one of the biggest sanitation goals in an individual's health improvement (3). Accepted as an axis of the development of a society, the promotion of health is the ultimate goal of all governments, in accordance with the objectives of the Ottawa Charter (4). Quality of life is one of the accepted frameworks for studying living conditions in different societies (5,6). The Netherlands National Institute for Public Health and the Environment claims that quality of life means the objective issues associated with non-material means of life and is determined by a person's perceptions of health, environment, job, family, etc (7). In fact, quality of life is the overall level of a person's satisfaction with life, which includes both mental and environmental dimensions (8). Quality of life is broadly conceptualized as an indicator for general welfare, social welfare, satisfaction, etc (9). A sustainable city provides for the development, prosperity, and promotion of environmental, economic and social quality for all; it also seeks an integrated development in the economic, social, and environmental aspects (10,11). In the first Health Promotion Conference, the Ottawa resolution was set up for health improvement and emphasized that having a healthier community is a responsibility not just

for the health sector (12). The second conference on the environment and health, held in Helsinki, focused for the first time on the importance of urban health and its priority over other issues (13). Finally, the idea of a healthy city comes with the aim of promoting health and the move towards decentralization (14).

Human population growth has led to uncontrolled and unplanned environmental changes and urbanization that has an influential effect on the quality of life (15). Hence, cities are faced with environmental effects such as water and air pollution, health services, wastes, and so on which exacerbate the environmental health risks for urban residents (16). Population density in cities and urban areas and disproportion between the growth of services and the urban infrastructure, particularly in developing countries, have converted urban areas to unhealthy and polluted places that have other various problems including sewage and waste disposal, water supply, etc (17). As a religious-metropolis in Iran (Imam Reza's Holy Shrine), Mashhad is located on the main highway of eastern Iran. Being the second largest metropolis and the main religious city of Iran, Mashhad has recently experienced high population growth. The population of Mashhad city was 3 300 000 people in 2016, and appealing tourist attractions in Mashhad city attract nearly 30 million pilgrims annually (18). Therefore, this city is dealing with population growth and its subsequent results, such as increased air pollution (92 unhealthy days in year 2016); increased noise pollution (up to 75 dB) (19); the excessive development of industries in Mashhad city; failure to complete the sewage disposal system, the implementation of 60% of the Ego project in downtown Mashhad; explosive pollution of the Kashaf Rood river due to urban wastewater flowing from treatment plants; and the existence of household waste in streams which causes environmental pollution and diseases (20). Evaluating the quality of life may accelerate the evaluation of policies, ranking places, and prioritizing social issues for urban managers in order to promote the quality of life for the citizens. The present paper has been devoted to this topic.

Methods
The descriptive-analytic research method was used in this study. A questionnaire and field surveys were used for data collection. The statistical population of the research was 375 citizens from various regions of Mashhad who were randomly chosen. The questionnaire's indices were designed based on a 5-point Likert scale (five choices) and in the two dimensions of health and hygiene (six items) and environmental quality index (seven items). To analyze the variables under study, SPSS (version 22) and other statistical methods such as average answers and t test for independent variables were used.

Results
While Mashhad city has been well-known since ancient times and is home to various historical places, it is also located in a strategic regional position; minor integrated planning has been done to revitalize and enhance the quality of urban spaces. So, the point comes to mind that the historic-cultural capabilities of Mashhad city have led to the sustainable development of Mashhad city.

To assess and evaluate the quality of life in Mashhad city, an environmental index and the relevant indices were applied. Out of 375 citizens who completed the questionnaires, 245 persons (65.3%) were male and 130 persons (34.6%) were female.

The quality of life is related to the city environment and its infrastructures. An essential part of the broad concept of quality of life is one's environmental quality, which contains fundamental concepts such as health and safety combined with aspects like attractiveness. As main elements of the environmental index, the 2 indexes of "Health and Hygiene" and "Environmental Quality" were reviewed in the present research.

Health and Hygiene Index
Hygiene is considered an important index for assessing quality of life. To investigate the index of health and hygiene in Mashhad city, the variables (Table 1) that were used included: hygiene in the living environment of citizens, insurance services, health and treatment centers (health home, clinic, and bathroom), food consumption, closeness to infected centers to drugs, etc.

Environmental Quality Index
In recent decades, the issue of environmental quality has become a specialized and public debate in communities. Moreover, the attention of the people has been attracted to the nature of life in the inefficient urban collections instead of material objectives. The obvious point is that all urban problems have an environmental quality component; in other words, most environmental problems will quickly become urban problems. This is why that to have sustainable environmental dimensions, quality of life, and healthy communities, more attention has been paid in recent years to the quality dimensions in urban and residential settings. As shown in Table 2, seven variables were used to review the status of the environmental quality index.

Discussion
The findings of the current research (Table 1) indicate that every effort to improve the quality of life in Mashhad city should initially focus on areas such as health and hygiene which have the highest impacts on quality of life. Also, the percentage of the results range from "medium" to "low" for the quality of health and hygiene. The responses of most of the citizens to the variables of "Overall satisfaction with health status," "Weekly intake of protein substances," and "Weekly consumption of vegetables and fruits," indicate an inappropriate status for these variables. The

Table 1. Percentage of responses related to health and hygiene

Row	Environmental quality index	Extremely high	High	Medium	Low	Extremely low
1	Weekly intake of protein substances in the diet	0	0	51.7	31.3	17
2	Weekly consumption of vegetables and fruits in the diet	6	17.8	46	28.2	2
3	health and treatment centers	10	25	35	20	10
4	closeness to infected centers to drugs	25	15	45	15	0
5	insurance services	12	33	43	10	2
6	Overall satisfaction of health status	2	22.2	56	17.8	2
7	Garbage separation	4	10.1	8	77.9	0

Table 2. Likert scale scores for questions about the environmental quality index

Row	Environmental quality index	Extremely high	High	Medium	Low	Extremely low
1	Sound pollution	7.7	30.2	46	14.1	2
2	Air pollution	7	15	45	33	0
3	Status of construction waste and unnecessary items	2	16.1	24.2	49.7	8
4	No placement of residential units in the vicinity of floods and rivers	2	20.1	57.7	20.2	0
5	Waste and pollution of water resources	8	15	35	25	17
6	Possessing a landfill site	2	8	24	51	15
7	Garbage separation	4	10.1	8	77.9	0

Table 3. *T* test results to understand the impact of variables related to health, hygiene, and environmental quality

Variable	Mean	SD	df	P value	T value
Health and hygiene	26.500	5.838	99	0.000	-5.944
Environmental quality	27.500	5.857	99	0.000	-5.963

results (Table 2) indicate a relatively inappropriate status for environmental quality variables from the citizens' points of view. As shown in Table 2, most percentages are in the range of medium to low. The responses to the variables of this index indicates not much change in these variables which arise from the citizens' opinions of the city. The responses of most citizens to a low range in the variables "landfill site" and "garbage separation" illustrate their inappropriate status. Moreover, hygienic methods are not used in collecting and disposing of sewage; in fact, outdated methods are still used.

The current study yielded results similar with those of previous studies. The results of one study about planning for the enhancement of quality of life in the Sarab neighborhood of Mashhad indicated that quality of life regarding sanitation and health at 72% was the most problematic index among others. The main issues raised were solving the problem of wastewater wells and collecting surface water and building a sewage network for the neighborhood (21).

Conclusion

The most appropriate way to measure the quality of urban life is to employ the simultaneous use of objective and subjective indicators. Ignoring any of these indicators will create problems for the city and its citizens in future planning. Therefore, the present study investigated the quality of life in Mashhad city based on these dimensions and social environment components (health and hygiene index, environmental quality index). Statistical methods

such as average responses and parametric statistical *t* test (Table 3) were used for independent variables. The health and hygiene index was lower than average with a standard deviation of 5.838. Most of the weakness associated with this component was related to the weekly intake of protein substances in the diet, weekly consumption of vegetables and fruits in the diet, and the low level of services and health centers. The environmental quality index, with a standard deviation of 5.857, was below the median level. The greatest weakness associated with this component was related to waste separation and landfill site, which requires fundamental planning.

Regarding the inadequate status of indicators of quality of the social environment in Mashhad city, the following suggestions are offered according to each indicator to improve the quality of life in Mashhad metropolis:

1. Prioritize the elimination of health problems in areas where the quality of life is inappropriate.

2. Increase the environmental health of the city by constructing a sewage collection network on the margins of Mashhad city.

3. Prevent the entry of any disturbing or polluting industries based on environmental laws and the optimal use of healthcare services to promote urban environmental health.

4. Plan and set goals to create specialist clinics for better service to local citizens.

5. Improve the collection, separation, and disposal of urban waste in the region.

6. Provide public health and hygiene training to promote

the level of public culture and identification of the inhabitants of the region.

Ethical issues

This manuscript is the original work of the authors. It has not been published elsewhere, nor is it under review in another journal. It has not been submitted for publication elsewhere.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

All authors participated in data acquisition, analysis, and interpretation. All authors critically reviewed, refined, and approved the manuscript.

References

1. Ghadami M, Motamed S. Investigate the quality of life in small cities, with an emphasis on the personal and social health dimension (case study: Nour city, Mazandran province). Geography and Environmental Planning Journal 2013; 24(1): 33-50. [In Persian].

2. Karkehabadi Z. Comparative comparison of urbanism quality according to enviromental index (case study: Semnan worn out and new urban textures). Quarterly of Geography 2017; 25(1): 33-48. [In Persian].

3. Salari Sardari F, Heudari Moghadam M, Sobhani N, Arefi A. Examination of the quality of life in urban areas (Case Study: Lamerd City). Journal of Urban Landscape Research 2015; 1(2): 53-91. [In Persian].

4. Shah Hosseini P, Tavakkoli H. The analysis of urban life quality indices case: Vardavard locality, in the 21st district of Tehran city. Environmental Based Territorial Planning (Amayesh) 2014; 7(24): 127-44. [In Persian].

5. Sheykh Islami A, Khoshbin N. Evaluation of quality of life, case study: first district of Behshahr City. J Geography and Urban Planning of the Zagros Landscape 2012; 4(14): 99 – 114. [In Persian].

6. Zangane Shahraki S, Galin Sharifdini J, Hassanzadeh D, Salary Moghadam Z. Evaluation of the quality of life in informal settlements, Tehran metropolitan (case study: Islamabad Salehabad). Human Geography Research Quarterly 2015; 67(1):177-96. doi: 10.22059/jhgr.2014.50599. [In Persian].

7. Epley DR, Menon M. A Method of Assembling Cross-sectional Indicators into a Community Quality of Life. Soc Indic Res 2008; 88(2): 281-96. doi: 10.1007/s11205-007-9190-7.

8. Rastegar M, Hatami H, Mirjafari R. Role of social capital in improving the quality of life and social justice in Mashhad, Iran. Sustainable Cities and Society 2017; 34: 109-13. doi: 10.1016/j.scs.2017.05.024.

9. Fayers PM, Machin D. Quality of Life: The Assessment, Analysis and Reporting of Patient-Reported Outcomes. 3rd ed. Wiley-Blackwell; 2016. p. 325-42. doi: 10.1002/9781118758991.

10. Saeedi Mofard S, Gordfaramarzi M. Study of Healthy City Indices with Sustainable Urban Development Approach. 8th Symposium on Advances in Science & Tecknology Commission-III: from Vernacular Architecture to Sustainable City (VASCITY); 2013 Dec 26; Khavaran Institute of Higher-education, Mashhad; 2013.

11. Yigitcanlar T, Kamruzzaman M. Planning, development and management of sustainable cities: a commentary from the guest editors. Sustainability 2015; 7(11): 14677-88. doi: 10.3390/su71114677.

12. Barton H, Grant M. Urban planning for healthy cities. A review of the progress of the European Healthy Cities Programme. J Urban Health 2013; 90(suppl 1): 129-41. doi: 10.1007/s11524-011-9649-3.

13. Lawrence RJ, Fudge C. Healthy Cities in a global and regional context. Health Promot Int 2009; 24 Suppl 1: i11-i8. doi: 10.1093/heapro/dap051.

14. Nieuwenhuijsen MJ, Khreis H. Car free cities: Pathway to healthy urban living. Environ Int 2016; 94: 251-62. doi: 10.1016/j.envint.2016.05.032.

15. Li F, Liu H, Huisingh D, Wang Y, Wang R. Shifting to healthier cities with improved urban ecological infrastructure: From the perspectives of planning, implementation, governance and engineering. J Clean Prod 2017; 163: S1-S11. doi: 10.1016/j.jclepro.2016.11.151.

16. Joseph Sirgy M, Phillips R, Rahtz D. Community Quality-of-Life Indicators: Best Cases VI. New York: Springer; 2013. doi: 10.1007/978-94-007-6501-6.

17. Saberifar R. The effect of satisfaction of the citizens of municipalities in urban environmental sustainability, case study: District 9 Mashhad. Biannual Journal of Urban Ecology Researches 2016; 7(14): 11-24. [In Persian].

18. Statistical yearbook of Organization of Transport and Traffic Deputy of Transportation and Traffic, Mashhad Municipality; 2016. p14.

19. Annual Report of Mashhad Environmental Monitoring Center. Department of Urban Services and Environment, Mashhad Municipality; 2016. p 53.

20. Statistical yearbook of Municipality of Mashhad. Mashhad: Deputy of Planning and Development, Mashhad Municipality; 2015. p. 42.

21. Ahmadian MA, Zafrenia S. Planning to improve the quality of city life in the Sarab neighborhood of Mashhad. Geographic Sciences Journal 2016; 12(24): 1-20. [In Persian].