

Reviewing the research done in the field of health, safety and environment management in Iran

Karimi Kavus¹, Ehsan Moradi-Joo^{2,3}, Sadegh Mahdavinia², Ebrahim Negahdari⁴, Zahra Makyani⁵, Mohsen Barouni^{6*}

1. M.Sc in environmental engineering, majoring in water and sewage, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
2. PhD student in Health Services Management, Faculty of Management and Medical Information Sciences, Kerman University of Medical Sciences, Kerman, Iran.
3. Abadan University of Medical Sciences, Abadan, Iran.
4. PhD student in Health Economics, Faculty of Management and Medical Information Sciences, Kerman University of Medical Sciences, Kerman, Iran.
5. Student Research Committee, Bostan Nursing Faculty, Ahvaz Jundishapur of Medical Sciences, Ahvaz, Iran.
6. Associate Professor of Health Economics, School of Management and Medical Informatics, Health Services Management Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran. * Email: mohsenbarooni@gmail.com

Abstract- Nowadays, with the development of urbanization, the increase in the growth of industrial units and the subsequent increase in environmental pollution, including air pollution, noise pollution and mental pressures caused by the artificial environments of cities, especially big cities, the need to create urban parks and green spaces is a necessary thing. Considering the importance of parks in the urban space, health, safety and environment issues are among those that should be taken into consideration in order to meet the needs of park users and all citizens. In this article, by reviewing the research conducted in the field of health, safety and environmental management of urban parks in Iran, the results were summarized and relevant research priorities were presented.

Keywords- urban parks, health management, safety and environment.

Introduction

An urban park is a park that is created by using engineering methods and under human management, in order to create examples of nature in cities (1). Urban parks are divided into four groups based on specific scales: neighborhood, neighborhood, district and region (1,2). Today, urban parks are key elements in sustainable urban development, which are also called natural calming spaces, which play an important role in reducing the stress of citizens and improve their mental health, as well as by providing a favorable environment. For raising children, social integration and maintaining comfort are considered indicators for improving the living space and development of society (3, 4, 5). In addition to all the aesthetic, psychological and health benefits, the existence of urban parks also brings economic benefits for municipalities, for example, air purification by trees reduces costs related to reducing air pollution and preventive measures. On the other hand, the aesthetic, historical and recreational values of city parks make the city attractive and turn it into a tourist destination, which in turn leads to job creation

and increased income (3). But the most important characteristic of urban parks is their green space and the presence of more trees means more effective of them (6). From an ecological point of view, parks and urban green spaces have an effect in reducing the negative consequences of industries and technology. These positive effects are in the form of a relative increase in humidity, a decrease in temperature, an increase in the amount of oxygen, protection of the soil, a decrease in light intensity, a decrease in noise pollution, prevention of dust emission, a decrease in the effect of the heat island phenomenon, and a softening of the water and air in the urban environment. They show themselves (7, 8, 9).

Nowadays, with the development of urbanization and the distance of city dwellers from nature on the one hand and the existence of environmental pollution such as air and noise pollution and mental pressures caused by the artificial environments of cities, especially big cities and megacities, on the other hand there is a need to create a park. and green spaces inside and outside the city in order to provide relaxing environments and spaces for recreation and recreation with beautiful learning, relaxation, sports,

and educational facilities with the focus on simulating nature in the urban structure in order to bring people closer to the natural environment and achieve peace. Physical and mental, it is unavoidable and one of the main issues in the matter of city services. In addition to this, the development of urbanization has caused a per capita reduction of green spaces in cities, and at the same time, the tendency and attention of people to such urban spaces has increased due to the growth of their awareness of these environments for recreation and stress reduction and other benefits, so the demand In order to expand parks and green spaces in the cities, he has followed (10). With these interpretations, the necessity of parks is felt in cities whenever and wherever there is an opportunity. Parks are an opportunity to improve the city environment and provide ecological infrastructure (9). Despite the existence of many advantages, using parks can also have negative consequences, for example, in some researches, citizens' fear of crime and crime in abandoned places of the park and feeling of insecurity from destruction of property have been reported. Also, the users of the parks include all different age groups and vulnerable social groups such as minors, the elderly, and the disabled, whose health and safety is important.

Parks and urban green spaces are one of the most important effective factors in shaping social sustainability and are considered as one of the indicators of the development of societies, but many factors such as the problems of urban life, safety, security and the inadequacy of the required facilities, The trend of using these places has decreased (10). Previously, most of the efforts to preserve the environment through the preservation of biodiversity, including the preservation of plant or animal species under threat or extinction, and less attention was paid to the urban environment in which humans live and the risks of health, safety and Its environment has been destroyed (3).

In urban areas, risks that cause a decrease in health, safety and environment are divided into two main groups including natural risks and unnatural risks including man-made risks. In general, the most important natural hazards include land subsidence, landslides, urban floods, earthquakes, and man-made hazards include air pollution, the formation and creation of heat islands, flooding of roads and lands, accumulation of household waste, construction, industrial and hospital and sedimentation in the urban drainage network, which causes the accumulation of hazardous pollutants and their consequences for health, safety, environment and human life in urban areas.

Today, with the development of technology and the improvement of living standards, as well as the

increasing number of environmental issues in cities, focusing on the provision of Urban Health, Safety, and Environment has become more tangible and mandatory than before. So that in open and closed urban environments, risks related to health, safety and environment, especially the lives of citizens, have become one of the most important and undeniable environmental challenges in cities. Urban parks also have the greatest contribution to the collective life of citizens due to the functional scale, as well as the diverse and wide range of their audience. Due to the fact that a large population of people with different cultural, economic, social and health conditions visit these places and because of the possibility of transmission and spread of diseases in these places and the importance of safety issues and environmental pollution In them, it is essential to comply with health, safety and environmental regulations in all these urban spaces. Therefore, achieving a targeted management tool based on coordinated and consistent principles and criteria that can accurately and effectively control potential and actual risks in the field of health, safety and environment of urban spaces and places, It seems necessary (11).

In recent years, the Health, Safety, Environment system has been proposed as a management tool to control and improve issues in all development and industrial projects (10), this system, by examining the health, safety and environment factors at the same time, is a suitable field for Establishment and implementation of environmental management standards (ISO 14001) and Occupational Health Safety Assessment Series 18001 (12).

Health, safety and environment management is a system that, in an integrated way and by using manpower, facilities and equipment, tries to create a healthy, pleasant, lively environment and away from accidents, damage and loss (13). The management of urban parks in the country has a traditional approach. In the traditional approach, due to the prevailing attitude after the incident, there will be a lot of human and financial damages in the parks. Therefore, changing the management structure to systematic management seems necessary (14). The issues of health, safety and environment in parks are among the important issues that must be considered in the planning, implementation, management and maintenance of parks before accidents and adverse effects occur and to meet the needs of park users and in a way all citizens. It should be noted. Therefore, by implementing a systematic approach to health, safety and environment management in parks, the statistics of accidents and the severity of their consequences can be minimized (15- 20).

In this order, the discussion of health, safety and environmental management in the form of HSE management system that will lead to sustainable management in the city is considered one of the most important and necessary issues related to urban service management programs, which is necessary through the park organization. And space Greening of municipalities, which is considered one of the sub-sectors of urban services, should be implemented. Therefore, it will not be possible to achieve the sustainability of the HSE management system in cities unless special attention is paid to the HSE discussion in urban green spaces in order to effectively and decisively identify and control potential and actual risks related to HSE in city parks. In this regard, there are many research gaps in spite of some research done inside the country, which in many cases caused disagreements between the relevant experts. The purpose of this research is to review the researches done in the field of HSE of urban parks in the country.

Discussion

In recent years, many researches have been done in the field of health and health effects of urban parks, but there has been less research in the field of health, safety and environment of urban parks in an integrated manner. The issues of health, safety and environment in parks should be taken into account in the planning, implementation and maintenance of parks in order to meet the needs of their users and in a way all citizens so that the least harm is caused to the user and the environment. The following researches are the first integrated researches in the field of health, safety and environmental management.

Arjamandi et al., in 2017, in a research titled "health, safety and environment management in urban parks" using a staged sampling method based on health, safety and environment criteria, selected 6 parks in Panj region of Tehran municipality. The community parks studied in this research include Gilil (District 6) and Bahar Azadi (District 1) parks on a neighborhood scale, Sahil (District 7) and Esteghlal (District 5) parks on a district scale and Shahid Parks (District 5) 3) and Miad (District 5) are on a regional scale.

The information needed for the research was collected with the help of library studies, internet searches and field surveys and interviews with parks and green space experts in the field of factors affecting the management of health, safety and environment of city parks. Then a questionnaire was prepared in which 16 indicators on safety, 8 indicators on health and 9 indicators on the environment were determined, and after observation and correction by the experts of parks and green spaces, the final questionnaire in each of the parks under The study was completed by the relevant official. In the next step, using the fuzzy

Delphi method, first, the options related to each question in the questionnaire were weighted by several experts of parks and green spaces in the region and based on importance, in a numerical interval of one to ten, so that the weight The higher the value of each option, the more important it will be, and the sum of the options for each question will be ten. The maximum desired score for each question is ten and the minimum score is zero. Also, in order to ensure the validity of the statistical findings obtained from the questionnaires, 5% of the statistical population completed the questionnaires again, and finally, a sensitivity analysis was performed using Lingo software. The results showed that the obtained data are valid up to the confidence level of 97%.

The results of the investigation of the health, safety and environment of the parks under study in Panj district of Tehran show that the health and safety indicators of the parks are average and the environmental indicators are weak. Also, the degree of desirability of the health indicators of the parks under study is 58.9% less than the desirability of their safety indicators with 59.2% and more than the desirability of their environmental indicators with 46.1%. Other results indicate that the indicators of the sanitary condition of the park staff room, the condition of informing and installing warning signs during the spraying operation in the park and the condition of the measures taken to reduce noise pollution in the park, respectively, in the three health departments, Safety and environment with 35%, 33% and 28.3% assigned the lowest degree of favorability. In the mentioned study, the reasons for the weakness in the management of health, safety and environment of the parks under study are given as follows:

- Lack of knowledge of park officials and employees about the effective factors in the state of health, safety and environment of parks and how to manage it optimally.
- Absence of sufficient laws and standards, appropriate to the issue of health, safety and environmental management of parks, and neglecting to review and amend existing laws and regulations based on national and international achievements.
- Lack of allocation of sufficient funds to achieve the goals of health, safety and environmental management of the parks.
- The existence of multiple decision-making centers in the issue of health, safety and environmental management of parks and lack of coordination in the existing management structure.
- Absence of periodic inspections and monitoring of the state of health, safety and environment of the parks.
- Lack of an efficient method for logical monitoring of the performance of contractors in the parks regarding

compliance with health, safety and environmental standards.

There were no suitable fields to attract the participation of the visitors to the parks and public organizations regarding the optimal management of health, safety and environment of the parks.

In order to solve the mentioned weak reasons, it is suggested to install the HSE-MS1 health, safety and environment management system in urban parks, including the studied parks, by adapting the model used in the country's industries to the conditions in the parks (21).

In a research by Azadi Nejat et al. in 1387 with the title of prioritizing design criteria in the planning and safety management of parks and urban green spaces by applying the multi-criteria decision-making method (MCDM2) using the hierarchical analysis process as one of The most important multi-criteria decision-making methods deal with weighting and prioritizing different criteria in the design of city parks in order to increase their safety. Effective criteria and sub-criteria in the design of urban parks using the opinions of experienced experts, as well as experiences in other domestic and foreign urban parks, collaborative methods such as meetings.

Group meetings, conferences are determined. In the next step, decision-making groups are determined, which include experts and experts with experience in parks and green spaces, urban designers, and groups involved in the executive activities of park users. Then, using the AHP3 method, the experts make a pairwise comparison between the criteria, and based on the standardized hourly table, the criteria are given a numerical rating. In the end, the criteria that have the most weight are given a higher priority for management and planning in safe urban parks, and then sensitivity analysis is done.

The results of this study indicate the weakness of management in HSE of urban parks. The most important reasons can be mentioned the existence of multiple decision-making centers and the lack of coordination in the existing management structure, the lack of specialized training and the lack of awareness of the park officials regarding its values, and the lack of an efficient method for the integration of decisions. In addition, although the design measures carried out have created psychological security in the parks, they have caused delinquent and criminal people to leave the park and transfer the problem of insecurity from one place to another in the city, without creating a suitable behavioral platform for such groups.

In the end, the results show that achieving the desired safety situation in parks is a process that is the result of the cooperation of citizens as users of these spaces on the one hand, and on the other hand, there is a lot

of correlation with the general situation and the facilities available in them. will have Therefore, the use of different decision-making methods that determine the importance of different criteria in the security of parks, along with these factors, can play an important and influential role in increasing the safety factor in parks and urban green spaces (10).

In 2012, Tehrani and his colleagues investigated the safety criteria in a research called the safety evaluation of city parks in Sanandaj District 3, which is the most important use of green space in this city. Descriptive-analytical and survey methods have been used in this research. Most of the required information was taken from documented and reliable sources, and most of the work was done in the field and site visits. Statistics and figures, information and maps related to the studied area were collected and finally the collected information was analyzed using EXCEL and ARC GIS software, and after going through the stages of identifying the existing issues and problems, proposed solutions It has been proposed to solve these issues. The data collection tool was done through a questionnaire and its analysis was done through SPSS software. The statistical population of the research consists of the visitors to the parks of Sanandaj Region 3. Random sampling method was used to select the sample in the statistical population. The studied parks are faced with issues and problems in terms of safety issues and appropriate environmental design, which are related to family areas, children's play areas, vegetation, surfaces, lighting, furniture, seats, drinking fountains, and public telephones. They are . The results obtained from this research using Friedman's test show that the parks of Region 3 have a favorable status and service status in terms of health safety index, safe drinking water status, compared to other indicators. Voting for the disabled and garbage collection on different days It has a more unfavorable situation among other indicators. In terms of physical safety indicators, having guide signs in necessary places as well as the presence of warning signs are better than other physical safety indicators, and the safety of children's play equipment in an unfavorable situation compared to There are other indicators. Also, the access lighting indicators show that having an electrocution hazard tag has appropriate conditions and in terms of the appropriate number of short and tall lighting bases, it is in an inappropriate situation (22).

In 1391, Dinarondi et al. investigated these indicators in a research titled "Say'i Park Health Status Survey" using the Health, Safety, and Environment Management System. In this research, with the help of library studies, internet searches, field surveys and interviews with parks and green space experts, we

tried to collect the parameters of the health, safety and environment of the park and the factors affecting their management. Then, a questionnaire was prepared by the researchers to assess the health, safety and environment of Sai Park from the point of view of the officials of the parks and green spaces. In this questionnaire, 10 indicators on safety, 6 indicators on health and 4 indicators on environment were determined. A simple Delphi method was used to validate the questionnaire, and the compiled questionnaire was reviewed by experts and experts with experience in parks and green spaces and experts in statistical sciences, and their corrections were considered. Then the final questionnaire was completed in the park under study by the relevant official. In the next step, using the Delphi method, first, the options related to each question in the questionnaire were weighted by several experts of parks and green spaces in the region based on their importance in a numerical range of one to ten, so that a higher weight is given to each Show the most important option and the sum of the options for each question will be ten. In order to ensure validity, using SPSS software, a sensitivity analysis was performed on 5% of the statistical population, the results showed that the obtained data are valid up to the confidence level of 95%. The results of the evaluation of the state of Sai Park based on health, safety and environmental criteria indicate that the desirability of environmental criteria is 51.1% on average, the desirability of health criteria is 43.1% on average, and the desirability of safety is 41.4% on average. all three sections are evaluated in the medium level. Also, the success of reform programs to optimize the health conditions of city parks, especially Sai Park, lies in the integrated management of health, safety and environmental measures.

Continuous monitoring and measurement is an important and sensitive process for ensuring and optimal implementation of any activity in environmental planning and management, and in connection with HSE management, there are also performance evaluation parameters, monitoring methods, guidelines and numerous management aspects. which can be useful in the health monitoring programs of urban environments, so it is suggested that in the safety area of city parks, from the point of view of safety, park spaces, especially children's playgrounds and gathering places, should be investigated and existing risks Word analysis will be done. In the health sector, harmful factors (including chemical, physical, biological and psychological factors) should be analyzed and the ways of contact with them, as well as mechanisms of action, exposure times and other similar matters should be investigated. In the environmental field, all the

existing environmental effects and consequences resulting from the park's functions should be examined.

Considering the importance of the issue of health, safety and environment in urban places and spaces and in order to achieve its proper performance, forming and compiling a comprehensive document in the field of health, safety and environment management in order to improve the situation Existing parks can To solve the problems of environmental planning in general and urban management in particular. This document is needed to achieve the efficiency of health, safety and environment in urban parks and to move in the direction of sustainable development (23).

In a research entitled "Evaluation of Urban Environment, Health, Safety and Environmental Management System Criteria in Parks and Green Spaces of Qom City" conducted by Mohammad Ashhanani and his colleagues in 2013, they examined the HSE situation of these places. The selection of the studied parks was based on the stages sampling method, which at the end of the Najmeh and Alvi parks in the region, the Purple and the Purple Parks and the Parks and the Parks of the Parks and the Park They were selected . In the next step, Delphi technique was used to evaluate the state of health, safety and environment management. The questions of the questionnaire were weighted by the experts of urban parks and green spaces according to the importance between zero and ten, with a higher weight indicating greater importance. Then, the average of the weights assigned by the experts to each index and finally the final weight of that index was considered and the weight of each index was between zero and one hundred.

In order to increase people's participation in the proper management of parks and urban green spaces, a questionnaire was made available to visitors. To obtain the sample size in this research for park visitors, Morgan's table was used, and sensitivity analysis was done by SPSS software. The results showed that 95% of the information is valid. Finally, the information obtained from the Delphi method was explained using Excel software. The results obtained from the evaluation of the health, safety and environment indicators in the parks and green spaces of Qom and the results obtained from the Delphi method showed that the safety sector with an average of 57.7%, health with an average of 57.5% and environment with On average, 45.7% had the highest scores, respectively, and the status of all three sections was evaluated as average.

Based on the results of this study, suggestions were made for the systematic management of health, safety

and environment of parks and green spaces, some of which are briefly mentioned:

- Establishing proper cooperation between different organizations, such as the organization of parks and green spaces in the field of HSE management.

- Changing the traditional structure of park management to systematic management and establishing HSE management system in parks.

- Holding training workshops in order to increase the awareness of parks and green space specialists in the field.

- Status of laws and standards related to HSE management of parks.

- Applying the latest national and international standards and laws in the HSE management of parks and correcting the current standards.

- Cultivation, education of citizens and employees and creation of necessary grounds to attract the participation of public organizations in the field of HSE management.

- Providing financial resources needed to achieve the goals of HSE management of parks.

- Conducting similar applied research in the field of the present research.

- Eliminating problems and obstacles related to research in the field of HSE parks.

- Establishing HSE units in different areas of the city.

- Regular control of the state of parks and surveys of people and employees of different departments of the park.

- Collecting the necessary documents and forcing the contractors to try to improve the condition of the parks permanently.

- Evaluation of the social impact of parks and green spaces

Aiming to determine the importance of parks on the lives of citizens (6).

Salehi and colleagues in 1391 in a research called the establishment of a safety, health and environment management system in urban parks, a case study of parks in a region of a municipality in Tehran, presenting indicators related to each of the safety, health and environment issues and surveying the public. It affects them.

Jamshidiyeh, Qaitariya and Niavaran parks, which are among the most important parks of Region 1 and have a use beyond the regional level, and its users include all citizens, were selected to conduct the study. In order to ensure the proper result, it was done to visit the parks and get information and opinions of the park experts in both summer and winter time periods. In order to establish the safety, health and environment management system and in order to evaluate and determine the safety level of parks and green spaces, a qualitative analysis was first performed in relation

to safety, health and environment risks and the indicators of each factor were introduced.

The main issues related to safety are: safety of playgrounds, safety of public equipment, appropriate routes and entrances and exits, lighting and safety of related equipment, guidance signs in appropriate cases, provision of adequate relief facilities and proper flooring. The most important issues that threaten the health of park users are related to unhealthy drinking water, food distribution booths on the surface of the park, and exposure of people to poisons and chemical fertilizers. In the field of environment, the preservation of different plant species and trees in parks and the optimal use of other natural resources that are decreasing are important topics that lead to the formation of environmental indicators. After the indicators are determined, they are evaluated and the necessary points are assigned to them based on very good (13), good (24), average (2) and poor (1) criteria. According to the evaluations of the three parks of Qaitariya, Niavaran and Jamshidiyeh, the superiority of the environmental option was observed in all the parks, respectively, in terms of safety and health. Also, the average of all three factors of safety, health and environment in the establishment of safety, health and environment management system in all three parks shows the superiority of Qaitariya Park compared to Niavaran and then Jamshidiyeh. Regarding the determined indicators and the evaluation of the average of each of the indicators in three parks, in the section of health indicators, personal protective equipment with 91.7% and trash can cover and canopy with 33.3% have the highest and lowest percentage of health. they earned In the section of safety indicators, adequate lighting with 91.7% was the highest, and lighting safety and pruning collection status with 50% were the lowest score and safety percentage. In the section of environmental indicators, plant maintenance, suitable water for irrigation and irrigation well with 100% and transfer of waste materials with 33.3% got the lowest score of this index (25).

In 2013, Dinarondi et al., in a research entitled Health, Safety and Environment Management in Urban Parks of the Sixth District of Tehran Municipality, examines the health, safety and environment issues of urban parks in an integrated way. In this study, with the help of a staged sampling method, Shafaq and Qezel Qala parks were selected from among the parks of the six regions, and Sa'i and Laleh parks were selected at the regional scale. To achieve the citizens' expectations, the QFD1 quality performance development method was used. In this method, citizens' opinions are placed in several categories and prioritized based on the conducted surveys. The method of collecting information was the questionnaire method and

people were randomly selected from among the visitors of the parks, which included different age and gender groups. Questionnaires were distributed on holidays and non-holidays at different times of the day and in different parts of the parks. The type of questions was a combination of multiple-choice and open-ended questions, and the opinions of citizens were examined and analyzed using the Likert scale method. The criteria of health, safety and environment, which is the result of citizens' opinions, are placed in a hierarchy in the AHP model and are compared in pairs with the weight allocation in the scale of 1-9 to identify the most important issues related to health, safety and environment. Also, the Delphi method is used in order to create an acceptable agreement between the experts' opinions.

According to the results of the survey in the AHP method, the most important requests of the citizens are: safety, security, health and cleanliness of the environment, control of pollution (air and sound), access to green space and vegetation, proper distribution and separation. Uses, diversity and beauty, supervision and maintenance, facilities and equipment, lighting in the park and furniture. Also, the results of completing the quality house matrix in the QFD method show the necessary priorities in all the parks under study as follows: peace and comfort, health and cleanliness, distribution and segregation of uses, environment and pollution, diversity and Beauty, management and maintenance and access and communication.

According to the AHP analysis of the opinion of citizens and the analysis of the considerations of relevant experts and the studies carried out in sample parks with a special model for measuring the safety, health and environment status, it is concluded that all users understand the importance of HSE and use its benefits for They pay attention to the improvement of the health, safety and environment situation and emphasize the need for environmental improvement in the form of reorganization and rehabilitation programs. Also, the results obtained from examining the health, safety and environment standards based on a special measurement model show that in general, the health and safety standards of the parks under study are average and the environmental standards are weak. The degree of desirability of the health criteria of the parks under study is also 48.2% less than the desirability of their safety standards with 52.9% and more than the desirability of their environmental standards with 42.4%. Other results indicate that the criteria of the status of trash cans in parks, guide and warning signs, and disposal of surface water and waste water, respectively, in the three sectors of health, safety and environment with 2.8, 2.36 and 7/ 26 percent assigned the lowest level

of favorability to themselves. The rest of the criteria are also in a state between average and good, which should be brought closer to the 100% status by correct management actions and the application of appropriate solutions (11).

In a study titled "Evaluating the safety of urban parks in Alborz, Ustakhan and Babaei provinces in 2013, it evaluates the risks in playgrounds, sports equipment, the surface of the existing passages in the park, and environmental factors." 11 neighborhood parks and 11 regional parks were selected for study. Using the safety checklist, 30 criteria in four sections of environmental factors, factors related to the surface, playground and sports equipment were considered, and the checklist includes items that are important for the safety of the park. In front of each criterion, yes and there is no, which indicates the presence or absence of danger. In the numerical evaluation, yes has a score of 100 and no has a score of zero, and finally the overall score is calculated. A score of 0-59 is considered weak, 60-69, relatively good, 70-79, good, 80-89, very good, and 90-100 is considered excellent. To compare the average safety scores of neighborhood and regional parks, t-test was used at the 95% confidence level. Finally, the results showed that the safety level of neighborhood parks is lower than regional parks. Also, the difference in the safety level of regional parks is less than that of neighborhood parks. The results of this research will be useful for schools, parks, suppliers of parts and equipment, manufacturers and designers of playground equipment in parks (26).

Conclusion

As centers of human activity and life, cities have no choice but to accept a structure and function influenced by natural systems in order to guarantee their sustainability. In the meantime, green spaces, as an essential part of the body of cities, play an essential role in their metabolism, and their lack can cause serious disturbances in the life of cities. Accidents and problems that occur in urban parks due to non-observance of health and safety principles provide concerns that are very important from a social point of view. Therefore, in recent years, the HSE-MS health, safety and environment management system has been proposed as a powerful and comprehensive management tool, but it has mostly been used in development plans and industrial projects. Considering the fact that this system creates a suitable platform for the establishment and implementation of environmental management standards and health and safety standards by simultaneously examining the three factors of health, safety and environment, and provides a suitable platform for sustainable development with an integrated approach. It can be

one of the best management systems for managing parks and green spaces. According to the stated cases, especially in big cities, the requirement to conduct research as follows can be discussed as a solution to the problems in the field:

- Determining health and safety indicators of parks.
- Identifying and defining the relationship between health and safety indicators in parks and urban green spaces.
- Identifying and presenting application models in relation to the health and safety of indoor and outdoor parks.
- Providing various evaluation models, determining the situation and Forecast.

References

1. Majnounian, Henrik, Discussions about parks, green spaces and promenades, publications of the Parks and Green Spaces Organization, 1374.
2. Faraji-Khiavi, F., Sharifi, S., & Moradi-Joo, E. The relationship between effectiveness of knowledge management practices and social capital from the managers' viewpoints in teaching hospitals of Ahvaz in 2015. *Journal of Rafsanjan University of Medical Sciences*, 2017, 15.11: 1049-1060.
3. Chiesura, A. (2004). The role of urban parks for the sustainable city. *Landscape and Urban Planning* (Vol. 68) pp.129-138.
4. Bahramy MA, Roozdar-Chaleshtary M, Abbasi V, Amiri-Nikpour MR, Moradi-Joo E. Clinical Features of Guillain-Barre Syndrome in COVID-19 Patients: Aria and Naft Private Hospitals in Ahvaz, Iran. *Entomol Appl Sci Lett*. 2021;8(3):21-7.
5. Baboli, M., Moradi-Joo, E., Delshad, I., Hamedpour, R., Hamedpour, H., Karamianpoor, J., ... & Binandeh, M. The relationship between social capital and organizational learning from the perspective of hospital managers. *Journal of Advanced Pharmacy Education & Research* | Jan-Mar, 2020, 10.S1: 103.
6. Mohammadi Ashnani, M., Salehi, E., Hassani, E., F., 2011. Urban environmental assessment use of HSE-MS metrics case study: parks and narl. green spaces of Ghom, *American-Eurasian J. Agric Environ*, Vol. 4, pp.702-710.
7. Jahanbani E, Ghobadian S, Moradi-Joo E, Rostami S, Drikvand M. Assessment of disaster planning in humanitarian supply chain management (HSCM), Khuzestan: 2012.
8. Eslami, K., Salahshouri, A., Arjmand, R., Fakhri, A., Akhtardanesh, N., Fouladi Dehaghi, B., ... & Babaei Heydarabadi, A. Designing and validating a questionnaire for evaluation the quality of virtual teaching of professors in Navid system. *Educational Development of Judishapur*, 2020, 11.3: 572-583.
9. Baig BM, Abarian A, Baghaei S, Soroush S, Rad SA, Pooromidi S, Moradi-Joo E, Gorjizadeh B, Davarpanah M. Assessment of the relationship between ABO blood group and susceptibility, severity, and mortality rates in COVID-19. *Assessment*. 2021;8(2).
10. YOUSEFI, H., SAHZABI, A. Y., MASI, M., GHALEH, S., & MIRZAAGHABEIK, M. (2016). Urban parks prioritization concerning the age-friendly criteria in Sari, Northern Iran. *International Journal of Occupational Hygiene*, 8(2), 116-123.
11. M apar, M., Jafari, M. J., Mansouri, N., Arjmandi, R., Azizinezhad, R., & Ramos, T. B. A composite index for sustainability assessment of health, safety and environmental performance in municipalities of megacities. *Sustainable Cities and Society*, 2020, 60: 102164.
12. YOUNG, J. Review of Efficiency and Effectiveness of HSEs Corporate support: The Project and Background Detail. *Health and Safety Executive Board Paper*, 2003.
13. Khadami, Mustafa; Khani, Mohammad Reza; Khadami, Alireza, *Health, Safety and Environment (HSE) in Industrial Processes*, Avay Qalam Publications, 2019, p. 269.
14. Ghahrani, A...., safety management systems and the role of standards in safety management in parks, *Proceedings of the second safety seminar in parks, 2013*, Department of Green Spaces, District 5, Tehran.
15. Garcya Herrero (S. Angel Mariscal) M. Manzanedo del Campo. M. Ritzel. D. (2002). People. From the traditional concept of safety management to safety integrated with quality. *Journal of Safety Research*. Elsevier Science. (Vol. 33) pp.1-20.
16. Moradi-Joo E, Khanzadeh A, Baghaei S, Shabani A, Sharafi A, Kanani K, Mobarak S, Ghorbani Kalkhajeh S, Mohammadi SM. Identifying the most important strategies for development health tourism in affiliated regions of Abadan University of Medical Sciences. *Health and Medical Research Journal*. 2022 Nov 19.

17. Gholizadeh B, Javaherforoosh Zadeh F, Nabavi SS, Moradi-Joo E, Baghaei S. The Relationship between Quality of Life and Mental Health in Patients with Heart Failure. *Entomol Appl Sci Lett*. 2021;8(3):60- 6.
18. Fakhri, A., Baboli, M., Jahanbani, E., Moradi-Joo, E., Karamianpoor, J., Binandeh, M., ... & Gorjizade, B. The Relationship between Perfectionism, Personality Type A and Metacognition with Job Burnout in Staff of Ahvaz Jundishapur University of Medical Sciences. *order*, 2020, 1: 2.
19. Gholizadeh, B., Nabavi, S. S., Baghaei, S., Zadeh, F. J., Moradi-joo, E., Amraie, R., ... & Najafian, M. Evaluation of Risk Factors for Cardiovascular Diseases in Pregnant Women Referred to Golestan Hospital in Ahvaz. *Entomol Appl Sci Lett*, 2021, 8.3: 40-5.
20. Fakhri, A., Hamedpour, H., Pad, Z., Hamedpour, R., Moradi-Joo, E., Binandeh, M., & Davarpanah, M. Exercise Effect on Anxiety and Depression among Kidney Transplant Patients. *Entomol Appl Sci Lett*, 2020, 7.2: 77-82.
21. Arjamandi, Reza; Jozi, Seyed Ali; Nouri, Jaafar; Afsharnia, Azadeh, Health, Safety and Environmental Management of Urban Parks, *Environmental Science and Technology Magazine* 2008. 10 (1).
22. Dinarvandi, Morteza; Salehi, Ismail; Shakerzadeh, Mohammad, Examining the health status of Sai Park using the Health, Safety and Environment (HSE) management system, the second environmental planning and management conference, 2012, Tehran, University of Tehran.
23. NEISIANI, B. Akbari; SEYEDAN, S. M.; RADFAR, E. Urban green spaces assessment approach to health, safety and environment. *International Journal of Human Capital in Urban Management*, 2016, 1.2: 123-132.
24. MUSUNGWA, Tatenda; KOWE, Pedzisai. Effects of occupational health and safety management systems implementation in accident prevention at a Harare beverage company. *Cogent Engineering*, 2022, 9.1: 2124638.
25. MUSUNGWA, Tatenda; KOWE, Pedzisai. Effects of occupational health and safety management systems implementation in accident prevention at a Harare beverage company. *Cogent Engineering*, 2022, 9.1: 2124638.
26. LIN, Yu-Cheng; CHEUNG, Weng-Fong. Developing WSN/BIM-based environmental monitoring management system for parking garages in smart cities. *Journal of Management in Engineering*, 2020, 36.3: 04020012.