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ORIGINAL ARTICLE

A Comprehensive Review of the Factors Affecting the Redefinition of Therapeutic Use in Metropolitan Cities during the Emerging and Re-emerging Pandemics

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Abstract: *Resilience refers to the means and ability to deal with adverse conditions. Resilience is defined as the ability of the system to recover easily after disturbances and changes in the system and the ability of the organization to respond quickly to them. The resilient system can withstand environmental pressures so that it can provide optimal performance in critical situations. Resilience in the use of healthcare services is related to reducing vulnerability to shocks caused by natural disasters and increasing adaptive capacity due to improved measures and opportunities. Considering the importance of evaluation, monitoring, and planning to improve user resilience against accidents, spatial evaluation and redefinition of the use of health and medical services to prepare a comprehensive model for measuring the resilience of hospitals against accidents and calamities Naturally, at the top of which is the coronavirus epidemic, it is necessary. The aim of the current study is a comprehensive review of the factors influencing the redefinition of the spatial pattern of therapeutic uses in big cities at the time of the emergence of a pandemic disease with a resilience approach. It is expected that the managers and decision-makers of the country's health field can use the results of the present research for better planning.*

Keywords: *Resilience, Economic factors, Metropolis, Healthcare services, Coronavirus*

INTRODUCTION

The accelerated and unbalanced development of physical space in some countries in the last few decades has brought adverse social, economic, and physical effects and consequences [1].

The exorbitant costs of urban transportation and services, energy waste, wasting material and social capital in the city, intensifying social segregation, environmental destruction, lack of beauty and cohesion of the city environment, social identitylessness, and instability are among the most important problems of cities in the discussion [2]. Undesirable development of physical space and low density of cities are considered. We are now living in the era of urbanization and urban development, where the ecology and morphology of cities have been increasingly affected by human and natural activities, with the development of urbanization and the desire of people to live in cities, as well as the occurrence of such diseases [3]. In recent years, the existing healthcare spaces in big cities have been seriously challenged. So during the peak of the epidemic, it reaches its peak time and the lack of these uses (hospitals and other medical centers) is felt in urban communities. For this reason, in recent years, many cities have implemented measures to create such spaces (sanitary-therapeutic) during the crisis of pandemic diseases [4].

In Iran, especially since the 1950s, the need to compile different levels of the health network cycle of the country has been felt and based on specific studies of culture, geographical environment, the population of each region, and various types of treatment facilities, from health centers to hospitals. This important thing has been specified and defined. Of course, the country's goal of these divisions is to create the possibility of greater efficiency of financial, equipment, construction, human resources, etc. [5]. In the shortest possible time and with the highest quality of treatment and health, especially when pandemic diseases (coronavirus) occur. But the format of city managers looks for other things beyond these necessities [6]. Improving access to medical services as an indicator of quality of life and social welfare plays an important

role. Equal access to medical services for different sections of society in a fair and balanced distribution of these services is one of the important foundations of social welfare [7]. Treatment spaces can be designed in 2 formats: 1) Health spaces and 2) Health-treatment spaces The basis of work in the health management system of countries is the discussion of the care and survival system of health centers and the chain of health spaces. Along with and parallel to the completion of this chain, the treatment system is proposed and then the treatment spaces are defined [8]. Although in most countries, the health care system is necessarily more complete than the treatment chain, but the possibility of full adaptation of these two chains to provide health services in cities is one of the ideals of every country. Today, the growth and development of urbanization have led to the creation of many facilities, but it should be kept in mind that with the growth of urbanization, the factors that because crises have also increased [9]. The issue of access to urban services is one of the important issues that affect the city from various dimensions. In some cases, the lack of proper access to some uses puts people's health at risk. And suitable for it is necessary for all members of the society to access services from two dimensions: the access of the target space is not the space that can be examined [10]. Access is one of the key components affecting the important quality of the urban environment, among the important ideals in this field is homogeneous access with the highest degree related to urban facilities [11]. The sustainability of cities and even megacities when pandemic diseases start, depends on the function and ability and more optimal use of health and treatment spaces, especially urban hospitals, therefore, based on the announced policies of the urban planning and treatment system of each country, it is effective for the life of that city [12]. It will be useful, however, when such crises (pandemic disease) occur, in such a way that it shows the best reaction and response in the shortest possible time during the accident. This will require the review, definition, and re-review of the uses of health and treatment spaces during pandemic crises (after the start of the coronavirus) [13]. Natural and man-made disasters inflict various types of damages, injuries, and death on the affected communities. Such disasters can disrupt various infrastructures and facilities, including hospitals, schools, transportation systems, and emergency services [14]. Non-attendance or lack of preparation in the continuity of services in emergencies caused by accidents has destructive and unfavorable effects on the responsiveness of hospitals. Recent disasters around the world have resulted in irreparable damage to hospitals and disruption of medical services [15]. One of the calamities that has spread all over the world today and has affected all the countries of the world is the coronavirus. In December 2019, the first case of coronavirus was reported in Wuhan, China, and due to the high death rate caused by it, it caused global panic. The rapid transmission of this virus has led to the diagnosis of more than a few million patients over the past two years [16]. A significant increase in the number of infected patients has made the work of medical and health centers difficult in dealing with this disease. Disruption and inconsistency in the provision of medical and health services can lead to irreparable losses and damages [17]. Therefore, it is very important to encourage researchers and decision-makers in order to prepare strategies for improving resilience in health and treatment centers [18]. The aim of the current study is a comprehensive review of the factors influencing the redefinition of the spatial pattern of therapeutic uses in big cities at the time of the emergence of a pandemic disease with a resilience approach.

METHODS

This research is a scoping review that has been conducted by searching for systematic studies to identify the factors influencing the redefining of the spatial pattern of therapeutic uses in big cities at the time of the emergence of a new and re-emerging pandemic disease with a resilience approach using the Cochrane protocol in 1402. accepted. The study inclusion criteria were defined as follows:

Publication date: Due to the comprehensiveness and breadth of both keywords of the research, preparedness against emerging and re-emerging pandemic diseases and the spatial pattern of therapeutic uses of megacities were searched with a resilience approach. In terms of time, only researches that were published in the last decade, from 2010 to 2023 AD and from 1390 to 1402 AD, were examined.

Language: Due to time, financial, and manpower limitations, only the research published in English or Farsi was examined. On the other hand, to evaluate the quality of the studies and use them in the review, only the researchers whose texts are accessible to the researcher have been used.

Place of publication: Relevant sources published in reputable scientific journals, conferences, and theses were used.

Type of studies: Quantitative, qualitative, mixed, or review studies were examined.

The extracted sources were examined by two researchers independently. In this way, the mentioned keywords were first searched in reliable Persian and English scientific databases, including Direct Science, Scopus, PubMed, Google Scholar, and SID in the period from 2010 to 2023. The reason for choosing these databases was their validity and comprehensiveness including a large number of authoritative English-language publications in the field of health and environmental studies,

as well as the availability of access to most of the articles and books of these databases for the researcher. In the next step, articles whose full text could not be accessed were excluded from the study. Then, the articles that appeared more than once in the search results were removed using Endnote software, and according to the title of the article, articles not related to the topic were also removed. In the next step, the abstracts of these articles were studied more deeply, and according to the proposed limitations, at this stage, the articles that did not meet the mentioned criteria were removed. Finally, to evaluate the quality of the articles, the standard evaluation checklist (Critical Appraisal Skills Program: CASP) of qualitative studies was used, and the studies that received a score of 25 or higher were included in the study. Due to the inconsistency of included studies and the impossibility of meta-analysis, the meta-synthesis method was used to analyze the data. Out of 2583 reviewed articles, after considering the entry and exit criteria, 37 articles were included in the final review.

RESULTS AND DISCUSSION

The topic of social justice was first introduced to the science of geography by David Harvey in the book Social Justice and the City in 1976. In this book, Harvey has examined social justice with a radical Marxist perspective. In general, many articles and theses have been presented in the discussion of social justice in Iran, the most important of which are mentioned in the following. English et al. (2021) in the research they conducted in the city of Seoul, South Korea, have concluded that in a city, despite having enough services per capita (such as a park), due to improper distribution, they may be available to everyone.

Therefore, the residents have evaluated the distribution of parks concerning the population and other uses of the city and the proposed density of the areas. The results of their findings show that some of the residential areas in Seoul are deprived of access to city parks [19]. Esser et al. (2019) conducted research titled Capacity in Education: A Step Towards Social Justice, which was carried out from a 3-year collaborative activity of 8 primary schools in Darussalam and the coastal region of Powani in Tanzania, and concluded that there are countless obstacles to capacity (Education) In the world, communities and school levels exist, and in Tanzania some progress has been made in terms of (education) capacity, but equity and quality of education still have a long way to go [20].

In their article, Yasobant et al. (2019) express the idea of locating hospital centers in cities, in general, there is no long history in the field of locating medical and health service centers, and it goes back to the 1970s, since 1979, the department Social security health in England paid attention to the strategic development of medical and health service centers in cities, and it was followed in Austria in 1980 and 1982 [21].

Manenti et al. (2020) in an article on urban health addressed the evidence, challenges and guidelines. As a result, we note that although in this review we highlight challenges, this is due to the potential power of urban health research and the importance of studying health. Although the study of urban health encompasses considerable complexity, research with specific research questions and appropriate study designs can improve our understanding of the relationship between specific characteristics of urban nature and health in both specific cities and as generalizable to National cities and recent methodological advances, especially the widespread adoption of multilevel methods in public health research, have made it possible to test hypotheses about urban characteristics and their association with specific health outcomes. Finally, newer methods may contribute to a better understanding of competing influences on the health of urban populations over time. Such research can inform local interventions and policies in urban areas. We hope that efforts such as this review aim to build Our thinking about cities and health will help stimulate both empirical and theoretical developments that can lead to improved health in cities around the world [22].

Schäfer et al. (2021) in research have examined the spatial access of primary care, including methods, challenges, and concepts, and finally concluded that almost all healthcare centers to date, whether based on simple or complex measures, are limited to social inequality in access to health services and to investigate how much primary care centers affect people's health [23]. Sevá et al. (2017) have conducted a research regarding the access and use of health services in Ghana, in which the aim is to investigating the impact of access and socioeconomic factors on the use of health services in developing countries (specifically Ghana). Utilization of health services in Ghana distribution shows a significant difference between rural and urban areas in all variables, except health status and age. Even though the metropolis uses relatively more health services than the villages, the difference in the health status (need) of the two districts is not significant. The coefficient between the two districts is insignificant. Therefore, there is a difference between the need and use between the districts. Success is part of a local understanding of the dimensions and determinants of access to health services, as well as concrete efforts to improve services for the poor. Part of the innovations in health care financing and regulation of care promises to improve access for the poor in any case.

The challenge remains to find ways to ensure that vulnerable populations have a say in how strategies are developed,

implemented, and formulated, and to ensure that information and incentives are channeled in ways that can lead to improvements in access for the poor. It is expressed whether or not it can be given [24].

Morris et al. (2021) researched regarding the regulation of access and use of health services. The results showed, first, descriptively, how the countries are using different doctors to refer to a specialist. Second, a multilevel analysis shows how regulatory indicators affect each quantity of care consumed in a country, and finally, they examine how institutional structure affects differences in service utilization among groups with different incomes, education levels, and Health statuses [25].

Lingam et al. (2021) studied the determinants and pattern of health service consumption among graduate students and the result of this research showed that the healthcare system in Pakistan includes public and private health centers. In Pakistan, the majority of doctors are in the regions. They live in the city and attract the educated classes than the private sector. The use of public healthcare facilities is not the main priority of the educated class of the country, and government officials should pay more attention to making it more common for the people [26].

Gatto et al. (2022) studied poverty and access to health care in developing countries. The result of this research showed that despite the progress in access to health care in developing countries, a significant number of their population has limited access. Poor countries have a higher burden of disease but usually have less access to health care. Whether based on geographical access, accessibility, physiological access, acceptance or quality of care. However, recent studies show that this exodus is inevitable [27].

Peng (2020) discussed the optimal location for the construction of a hospital. In this study, the AHP method was used as one of the methods of multi-criteria analysis and GIS. The result of the study showed the use of the hierarchical analysis process in location. The hospital has been very efficient in the study area [28].

Lewis et al. (2021) investigated the improvement of access to health services in urban and regional areas for indigenous people. The results of this literature study provide information about barriers to access to health and mental health services for local people living in urban and regional communities. These barriers can be classified as barriers of accessibility (physical accessibility), affordability, appropriateness, and cultural acceptance [29].

Sousa et al. (2021) analyzed the equity and use of health services in Uganda in a research that focused on several factors (supply and demand) that affect the access and use of health services in Uganda, such as Education, age, household expenses, use of the outpatient department, hospital capacity and the distance from medical services, this study has analyzed a number of measures that are used in the implementation of policies, especially in the main fields. Key policies such as malaria, tuberculosis, and HIV/AIDS have been created. The analysis shows, however, that despite efforts to improve health by improving health outcomes for people, mountainous challenges still remain. For example, living near essential health services, although they work as an incentive to use care, does not necessarily ensure that health services are actually used. Secondly, the elimination of the usage fees of all government centers will increase the utilization of new healthcare facilities, especially fixed and fee-based service providers with catastrophic costs [30].

Joshi et al. (2022) in a study investigated the access and use of health care among rural households in Nigeria. The results showed that the average age of the respondents was 46 years and the average household was 8 people. The majority of the respondents, 43.5%, do not have formal education and the main occupations are agricultural officials. 58% of the respondents have access to medical services, while only 42.5% use these services. Most of the respondents, 40.5%, are 5-9 kilometers away from accessing medical centers. Accessibility indicators show unequal access to modern health facilities in the study area, so this study recommends that rural development policies should create an organizational environment to increase participation and access to justice in the provision of modern health care throughout rural areas. strengthen in the country [31].

McKenzie 2017, in an article on the access and use of health services in Massachusetts, the United States, conducted a qualitative study of the views and experiences of immigrant women in Brazil. The findings of the research show that illegal immigrant women in Brazil are more likely to access health services in countries that have health services. They are satisfied with the global level. Health care is critical to quality of life, but many immigrants and ethnic minorities often lack adequate access to health care, increasing health risks. This study adds to the current literature on healthcare access and use by immigrants living in the United States and also provides new information on Brazilian immigrant women's perspectives and experiences of healthcare access and use in Massachusetts, USA to give While identifying the opportunities to improve the services and health of the entire immigrant population [32].

Allam et al. (2022) examined the relationship between transportation networks and healthcare services and their impact on urban sprawl. The findings of this study show that there are more dynamic relationships between the content of

these urban components and access to health care [33].

Das et al. (2021) investigated the design of decision support systems for access to space services. The results of the research showed that improving access to health care can help reduce health costs, increase healthcare equity, and improve health outcomes. Through our research, we have designed a new application-based framework for measuring access to health care and a practical example of SDSS that is rooted in the theoretical concepts of BM and existing FCA methods. Our unique method to obtain the weight of the population characteristics is provided by the use of predictive analysis using real data to evaluate the need to integrate non-spatial factors into existing algorithms in the creation of SPAI. The findings should encourage future research to further examine how demographic characteristics may shape the demand for health care gives the hardness by considering the actual manufacturer's needs [34].

Cotta et al., 2020, reviewed the approaches to measuring potential spatial access to urban health services in a research where they examined the types of distances and their related issues [35].

Berendes et al. (2018) examined the urban status and health competence of critical issues and exercises, and it was concluded that if the global community is serious about the sustainable development goals of SDGs, more attention should be paid to understanding and taking action to improve urban conditions to have a life and social and economic conditions that can promote health competence. The result of the research showed that healthy and fair urban places are very important to achieve health for all the population, however, strict emphasis is placed on built environments or risk factors. A single person does not address the numerous and often cumulative social and environmental obstacles that exist in cities today and does not help the inequalities that burden poor urban communities. To collaborate or help the urban poor to analyze and solve problems. We realize that this will not be easy and the evidence base for how to do this effectively is still emerging. Our challenge is great, but in an urban planet public health Environment is urban health and health justice should be our goal [36].

Pak et al. (2018) investigated network and spatial analysis to evaluate and guide decision-making about equal access and health services in the general patient care system in Ederdamora (Spain). The simultaneous use of access and coverage maps to show the relative distribution of resources in a population, while showing the coverage levels according to the time of access to physical and professional facilities with and without administrative restrictions, can help decision-makers to improve the optimal level of stocks in a region. Large and low-density geography is very valuable [37].

Coccia et al. 2020 studied the issue of access to health care by urban refugees and the host population around Uganda. The results of this research showed that health services were available every five kilometers for both refugees and the host population. Refugees are generally unable to pay for access to health services, including transportation, research, essential drugs, and other informal costs. Refugees' perception of public health services is weaker compared to general citizens. Primarily due to long-term expectations of a small number of inadequate essential drug services, perceived discrimination and the existence of unofficial fees [38].

Paris et al. (2020) in a study to measure the resilience of traditional societies against natural disasters have concluded that traditional societies face natural disasters using four dimensions: nature of risk, level of resilience, cultural structure and policies. Managers can show resilience in the face of disasters [39].

Finn (2022) conducted a research as a place-based model to understand the resilience of local communities against natural disasters. This study presents a new framework of the place of urban resilience in order to improve the method of assessing resilience against disasters at the local and regional level, and a set of variables have been considered in this study as the first step in the target research. The final output of this research is presented in the form of environmental, social, economic, institutional, infrastructure, and competence of society [40].

Park et al (2022) in an article titled "Towards resilient regions: regional development policy" use a descriptive-analytical method and emphasizes the economic dimension of resilience and analyzing indicators of employment rates, large-scale economic centers, income and production gross and knowledge mobility introduced the process of making the regions resilient [41].

Plastina et al (2019) worked on an article entitled Regional planning and the future of resilience in the Ning ladder coral coastal region of Australia in 2019, which was the indicator of resilience and the amount of tourist attraction, which finally reached the correlation between resilience and tourist attraction [42].

Teng et al (2022) in an article titled "Tissue-based identification of old urban neighborhoods in Hyderabad, India using remote sensing data with a renovation approach, concluded that the location map of worn-out tissue is an efficient tool in identifying areas." The densely populated city can be used as a reliable source for vulnerability and resilience assessment in the next step. The presented method allows for quick analysis and comparison of multi-temporal data and can

be used in many densely developing cities around the world [43].

Acharya et al. (2017) collected the articles and opinions of different people in one collection and investigated the reconstruction of built environments after disasters in order to increase resilience and found that resilience should be considered among the necessities of reconstruction [44].

Hasson et al. (2022) categorized urban resilience indicators from a landscape ecologist perspective and the result of this article introduces five urban design and planning indicators to create urban resilience, which include redundancy, multi-functional (biodiversity) Being an urban system, urban ecological networks and connection with connections, adaptive design or adapting to changes, he still emphasizes the combination of ecological principles and urban planning to achieve urban resilience [45].

Ferdowsi and Arkhodi (2016) in an article entitled "Evaluation of health and medical resilience of Semnan province cities against natural disasters" stated that due to the high importance of health and medical resources in order to improve the resilience of settlements against natural disasters Naturally, managers and planners should have a special approach to providing healthcare facilities and infrastructure. The purpose of this research is to evaluate the cities of Semnan province based on health-medical indicators effective in resilience. In this research, the desired indicators have been evaluated using the Vikor model. According to the results, the cities of Shahrood, Damghan, Garmsar, Aradan and Sorkheh have a more efficient performance in providing services during the occurrence of natural disasters by having proper medical facilities and infrastructures, and in other words, they have favorable health-medical resilience in the face of natural disasters. They will have accidents. On the other hand, the cities of Mahdishahr, Miami and Semnan, due to the lack of appropriate proportion between the population and medical facilities and infrastructure, will have low resilience when faced with accidents compared to other parts of the province. In general, by evaluating and analyzing this process in Semnan province and resilience strategies, managers and planners can lead the cities of the province to strengthen resilience against natural hazards, considering the existing capacities and competitive advantages [46].

Saffari Darberazi et al. (2019) in an article entitled "Designing a Comprehensive Hospital Resilience Model in the Face of Corona Disease" stated that healthcare centers should be able to quickly adapt to catastrophic events such as natural and human disasters. One of the ways to deal with various disasters in healthcare centers is to increase resilience.

The current research aimed to design a comprehensive hospital resilience model by identifying the factors affecting hospital resilience, and the way these factors are related in the face of the corona disease. At first, by using the background study of the research, the effective factors on hospital resilience were identified, and then by using the interpretive structural modeling technique, the communication model between the identified factors was obtained. The conceptual model obtained from interpretive structural modeling was fitted using Smart PLS software version three. For this purpose, the questionnaire containing 33 questions was provided to 80 managers, experts, and employees of Yazd teaching hospitals. The research results indicate the identification of eight general factors affecting hospital resilience. The eight factors identified in the present study were structured in four general levels by interpretive structural modeling. The starting level of the model is the factors of "sustainability" and "information technology and communication system". Also, the model-fitting results confirm the relationships formed by interpretive structural modeling. Based on the results of the present research, the country's health and treatment managers can use to make the country's hospitals resilient in the face of natural disasters and unforeseen events [47].

Ebrahimzadeh et al (2009) in an article entitled "Spatial-spatial planning and organization of health and medical services using GIS case: Zanjan city" found that in most cities there is a lack of appropriate allocation of space and optimal placement of service and physical elements. The city, especially the medical centers (hospitals) and the number of effective factors in the location of these centers, has followed and continues to increase the problems of the city and its citizens. Therefore, this has revealed the necessity of using effective methods and computer systems in the optimal location of these centers. The current location of most of the medical centers and hospitals in Zanjan city does not match the scientific criteria of the needs of this land use, at the same time, the findings of this analysis show that the current need of medical centers in Zanjan city is at least 7 hospitals according to the city's per capita, which the city officials They can use 11 points extracted from gis to solve this deficiency [48].

Rahnama and Amirfakhrian (2010) analyzed spatial access to healthcare services in the city of Mashhad. They stated that access planning, as a method of integrated planning of users and transportation networks, has two spatial and non-spatial dimensions. The availability and availability of services is one of the dimensions of spatial access, and this study examines medical services in Mashhad. The study method is of descriptive-analytical type, based on which, after forming a spatial data bank of therapeutic spaces in ARC-GIS software (including 6 major uses with 4528 frequency items) and using accessibility models. two-stage floating basin", the condition

of Mashhad's districts' access index to each of the treatment spaces was determined. The advantage of using this method, compared to other methods, is the simultaneous use of indicators such as distance, functional radius, and number of facilities. The result of this analysis shows the mismatch between the spatial distribution of the population and the distribution of medical services. In other words, the central areas of the city have the best access and the peripheral areas have the weakest access to medical services. In the following, while using SPSS software and the "two-stage cluster analysis" model, 1266 population zones of Mashhad city were classified in terms of access to health care services. In this section, the results of the findings showed that the city of Mashhad can be classified into two clusters, including the first cluster with an average accessibility index of 3.24, including 2.3% of urban areas (areas with excellent access conditions) and the cluster The second one with an average accessibility index of 0.061 includes 97.7% of the domains, which does not show a good situation compared to the first cluster. The graphs prepared from the evaluation of this model showed that the most important indicator regarding the difference between the first cluster and the second cluster is the index of access to pharmacies. On the other hand, the index of access to emergency bases shows the least role in this classification [49].

Shojaiyan and Rahimpour (2017) in an article entitled "Evaluation of land suitability of health-treatment centers using CF analysis (case study: regions one and eight of Ahvaz city)" stated that the assessment of urban land suitability is the basis of urban planning. Especially in the field of proper use of land. This important issue directs the existing uses in the city in such a way as to prevent incorrect and incompatible adjacencies and ultimately lead to the establishment of land suitability. The present research was carried out with a descriptive-analytical approach in order to evaluate the land suitability of health-therapeutic centers in areas one and eight of Ahvaz city. ArcGIS software and CF relationship were used to achieve the mentioned goal and analyze the obtained information. Finally, the spatial distribution of land and the suitability percentage of each of the selected uses were determined with health-therapeutic use. The results of the research showed that among the uses studied, industrial use with 16.17%, residential use with 8.17%, and then fire stations with 7.53% had the highest incompatibility, and main roads with 0.71% had the lowest incompatibility. Is. In the end, 41.09% of the total area of the studied area is occupied by incompatible areas, 18.66% by neutral areas, and 13.02% by compatible areas. According to the conducted studies, the suitability of the land and the proximity of the selected uses in relation to the health-therapeutic use in the studied area have not been proportionately observed [50].

Motamedi (2019) in a research article entitled "Investigation and locating the access of the citizens of Shirvan city" to therapeutic uses. In this article, one of the basic and important tasks of urban and regional planners is to allocate land to various urban uses while paying attention to the role and function of the city, the economy of the city, and also the effect of mutual factors of uses on each other. The results showed that in terms of location, the studied clinics are concentrated in the eastern side of the city, and the central and western parts of the city are limited in terms of access to the clinics, and only 28,136 people out of the city's population of 83,000 have access to the standard radius range of the clinics; In other words, it can be said that about 75% of the city's population is outside the standard radius of the clinics, and the access radius of the clinics is not suitable for the citizens of the city, and there is a need for a well-equipped hospital in the west of Shirvan [51].

Hataminejad et al (2017) in a research entitled "Analysis of access to urban services in Esfrain" which was conducted using a questionnaire and unbalanced Morris index, concluded that the upper socio-economic classes in the city of Esfrain, in terms of having better financial conditions, they have more favorable uses, and the distribution pattern of service uses is in favor of more prosperous groups so that it is not consistent with the concepts of social justice [52].

Rostami (2010) in the research "Investigation and analysis of urban public service distribution from the perspective of spatial justice, case study: Yasouj city" the degree of access and need of residents to public services using the access network analysis model, hierarchical analysis model and analysis model local spatial autocorrelation has been investigated and analyzed. He also used the Gini coefficient to analyze the inequality of access to urban services and the Moran coefficient to analyze the pattern of distribution of injustices among urban blocks and finally concluded that urban public services are based on accessibility, public benefit, efficiency Population distribution and residents' needs for public services have not been fair and facilities are concentrated in certain areas [53].

Rahnama and Zabihi (2011) analyzed the distribution of public facilities in line with spatial justice with the integrated model of access in Mashhad in 2013 and in this research they concluded that the integrated access analysis of services with the help of geographic information system and spatial autocorrelation technique This indicates that the spatial distribution of public facilities based on Moran's index is clustered and based on the general index, it is a cluster with low concentration. The final result is that the spatial distribution of public facilities is not fair based on the integrated model [54].

CONCLUSIONS

The range of topics and topics of strategic urban research is very wide. For example, studying sports, recreational, therapeutic, educational spaces, police stations, fire stations, etc. All of them are topics that the researcher can investigate. To scientifically and accurately examine urban issues, it is necessary to carefully examine the components and influencing factors according to their type and degree of importance. In addition, due to the rapid growth and expansion of cities, the existence of a multitude of variables affecting them, as well as the incredible amount of information, the use of traditional methods in the analysis of problems is not very reasonable and expressive, and it is misleading. Factors such as population growth, migration and its consequences, and the fair and optimal distribution of services in the city environment and especially the metropolises are associated with obstacles and problems, therefore, adopting efficient and appropriate policies in relation to the provision of services and optimal allocation of space for the population living in different sectors of the city (outskirts, center, etc.) is one of the important goals of urban planning for quick and low-cost access to citizens. In this chapter, theories and models such as spatial allocation models, access models, attraction models, therapeutic approaches, sustainable development theory, and spatial theories were discussed.

Therefore, considering the problems stated above and the large spatial scale and analysis of a large amount of mechano-descriptive and statistical information, the researcher was motivated to solve various problems by having analytical functions (especially network analysis facilities, spatial allocation models and modeling in general) including analysis of accesses, determination of sphere of influence, location, and allocation of resources, sustainable development, development of social justice and so on.

With the help of these tools and statistical analysis, reach scientific results. Biological accidents and threats, re-emerging, and emerging diseases are increasing, and in these diseases, accidents, and threats, the first place to get involved is the Ministry of Health, especially hospitals. Hospitals must have the necessary preparation to face these incidents and threats so that in case of such incidents, they have the least vulnerability reduce casualties, and can provide the best and safest care to clients. One of the ways to create readiness is to conduct exercises and maneuvers, therefore, for this purpose, hospitals must write and practice several scenarios regarding various types of accidents and biological threats.

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Conflict of interest

The authors have no competing interests to declare that are relevant to the content of this article.

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