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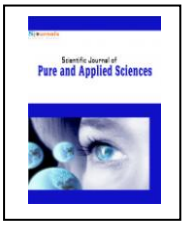

Original article

Criteria for locating health care activities and its evaluation case study: shohada-ye khalij-e fars hospital

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ABSTRACT

Defining precise principles for locating health care activities is very important because these services are to save peoples life. Goal of the process of location in urban land use planning is to present desirable health care services with regard to the standards and hospital locating regulations to avoid deprivation in this sector in different parts of the city. In this research criteria for locating and placing hospitals are presented and health care activities are evaluated in quality from this point of view. Therefore status quo of case study is evaluated by comparing it with four matrixes: compatibility matrix, desirability matrix, capacity matrix and dependency matrix. In this research Shohada-ye Khalij-e Fars hospital as case study is studied by this method. And the results show us that to improve the situation regarding to the neighboring activities we can use some solutions.

1. Introduction

In these recent years sustainable development in urban areas has became one of the most considered subjects among theorists of urban planning. A question what to do? How should we use sources and facilities to provide the needs of presents and future generations and not confront with shortages? How can we use earth as

basis of development and major key word in this literature? How should we organize the relationship between city and nature? Answer to this question and many other questions is possible in field of urban planning in which main structure is urban land-use (Pour Mohammadi, 2013).

Planning Urban land use planning and special organizing of urban activities is based on the demands and needs of this urban population and it forms the use of urban planning(Pour Mohammadi, 2013). Urban land-use planning is a systematic series of proceedings

that are performed to provides human physical and cultural needs which are related to earth(Pour Mohammadi, 2013). In a way that has the maximum benefits and minimum cast of urban land use.

Nowadays in addition to economic views (theory of cast and benefits) that should be considered in urban land-use, because of the complexity of human needs and consequently increasing complexity in urban systems without a systematic attitude and without defining provide criteria for urban land-use and for locating activities based on that, we cannot respond these needs properly(Rahman Pour, 2010). One of the basic human needs that should be responded is health care on whose definition. Hospital is a institute that accepts visitors for a short to long period and provides medical treatment and nursing care for patients, injured people, probable patients, women for delivery and others. Standard is a minimum desirable situation that society can feel satisfaction with (Ebrahim zade, 2010),(Dargahi, 2006). And finally standards influence the hospital services evaluate the results and health services, and clarify if works are done well or not. It helps us to evaluate services and helps us to insure about the process of achievement of goals in hospital. It also helps us to insure that every patient get proper service and care (Ebrahim zade, 2010),(Dargahi, 2006).

Health care services regarding to their nature of activity at first step should be located in a position where has no disturbance for other activities (compatibility). In the second step, location site should fulfill the requirements for the activity (desirability). 3rd step is that they should have a special functional district (capacity). Forth step, to serve desirable services +1 needs accessibility to other sections services and in another hand it needs to be for a way of some other sections.(dependence & separation)(Rahman Pour, 2010).

Hospital in the hierarchy of urban divisions. Settles with regard to functional radins of actions threshold population and reduction of patients travels.

In this article, criticle & standards related to hospital location in the cities are presented. Then in compare with the qualifications of case study (Shohada ye Khalije e Fars Hospital). We qualify that with compatibility. Desirability, capacity, & dependence matrixes and finally we suggest for shortages regarding to evaluation result analysis.

2. Site location criteria for healh care activities

Its very difficult to find a general criteria for site location of urban activities, because of natural, social and … differences in different societies. How ever all these criteria in all societies are for human well fare and comfort and most of the times they have common aspects. These criteria are classified in two groops general and individual(Rahman Pour, 2010).

3. General criteria for site location of urban activities

A) Compatibility: This separates incompatible activities and locates complementarily activities next to each other(Pour Mohammadi, 2013).
B) Comfort Distance and time are two important factors in evaluation of human comfort. by which accessibility to urban services is attained and this is an important goal in urban planning(Pour Mohammadi, 2013).
C) Efficiency: In locating and assigning a place for special activity efficiency and economical aspects should be considered(Rahman Pour, 2010).
D) Desirability: Desirability is attempt to create pleasant spaces while making roads, buildings and urban spaces(Pour Mohammadi, 2013).
E) Health: one of the most important goals of site location for activities is providing health of human environment by applying environmental and sanitary regulations and standards (Pour Mohammadi, 2013).

Safety standards: while locating the activities security of people's lives and their properties and community properties against natural or unnatural. Catastrophes should be considered (Rahman Pour, 2010).

Table 1
criteria for hospital location beside other land uses.

Totally incompatible types of proximity	Rather incompatible types of proximity	neutral proximity	Rather compatible types of proximity	Entirely compatible types of proximity
1. Transportation system(local light road way) 2. Recreational places (quarter park- neighborhood park- play ground) 3. Industrial centers(chemical industry- nuclear facilities- heavy industry) 4. Critical incrustations (huge dam, interconnected road network, oil and gas transfer sites, gas stations, water storage site) 5. Residences with low or moderate population density 6. Educational centers (Kindergarten, preschool, primary school)	1.Transportation system (pedestrian) 2. cultural and athletic center Cinema amphitheater- venue-pavilion - public library-gyms for children and teenagers 3.Densely populated residences 4.Local daily and weekly shipping centers 5.Educational activities (high school and college) 6.Religions centers(tekyeh-hosseinyeh- local mosque-Jami mosque) 7.Sanitary centers(public bath)	1.Industrial parks(light industry) 2.Athletic and cultural centers(stadium- gym) 3.Regional commercial centers 4.Educational centers(university) 5.Health care centers(doctor offices)		1.Health care centers(clinic infirmaries) 2.Transportation arteries (high speed) 3.Urban open spaces 4.Production areas (agricultural fields-gardens) 5.Recreational areas(town quarter park-city regional park) 6.Essential infrastrations(fire station-airpoirt-terminal) 7.State bureaus and police(government building, city hall, police station) 8.F inancial centers(book)

4. Spetial criteria for health care activities location

a hospital in a pragmatic point of view is a place by minimum 15 beds with medical equipment, facilities and services. It also has at least two main parts: surgical department and

ward(Ebrahim zade, 2010),(Dargahi, 2006). Standard means a level of performance that is characterized by measuring scales or is a percapita number in m2(Dargahi, 2006). To specify standards for hospital we should insure that level of quality of service provides patients contentment. Standards regarding to their goals define that the whole

hospital or separate sections what to do and what programs should be offered as a guideline. Finally standards affects hospital construction and evaluate the results and the services(Dargahi, 2006).

5. Evaluation of land use for health care activities

Evaluation of land use for health care activities is basically to insure that their location is logical and proportions are considered(Pour Mohammadi, 2013). This evaluation that is both qualitative and quantitative is to specify the level of land use conformity with criteria and finally it is to figure out compatibility, desirability and ... of land use(Rahman Pour, 2010).

5.1. Quantative evaluation

it is done based on comparison of existing percapita of case study with related standards or by survey of presented future space needs of case study region(Pour Mohammadi, 2013).

5.2. Qualitative evaluation

In this method qualitative properties that are needed for locating and placing a special land use are evaluated. By four matrixes(compatibility, desirability, capacity rand, dependency). These matrixes use information that is obtained from status quo(Rahman Pour, 2010).

6. Compatibility matrix

Activities that are established in a region don't have to disturb other neighboring activities. Based on this principle compatibility of activities with each other is evaluated. And finally some interactive states are charaterized(Pour Mohammadi, 2013).

Table 2
Evaluation of compatibility matrix for Shohada-ye khalij-e fars hospital.

Status quo of neighboring land uses with case study	Residence	Critical infrastration	Transportation system	Open space	Commercial
	Moderate density	Terminal	High speed arteries	Vacant lands and sea	Regional
Land use statuse	Totally incompatible	Entirely compatible	Entirely compatible	Entirely compatible	nautral

7. Desirability matrix

In this matrix desirability between activity and its seating place is evaluated and based on that we can conclude that each activity with regard to it's properties is proper for which site or each site is proper for what activity(Pour Mohammadi, 2013). By comparing these
properties with status quo of the site, the level of desirability will be quired(Rahman Pour, 2010).

Table 3
Standards of site location for hospital.

Land area	At least 25000 m2
Percapita	370 m2 for 1000 people
Normal position	Near regional conter of city
Ground Slope	Flat lands
Geographical properties	Acceptable Soil consistence, proper distances of watercourse and other limitations
Accessibillity	Majer traffic artery
Polution	Stay away of noisy places (minimum distance of bother some industrial is 1 killometer)

Table 5
Evaluation of desirability matrix for Shohada-Ye-Khalie-Fars-bushehr.

Criteria	Land area	Land position	Ground slope	Geophysical properties	Accessibility	Infrastration	Polution	Land use proximity
Standard	☐	☐	☐	☐	☐	☐	☐	☐
Case study	☐	◘	☐	■	◘	☐	☐	☐

☐ Desirable
▣ Rather desirable
◘ Rather undesirable
■ Undesirable

Table 4
Standards of site location for hospital.

Land area	At Least 29000 m2
Percapita	Completely considered
Normal position	The most far away site from down town in the city
Ground Slope	Flate
Geographical properties	This factor was not considered and hospital was built
Accessibillity	Completely considered
Polution	Completely considered
Neighbering activities	(Residential, terminal, regional commercial, vacant lands & sea) rather considered

8. Capacity matrix

Any activity in city has a scale. The structure of a city physically has some levels in scale. If the scale of an activity fits the scale of that site in the city, the activity will act properly(Pour Mohammadi, 2013).

Table 6
Evaluation of capacity matrix for Shohada-Ye-Khalie-Fars-bushehr.

Scale / Activity level	Neghborhood	Sub-quarter	Town quarter	District	Region	City	country
Standard	■	■	■	▣	□	◘	■
Case study	■	■	■	▣	□	◘	Vacant

Dependency matrix

Sometime some activities are incompatible and their proximity leads to interruption the activities(Bahreini, 2007). Nevertheless sometime an activity depends on other activities. For example a residential centers(Pour Mohammadi, 2013). and without these services residents well fare and comfort will not be provided. To ensure about proper proximity with dependent activities and to be certain that it is

Table 7
Evaluation of dependency matrix for Shohada-Ye-Khalie-Fars-bushehr.

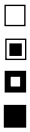
Scale / Activity level	Neghborhood	Sub-quarter	Town quarter	District	Region	City	country
Standard	■	■	■	▣	□	◘	■
Case study	■	■	■	▣	□	◘	Vacant

9. Conclusion

From the results of evaluation of matrixes we can conclude about case study When a activity is incompatible , undesirable, improper, and independent it's location certainly should change. But because this situation doesn't conform with case study and criteria in some aspects are acceptable and about some other not. We should find another solution except moving. We found that regarding to compatibility matrix, 60 percent of activities arround the hospital are entirely compatible, 20 percent are neutral, and 20 percent of themare totally incomputible. With

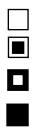
regard to desirability matrix, 62.5 percent of neighboring activities are completly desireable, 25 percent are rather incompatible, and 12.5 percent are totally undesirable. Based on capacity matrix, 16.5 percent of neighboring activities are completely proper, 25 percent are rather proper, 16.5 percent are rather improper, and 50.5 percent of them are totally improper. And also based on dependancy matrix, 14.4 percent of neighboring activities have desirable dependancy, 42.8 percent are completely proper for being away of independent and disturbing activities, and 42.8 percent are totally improper.

If activities sites and their functional district doesn't match urban subdivisions, citizen's comfort is disturbed and many problems is caused for the city(Rahman Pour, 2010).



Proper
Rather proper
Rather improper
Improper

far away of disturbing activities we evaluate that how much proximity of complementary and dependent activities is considered and In another hand we ensure that proper distance of incompatible activities is considered to avoid their disadvantages(Rahman Pour, 2010).



Proper
Rather proper
Rather improper
Improper

In attention to the results of this research, to improve the situation of this hospital som treatments shouldbe done. Things such as raising green areas arround the hospital, enhancing the

accessibility to the hospital for patients, moving settlement’s to somewhere else and … .

Table 8
Resultants of the evalution of the case study (Shohada-Ye-Khalie-Fars-bushehr hospital) in four matrixes.

Matrix type	Possible statuse	Case study status	Case study status percentage
Compatibility	Entirely compatible	3	60
	Rather compatible	0	0
	Neutral	1	20
	Rather incompatible	0	0
	Totally incompatible	1	20
Number of variables in case study		5	100
	Desirable	5	62.5
Desirability matrix	Rather desirable	0	0
	Rather undesirable	2	25
	Undesirable	1	12.5
Number of variables in case study		8	100
	Proper	1	33.5
Capacity matrix	Rather proper	2	66.5
	Neutral	0	0
	Rather improper	0	0
	Improper	0	83.5
Number of variables in case study		6	100
Dependency matrix	Desirable dependent	2	25
	Desirable to be separated	3	37.5
Number of variables in case study		8	100

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