Organizing Golha Square in Marzdaran Neighborhood Using a Child-Friendly City Approach for Children's Mental Health

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ABSTRACT

One of the ways to deal with problems children are now facing is to revive neighborhood values and concepts through informing the significance of play spaces and creating multipurpose entertainment environments. Therefore, it is critical to provide planning for parks and play area for children near the residential places, through the optimal use of natural elements and passageway safety, which is considered to be an important step to creating a safe and healthy neighborhood. Because public open spaces tend to be used in large cities of Iran instead of private open spaces, child-friendly places could provide physical and mental health for children, though they are not seen as absolute necessities for child development. This research was applied in terms of objective and descriptive-analytical in terms of type and methodology. Data were collected through documentary and library methods, accompanied by interviews and questionnaires. In this article, the Golha Square in the Marzdaran neighborhood was investigated in terms of indicators studied in the New York City, United States (e.g., security, presence of recreational spaces, passageways safety, and furniture). Data were analyzed using SPSS software using the one-sample t-test; the sampling method was also used to determine the size of an indefinite population with the items measured based on the Likert scale, indicating a standard deviation of 0.667 for 170 people. The findings demonstrated that the confidence interval between both the upper and lower boundaries of the current situation was slightly lower than that in the average level of items. Concerning the general situation of Golha square in the Marzdaran neighborhood, the confidence interval did not meet a desirable condition as regards child-friendly city indicators. Thus, concerning the research hypothesis, one would say it was significant at the level of 95% confidence, so in this case, the hypothesis was confirmed, indicating the undesirable status of Golha square organization indicators in the Marzdaran neighborhood as regards child-friendly city indicators.

Keywords: Child-friendly City, Organization, Golha Square, Marzdaran Neighborhood.

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1. INTRODUCTION

Children account for a large population in our country, are seen as the future capital, and serve to link the past and future generations in any society as they play an important role in transferring the traditions, cultures, and identity of each society. Accordingly, children and their needs in the urban environment, education, development, and recreation can have a considerable impact on their future. Because children are the most vulnerable members of society, they need more care and sensitivity. Thus, it is imperative to create an environment to be suitable to and harmonious with the needs of children; this program needs to be focused attention by designers and planners of any city and community (Nouri, 2017). As urbanization develops, the city becomes inaccessible to children and less responsive to their needs, thus, confining children's contact with nature and natural environments. This will certainly limit their opportunities to play in urban environments (Esmailzadeh, M. Amiri Nejad, 2014). Interaction with urban spaces accounts for a large part of citizens' daily routines. As the design styles are based on adults' needs, these spaces fail to respond to the needs of children as the most vulnerable and important population of the society because they cannot serve to link the past and future generations. Second, to the home environment are neighborhoods in urban spaces where children interact with each other and the public as a whole; hence, making neighborhoods desirable and designing child-friendly neighborhoods consistent with physical and non-physical factors affecting the children's environment is an important step towards meeting this goal (Abolghasempour, 2017).

2. STATEMENT OF THE PROBLEM

Research on establishing child-friendly cities dates back to the 1980s. A child-friendly city is designed based on the different needs of children, such as safety, security, etc. In the past, many of the children's needs would be eliminated in the community consistent with the structure of cities and villages and some environmental characteristics. The city should be so designed as to meet not only the needs of adults but also those of children so that they feel calm, safe and thus get engaged in urban affairs happily and joyfully (Nahibi, Amini, & Khaksar, 2014). In rich and developed cities, urban planning is driven by structural and environmental issues; however, a "healthy city" does not emerge without children understanding the social, cultural, physical, and psychological aspects and failing to consider them in decision-making and policy-making processes. Accordingly, in the 1990s, the United Nations developed an initiative called "Child-Friendly City", which was approved by member states, committing them to fulfill the mission of this child-centered initiative in cities. This was a key project taken up by an important international organization (Dourandish Langroodi, 2016).

This research was carried out on Golha square in the Marzdaran neighborhood because this area has failed to meet security, leisure, passageway safety, and urban furniture need to satisfy the resident population, especially children. Children need more facilities and more cultural, recreational, service, and tourism spaces; thus plans need to improve and consider the future of these people. Thus, consistent with this important task, the present study aimed to evaluate the plans for this neighborhood in line with the goals of the child-friendly city.

3. THEORETICAL BASICS AND RESEARCH LITERATURE

Children are said to be the most important and vulnerable citizens of the society, who receive little attention in urban design; thus, to better understand types of cities, it is necessary to first define the existing concepts such as a child in this category, and then to determine the child-friendly city and its characteristics.

3.1. Child

A child refers to an immature person and an offspring of a man who has not reached puberty (Moein, 1983); it also refers to an independent being going through the development process. Under such a situation, s/he is said to have not yet reached a certain limit called puberty, but is inherently dynamic and potentially developing. This definition was provided in terms of activities and development a child undergoes (Nasiri Nasab Rafsanjani & Habib, 2009).

3.2. Child-friendly City

A child-friendly city refers to a city where child's needs are met with social, cultural, and architectural conditions of the city being consistent with their requirements; this is while policies, laws, and programs have all underscored the rights of children. The "child-friendly city" approach leads the city toward a direction where children can play an effective role in their city and express their views in urban decisions; this can encourage families and the community to assume responsibility to involve children in important decisions. A child-friendly city is a place where children feel safe and secure and can explore and learn about the spaces around them. A child-friendly city is also defined as a people-friendly city (Karbala'i Hosseini Ghiasvand & Soheili, 2014).

3.3. Why Child-friendly Cities?

The reason why child-friendly cities are established is because of the understanding that cities increase the protection of children's rights. However, many of the cities not ideal for children have governments that do less to protect the community; this is while, establishing urban environments that need to be explored while covering a wide range of issues at different local,

national, and global levels is critical (Esmailzadeh &
Kiani, 2012).

3.4. Child-friendly Urban Space Theory

Urban space is part of the environment which is a
context for carrying out activities while at the same
time playing a very important role in actualizing the
inner talents of the child. Children feel impotent,
powerless, and disappointed when facing spaces
suitable for adults. For this reason, they would rather
be in an environment consistent with their physical
characteristics such as age and height so that they
can meet their needs. To increase trust and reduce the
failures and defects of cities when children's needs
show up, efforts should be made to develop cultural
facilities belonging to children. Urban spaces should
be so designed to provide comfortable amenities for
children to develop and meet their needs for the future
(Shia, 2009).

3.5. Characteristics of a Child-friendly City

Child-friendly cities aimed to involve children in
shaping their surrounding environment; they also
seek to engage them in urban affairs so that they will
find interest in the city (Esmailzadeh & Kiani, 2012).
Accordingly, a child-friendly city is characterized by
the following:
1. Comfort, safety and security,
2. Bond with nature,
3. Bond with the history, culture, and collective identity,
4. Fascination and novelty,
5. Readability,
6. Access to amenities,
7. Presence of child-specific institutions and spaces and
8. Attention to children with disabilities (Azmoodeh,
2013).

3.5.1. Calmness, Safety, and Security

A major part of the sense of security is formed during
childhood and affects the character of children more
than other age groups; this is because children while
being weak, feel insecure when facing various factors.
For example, children in large urban areas feel lost or
overexposed (Kamelnia, 2007). They also experience
some kind of environmental phobia when arriving in
serious spaces. To avoid a sense of insecurity, familiar
elements and forms should be used when designing
urban spaces. The child needs familiar objects from
among new things, like this for younger children
means a deep sense of attachment with their home
and, consequently, entailing a greater sense of security
(Coroner, 2009). Moreover, the sense of security
among children can be improved by designing small
and child-like forms across the city. It is thus important
to pay attention to safety measures when designing
urban spaces. Protecting children from natural, urban
and social ills for their higher vulnerability is a critical
principle to be focused attention by urban planners.

3.5.2. Geometry

The child employs all the architectural images on his/
her sense of instantaneous intelligence and imagination.
Children tend to consider various and irregular forms;
however, s/he should feel comfortable, fearless, and
calm when dealing with large spaces and buildings,
as well as inter-relatedness of life components within
them. Spaces with happy and bright colors and
sometimes colors with irregular forms (e.g., watercolor
painting) instill dreamlike and imaginative senses,
helping the child be emotional, kind, wishful, and
cheerful (Soheil, 2012).

3.5.3. Movement Paths

Paths of different shapes and colors draw the children's
attention and make them have a sense of belonging;
this makes them aware of the shapes as shapes and
forms help children create greater imagination. In
the meantime, simple-form paths are less effective.
The various materials used in path designs, as well as
dimensions, floors, and adjacent walls in the space help
create a sense of curiosity among children.

3.5.4. Furniture

The furniture in the environment should match the
interactions within the child and his/her physical and
mental characteristics, thus stirring the child's curiosity.
When designing children's furniture, one should look
for child-like proportions and visual beauty; this helps
children experience a sense of independence; however,
attention to safety and health should prevent children
from feeling danger and thus help them use the furniture
freely. Using combined and moving components in the
space such as lightweight removable walls, lightweight
folding walls, and lightweight removable furniture can
create the necessary changes in the space.

3.5.5. Play Environment

In their games, children use what is found in their
surroundings as toys, as the environment has a
substantial impact on the child's experience of the
game. For example, a review of childhood games in a
group of adults demonstrated that adults who enjoyed
playing in natural environments were found to be more
interested in wildlife and outdoor leisure time. This
group did not hesitate to choose outdoor work either
(Bixler, Floyd, & Hammitt, 2002). Children's play space
is the best place for developing imagination. Today,
with the development of industrialized cities and living
in small apartments, people, more specifically children
have been kept away from natural open environments,
with children spending most of their time in rooms and
playing with machine tools. Under this condition, the
need for child-specific spaces is felt. Playspaces need
to be considered in urban planning because games are
important factors that help develop a child's mentality.
Pre-school children are more interested in imaginative
games. When playing their games, children expand

their imagination and learn new experiences from their surroundings; children use their surroundings to create new worlds and to cut across the boundaries of the real world in their imagination. For many experts, children's games have an important role in shaping their characters as their imagination constitutes their games. The child's imagination in the critical stages of physical development strengthens his/her skills and interaction with the world around him/her. Some experts maintain that the greater the imagination a person experiences in childhood, the more capable and more knowledgeable s/he will be in solving problems in adulthood. Natural space: Children see the world around them as a kind of playground, and that is underlined by the following:
1. It is unendingly diverse;
2. It is not man-made and
3. It instills a sense of immorality.
Natural spaces are the environments where the basic elements are water, tree, and living creatures. An outdoor (open space) environment is a large area where children can play while closed spaces are complicated and unexplored areas. These spaces can help develop children's imagination and independence. Concerning the need for exploring spaces, Altman and Moore maintain that the need to arouse emotions and enjoy new and diverse spaces as well as understanding the quality of exploring space could help develop children's imagination and their independence when dealing with life affairs. Children create their complex environment using simple and hard-to-explore objects (Mozaffar, Hosseini, Bagheri, & Azemati, 2007).

4. Global Experiences of a Child-friendly City

Global experience, as a case study, demonstrate that measures should be made to prepare children to face new realities; this is done by making appropriate design patterns and training the children in the correct behaviors. In the following, successful global experiences in the development of this type of cities are shown.

4.1. New York, U.S.

In the following neighborhoods in New York, the principle of child-rearing and character development, as well as child behavior correction in the city, are emphasized.

4.1.1. PS 23 Sound and PS 244 Sound Neighborhoods

These two neighborhoods were designed in 1950 by

the Department of Architecture and Urban Planning (J.S. et al.). John Stephanoe, who graduated from the School of Architecture, Ohio headed the group. Urban spaces and furniture deployed in these two neighborhoods, situated in the Brooklyn area of New York City, draw upon the training of sound phenomena and the experience of sounds combinations to create some kind of music in the environment, coupled with providing security for users of these spaces. The design aimed to provide safe and effective urban spaces and furniture to train children about the environment so that they learn and gain different experiences on various aspects of acoustic physics.

The simplicity of form and design in these two neighborhoods is quite clear. Residential buildings take on two-, three- or four-story apartments, with some areas, especially the center of the neighborhood, one-story buildings are also seen. Residential house spaces in these neighborhoods are very small and lack yards; therefore, in these two neighborhoods, recreational and educational urban spaces function as a unit of the yard. It should be stated however that in this neighborhood, different urban spaces and furniture are considered for different age groups of children because as the Child Development Theory puts it, children of different ages enjoy different physical and mental capacities, and the more they grow, their physical abilities and their mental growth increase. Also, childhood sees a much faster physical and mental development than adulthood. Therefore, children's physical and mental experiences are defined based on their abilities at different ages, and, for this, more complex games are intended for older children, and simpler ones involving scientific experiences through easier methods are aimed at younger children. Also, children differ when it comes to playing solo and group games at different ages, so urban spaces and furniture in this neighborhood are so designed to provide for the flexibility of children of different ages. This helps children use these amenities both individually and collectively.

4.1.2. General Design Process Objectives

- Attention to the identity characteristics of neighborhood people, more specifically children;
- Review of training, history aspects, and global experiences of urban spaces;
- Locating suitable places to design training spaces for children
- Meeting children's basic needs to use these spaces
- Making training spaces and their furniture more flexible in the neighborhood to be used by different age groups (Nasiri Nasab Rafsanjani & Habib, 2009).

Fig. 1. Sound Transfer System in New York City
(Simpson,1997)

Fig. 2. Echo Room in New York City, 1993
(Simpson,1997)

4.1.3. Four Main Streets of New York

Measures were taken in this neighborhood to design some training spaces for children so that they have the opportunity for both training and recreation. The following are key points considered as the main design and planning criteria:
- Engaging children in survey polls and design criteria;
- Attention to providing security in the area;
- Providing recreational spaces for children;

- Providing an environment for children to gain experience and learn from the city areas;
- Providing children-specific urban furniture design, also intended for adult uses;
- Securing spaces using fixed edges of pavements for the safety of children, and
- Classifying the function of roads and communication spaces considering the security and calmness in the neighborhood. In the meantime, roads are divided into main routes and dead ends (Amiri & Shokouhi, 2014).

Fig. 3. New York City Facilities for Children
(Amiri & Shokouhi, 2014)

Fig. 4. New York City from Children's Perspective
(Amiri & Shokouhi, 2014)

5. RESEARCH OBJECTIVES

This research had the following two objectives:
- Organizing Golha neighborhood based on the criteria of a child-friendly city set by New York City (e.g., security, recreational spaces, the safety of spaces and passageways, and furniture)
- Locating and creating safe paths for children to frequent, play, and do daily activities and social interactions

6. RESEARCH HYPOTHESIS

Golha neighborhood in the Marzdaran area did not match the standards of a child-friendly city (e.g., security, recreational spaces, the safety of spaces and passageways, and furniture) set in New York.

7. AREA OF STUDY

Marzdaran Boulevard, approximately 3.5 km long, connects the Sheikh Fazlollah Nouri Highway east of Tehran to the Ashrafi Isfahani Highway west of

Tehran. Marzdaran neighborhood leads to Ayatollah Hakim Highway from the north and Jalal Al-Ahmad Highway from the south. Marzdaran neighborhood is situated in district 2 of Tehran. According to the 2016 census, the children's population in Tehran amounted to 138993 with the Marzdaran being one of the most populous areas in terms of the number of children, as statistics suggested. Pardisan Park in this area is a large and forest-like park that also has a zoo with high biodiversity. There are many convenient parks and gardens inside Marzdaran, including Simorgh Park located in Homa Town, Nahid Park located on Nahid Street, Karimi Park located on Golha Street, Homa Town Park located in Homa Town next to Islamic Azad University which is used and welcomed by students, Golha Park on Abolfazl Street and next to the Golha Square and also Shokoufehaye Enqelab Park located in Ashrafi Isfahani intersection as well as Laden Park between Anarestan Park and Al-Mahdi residential complex. Golha Square is located in area 2 and district 2 of Tehran, which is 9412253 square meters and is home to 129127 people.

Fig. 5. Location of Golha Square from Marzdaran Boulevard

8. RESEARCH METHOD

The research method was "applied-developmental" from an objective point of view, and "descriptive-analytical" from a nature perspective; it was also a cross-sectional study in terms of time. Data were collected in two stages. First, documentary and library methods were used to find the research literature, then, its theoretical aspects were, as suggested by experts, reviewed so that the research would enjoy some experimental achievements. At this stage, all available documents on organizing the Golha square, Marzdaran neighborhood were collected using the child-friendly city criteria as set in New York City, USA. In the second stage, the field study method was also examined, in addition to library and documentary methods.

The statistical population of this study consisted of children and adults frequenting the area. Because it was impossible to access the exact size of the statistical population, the indefinite population sampling method was used. The questions were measured on a Likert scale. The standard deviation was 0.667.

$$\delta = \frac{\max(x_i) - \min(x_i)}{6} = \frac{5-1}{6} = 0.667$$

The sample size was obtained through the following formula.

$$n = \frac{z^2 \alpha_{/2} \delta^2}{\varepsilon^2} = \frac{(1.96)^2 (0.667)^2}{(0.1)^2} = 170$$

Therefore, the sample size was 170 people.

Data were analyzed using SPSS software using a one-sample t-test. Golha Square in the Marzdaran neighborhood drew upon the child-friendly city criteria, which were collected using a questionnaire and interviews with 18 template questions on a five-option Likert scale.

9. RESEARCH FINDINGS

As global experiences indicate, a study of the Iranian culture as well as an objective and field investigation were required to design a city suitable for children. Thus, several indicators were considered, which will be discussed later.

9.1. Testing the Hypothesis

The four child-friendly city indicators (e.g., security, creation of recreational spaces, the safety of passageways, furniture) were used via a one-sample t-test to organize the Golha square, Marzdaran neighborhood. For this, each of the four indicators of organizing the Golha square, Marzdaran neighborhood was measured via child-friendly city criteria, and finally, upon calculating the indicators, the general situation was obtained as shown in the table below.

Table 1: Organizing the Golha SQUARE, Marzdaran Neighborhood via CHILD-friendly City Criteria

Variable of Evaluation of Indicators for Measuring Golha Square, Marzdaran Neighborhood-based in Child-friendly City	Test Value: 3						Evaluation
	T	Sig.	Average dif.	Value	Confidence Level		
					Lower Boundary	Upper Boundary	
Recreational Spaces	2.95	0.000	0.162	383	-0.231	-0.121	Undesirable
Security	1.60	0.000	0.132	383	+2.51	+1.175	Relatively Desirable
Safety of Passageways	4.23	0.000	0.120	383	-1.27	+2.37	Relatively Undesirable
Furniture	3.63	0.000	0.890	383	-8.79	-2.18	Undesirable

A comparison of the confidence interval and the average difference of the indicators (e.g., security, recreational spaces, the safety of passageways and furniture) reveals that the confidence interval at both upper and lower boundaries is slightly lower than the average items. The confidence interval from the general situation of organizing the Golha Square in the Marzdaran neighborhood via the child-friendly city indicators was not at an undesirable condition. Therefore, the research hypothesis is said to be significant at the confidence level of 95%, suggesting the hypothesis was confirmed and showing the indicators as being undesirable.

10. DISCUSSION AND CONCLUSION

Finally, one would argue that more research on a child-friendly city is needed. The consideration of child-friendly city indicators, especially in projects associated with children's mental health, as well as attention to their needs and wants, not only provide an environment consistent with children's wishes but also an environment that would attract them to today's design styles; thus, eliminating their fears. Modern urban architecture is based on adult aesthetic principles which are aimed at improving the quality of citizens' lives, mainly excluding children. Therefore, cities have been designed consistent with adults' needs; if children are not taken into account, they could be disappointed and cannot adapt themselves to the urban designs. Thus, city planners are recommended to take up the issue of children in designing city infrastructure. As a result, to meet the goal of a child-friendly city, efforts at various levels, including security, attractiveness, cultural, social levels are required. The situation of urban neighborhoods, including the Golha square, Marzdaran neighborhood, can be improved by such measures as

providing safety for streets and sidewalks near the place of residence, enhancing security, increasing service levels including play and recreation spaces, and increasing furniture in the area; this can help children have more fun and have an intimate relationship with their friends in a healthy environment. As mentioned in this research, some solutions such as the ones that will be mentioned below for the Marzdaran neighborhood can be suggested:

- Creating a dynamic environment in the Marzdaran neighborhood can help families have a happy time with their children;
- Creating a sense of attractiveness and fascination in children's spaces, pavements, and pedestrian lanes, etc., using visual and three-dimensional arts, as well as lighting and coloring the Golha square and squares;
- Providing the necessary lighting by using lighting and different uses at night to increase the sense of security for residents, especially children, in the Golha square and alleys of Bostan 2, 3, 4 and Bostan 6;
- Installing children's traffic signs on the street and easing down traffic jam of Abolfazl Street;
- Creating a suitable pavement in Abolfazl and Laleh 35 Meters streets;
- Using natural materials at passageways to get the child to communicate more with nature and to raise the level of children's creativity;
- Using flexible equipment at the Golha square and introducing different means (via changing the dimensions, shape, etc.) for different age and sex groups of children and adults. Because this solution can place children and adults alongside each other and create spaces for the residents to sit next to the spaces designed for children, thereby public supervision over children is provided.

- Using different colors and shapes in passageway pavements around the square, they help children be familiar with functional designs such as demarcation of the area, orientation changes direction, differentiating rest areas, and so on.
- Considering the location of Golha Street in the Marzdaran neighborhood, this opportunity can be used to create a green path and also to turn the Golha square into a green space by maintaining its current shape; thereby increasing the presence of children and parents. Because children have increased their presence, it is necessary to reduce the speed of cars crossing the street, which streets need to be paved.
- Controlling the entrances of the neighborhood and streets leading to it so that children can play and residents gather.
- Because speed rates have been set at Golha Street, speed bumps should be erected in all entrances that lead to this street, so that cars can enter this access at a safe speed.
- Designing bicycle lanes in Golha Street and side streets leading to it can increase child safety; this is because it builds a cycling culture in the neighborhood, reducing the movement of cars there.
- Considering special pavements that serve as a main artery for the child to access different parts of the neighborhood and to link the pedestrians to education centers without crossing the street.

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