Urban Park Design in Iran: Investigation of Factors Affecting Users' Psychological Benefits

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ABSTRACT: Park design in Iran has followed the traditional European style since the Qajar dynasty. The familiarity of Iranians with the spirit of Persian gardens and the low quality of the newest parks is such that users prefer ancient geometrical Persian gardens. Today, those responsible for the design of urban green spaces lacking examples differing from the traditional and thus they are in need of an adequate set of guidelines for how to design for present conditions, users, and their needs. This research focuses on the relationship between park design components and users' psychological restoration regarding their preferences and perceptions to increase the quality of parks, diminish vandalism, and increase user agency. Psychological restoration is the likeliness that people will be able to rest and recover their ability to focus. A random sample of 100 Tehranian residents was taken by presenting them with images depicting 6 urban parks from around their city. The results were analyzed by grouping into categories: 1-similar activities and 2-by counting and categorizing the individual descriptions of components (frequency of words) contributing to restoration likelihood. Findings showed that the categories mentioned most frequently for high levels of restoration were natural categories including trees, shrubs, grasses, flowers, and water. Findings with low levels of restoration and recovery consisted of negative contextual conditions and the absence of nature such as high rise buildings around the parks, lack of trees, and crowds of people. The activities imagined more frequently were playing and other physical activities, social activities, and relaxation.

Keywords: Tehran, Iran, Urban parks, Psychological restoration, Users' preferences and perceptions, Nature, Design guidelines

INTRODUCTION

Parks and nature are important settings for a number of public-health related reasons, in that they offer psychological restorative experiences, physical activity and social interaction (Nilsson et al., 2011). This research focuses on the relationship between park design components and users' psychological restoration. Psychological restoration is the likeliness that people will be able to rest and recover their ability to focus. Furthermore, it seeks to develop an understanding of park user preferences and perceptions in the dense metropolis of Tehran in order to increase the quality of designed public spaces, diminish vandalism, and increase user agency.

Psychological restoration is the likeliness that people will be able to rest and recover their ability to focus (Nordh & Østby, 2013). The present study is based on the attention restoration theory (Kaplan & Kaplan, 1989).

In the present paper, we explore the use of urban public parks, and how components of a park may promote, or prevent, the potential for psychological restoration through stays in the park.

Tehran is one of the largest cities in the world with a large concentration of population and resources. There are many social and environmental problems related to the growth of population in the last 30 years (Faizi, 2006). One of the fundamental problems in most of Iranian cities is the lack of green spaces (Lotfi, Mahdi, & Mohammadpour, 2014). Recent studies indicate that the amount of green space in Tehran should be 35 square meters per person (Amackchi, 1995) whereas current green space capital currently is only 12 square meters. The reduction of green space within cities means that the accessible nature is pushed outside the city limits and this push can have a negative influence on public health and it is known that distance to nature has an influence on frequency of use, where longer distances leads to less frequent use (Grahn & Stigsdotter, 2003; Nielsen & Hansen, 2006; Neuvonen, et al., 2007)

A study found a relationship between self-perceived stress and access to green space (Stigsdotter et al., 2010). Evidence shows how the urban nature should be designed to enhance

people's use of it and that this would help practitioners and politicians develop strategies for building future cities that incorporate health promoting components (Nordh & Østby, 2013).

In most cities in Iran, there are spaces designed as gardens, parks and green spaces but their designation and construction are based according to designers' personal taste and users' needs have not been taken into consideration. Studying examples of contemporary parks emphasize the point that Iranian society has created gardens and had one of the most important styles of gardening in the world, but doesn't have a specific style to design parks and gardens today. It seems that park design in Iran has followed the traditional European style since the Qajar dynasty. Today, designers responsible for the design of urban green spaces lack precedents differing from the traditional and thus they are in need of an adequate set of guidelines for how to design for present conditions, users, and their needs (Mansouri , 2010). Studies show that this ever-increasing inattention to the varied preferences of stakeholders has resulted in a decrease in pork quality and a diminished sense of ownership that in turn has exacerbated existing social and infrastructural problems (Daneshpour & Mahmoodpour, 2009).

Visual assessments of park photos showed that natural components such as grass, trees and shrubs were predictors of mental restoration likelihood. A sample of the photos was used to study which components have more influence on resting and recovering in parks. Using eye tracking technique explored whether vision could explain the environmental assessments (Nordh, et al,, 2012). To follow up on the previous studies the main objective of this study is to assess what environmental components people think will contribute to the restorative experience of a park in the arid climate of Tehran. In addition, we want to explore what types of activities they would want to pursue in the parks depicted in the photos.

MATERIALS AND METHODS

Seventy images of urban public parks were used. Researchers captured as much of each park in one photo. The density of vegetation in the parks, varied from very dense (mostly grass, many trees, shrubs and plants) to very sparse (mostly hard surfaces and very little vegetation). All photos were from urban parks in Tehran and taken during the summer under relatively similar weather conditions.

Participants and Procedure

A random sample of 100 Tehranian residents was taken by presenting them with images depicting 6 urban parks from around their city. These represented a broad range of pack styles, vegetation density and type. We asked participants to rate the probability of relaxing and recovering in the parks presented, the activities they could imagine performing while in the spaces and what amenities and appurtenances contributed to high and low levels of restoration.

10 data collection sessions were performed, each with 10 participants. All sessions were performed in each park's lecture room, and the park photos were presented with a projector on a screen. The participants were seated in a single row approximately four meters in front of the screen. They were informed about the procedure and read through the instructions. The participants were presented with the following scenario: They were to imagine being on a walk in a large city, being mentally tired, and looking for somewhere to sit down and rest for a little while. The participants had to assess, on a scale from 0 to 10, how likely it was that the park presented on the screen would be a place where they could rest and recover. The photos were shown for 15 seconds each. In addition to the visual assessments, after the photo session, the participants were asked to write down some examples of which components in the park photos contributed to their high versus low ratings on restoration likelihood. Further, they were asked about what types of activities they could imagine doing the types of parks presented in the photos.

Analaysis
Categorization of Components and Activities

Individual explanations of which components contributed the most to high versus low ratings in regards to restoration likelihood were counted and grouped into categories of words/ components describing similar properties. The number of components (frequencies of words) in each category gave an indication of how important that category was for assessment of restoration likelihood.

Words used to describe what components contributed the most to high ratings on restoration likelihood were grouped into ten categories. One example of a category is many flowers/ plants, contains components such as flowers and variation in vegetation. All categories are presented in a frequency table in the "Results" section. For low ratings on restoration likelihood, words were grouped into ten categories. One example of a category is 'a lot of traffic'. This category contains components such as 'cars', 'proximity to a road', 'traffic' and 'traffic noise'. The activities that the participants indicated they could imagine performing in the urban parks depicted in the photos were also grouped into categories of similar activities. Activities were grouped in seven categories. One example of an activity category is 'relaxation'. Included in this category are activities such as 'rest', 'meditate', 'enjoy the silence', and 'sleep on the grass'.

RESULTS AND DISCUSSION
Participants

The participants in our study reported visiting parks similar to those in the photos relatively frequently: many times a week (n= 16), at least once a week (n = 39), a few times every month (n = 36), a few times every season (n = 6) and never (n = 3). Most of the participants were familiar with some of the parks in the sample (n = 79), fifteen were familiar with many of the parks, and only four were unfamiliar with the parks. Regarding

the question on participants' professional knowledge about parks/nature, only three could be registered as experts.

Frequency Analysis

The most frequently mentioned categories contributing to high ratings on restoration likelihood have been: 'trees and shrubs' followed by 'water features', 'a lot of grass' and 'a lot of flowers/plants' (Fig.1). Analyses of the categories, giving low ratings on restoration likelihood revealed that 'many and ugly buildings', 'too few shrubs/trees', 'many people' and 'a lot of hard surfaces' were the most commonly described categories (Fig.2).
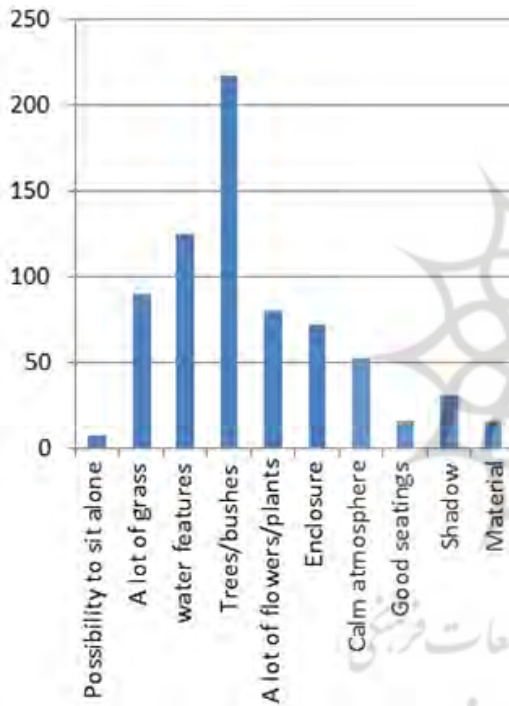

Fig.2: The categories that contributed the most to low ratings in regards to restoration

Fig.1: The categories that contributed the most to high ratings in regards to restoration
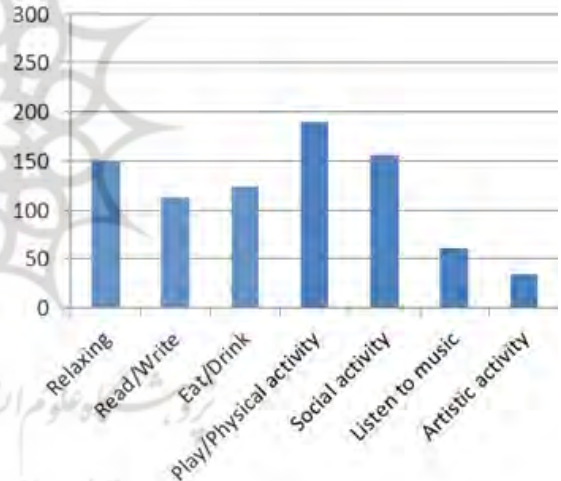
Fig.3: The types of activities participants could imagine performing in the urban parks

Frequency Analysis of Activities

Among the activities mentioned as being possible to perform in the types of parks depicted in the photos, we found that 'play and physical activity' have been the most frequently mentioned categories. This was followed by 'relaxation' and 'social activity' (Fig. 3).

As mentioned before, to follow up on the previous studies, the main aim of the present study was to assess what environmental components people think would contribute to the restorative experience of a park. In addition, we explored what types of activities they could imagine doing in these parks depicted in the photos.
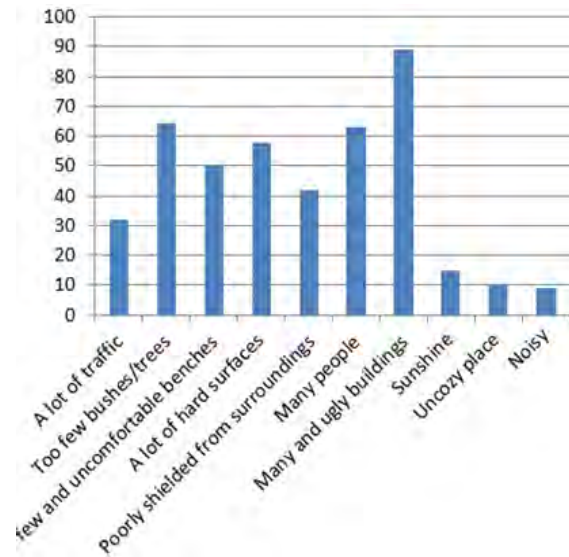
The results show that the categories that contributed the most high ratings in regards to the restoration likelihood in urban parks were the "natural" categories. These results are in line with the attention restoration theory (Kaplan, 1995) and with results from Nordh et al. (2009), who found that natural components such as grasses and trees were predictors of restoration likelihood. The point is that amongst these natural components, 'Water features' has the second place as Iran is a country with an arid and hot climate. This leads citizens to think that water, as a natural element besides 'trees/shrubs', can help mental restoration and recovery. In the Iranian culture, natural elements such as water and plants are the evidence of Allah on

earth and the most beautiful composition of these elements can be seen in Persian Gardens (Hobhouse, Hunningher, & Harpur, 2004).

In addition to the natural categories, the participants expressed the importance of enclosure, calm atmosphere, shade, good seating and materials. All examples of categories related to park design or the surrounding of the park. As Appleton (1975) found, being able to see others without being seen or disturbed may affect people's ability to relax, the need for enclosure or good seating may signify the need for control and safety. An interview before starting the research procedure indicated that 90 percent of the participants visited traditional Persian gardens, particularly in Kashan and Isfahan, before and mentioned to "Fin" and "Chehel-Sotoun" species, indicating that they are familiar with Persian gardens. One of the basic features of a Persian garden is the enclosure of the cultivated area. The 'Persian Paradise Garden' gets its name from the Old Persian word paradise, meaning an enclosed area and the enclosed garden, was symbolizing the Garden of Eden and a completely different world (Falamaki, 2010). This concept of inside and outside is one the most important concept in creating a sense of place in Persian gardens. Thus, generally, enclosure in Persian gardens has different functions: climatic issues, privacy safety (Medghalchi, Ansari, & Bemanian, 2014). Regarding that, the enclosure can also create a feeling of entering a whole other world, which could trigger restorative experiences (Kaplan, 1995).

In the assessment of which components contributed most to the low ratings of restoration likelihood, we found categories describing the park's surroundings, lack of vegetation and disturbance. Examples of categories related to the park's surrounding are: ugly buildings surrounding the park, poorly shielded from the surroundings, a lot of traffic. Traffic in proximity to a park also has a negative effect on the soundscape in the park (Lam, Ng, Hui, & Chan, 2005). Zannin et al. (2006), conducted a study of noise level in parks in Curitiba, Brazil, and concluded that parks should not be located in proximity to main city roads. As Tehran is one of the 10 largest cities[1] and among the most polluted in the world[2], if parks are built near the main roads or are not shielded enough from their surroundings, they will be exposed to both visual and acoustic disturbance from cars. Thus, taking a park's surroundings into consideration when planning new parks, or rehabilitating already existing parks, is of great importance to how the park will be experienced. Urban areas are almost always exposed to varyingly high noise levels. One way to reduce experiences of noise within parks could be to mask negative sounds by adding positive sounds, such as the sound of water from a fountain located near a seating area (Francis & Marcus, 1998). Another principle could be to elaborate on how the park is enclosed something that would also be in line with the present participants' wishes.

Examples of categories related to lack of vegetation are: a lot of surfaces, too little grass and too few plants/flowers. This is in line with results from Nordh et al. (2009), which showed that the amount of vegetation is of importance to assessments of restoration likelihood, and that hard surfaces have a direct negative correlation with restoration likelihood.

Examples of categories related to disturbance are: many people, few and uncomfortable benches, sunshine, uninviting places and noisy atmosphere. The presence of other people in the park can be both a positive and a negative factor. Too many people can signify crowding, whereas too few can signify an unsafe atmosphere. Included in this category, a lot of people also used phrases such as 'un-cozy place', which indicates the need for privacy.

The qualities of parks affect the types of activities that can be done with them (Nordh et al., 2009).

The activities, participants reported they could perform in the parks presented in the photos were playing/physical and social activities. Physical activities are categorized into social activities. Short informal contacts have been found to be highly important to people's well-being (Whyte, 1980; Thompson, 2002) and should be considered in urban planning and on a design level, such as the placement of benches (Gehl, 2003). Public spaces are of importance because they offer the opportunity for high levels of interaction between persons of different social and ethnic backgrounds (Lofland, 1998; Fainstein, 2005). Such interactions can provide relief from daily routines and alleviate tensions in a neighborhood (Dines & Cattell, 2006). R egarding to the previous section, it can be said that people live in such a large and populated city need both privacy and sociality when they spend time in public parks. Most of the people consider urban spaces as a potential place to make friendships (Maleki, Rahimi, Noori, & Hatami, 2015).

Individual activities such as relaxing were also mentioned. Eating/drinking and reading/writing, which were two of the most frequently mentioned category. They can be both an individual activity, such as eating lunch alone in the park. Individual activities usually demand a smaller space compared to some social activities, such as play and physical activity. Thus, these activities were less likely to be mentioned in an urban public park. Nordh and Ostby (2013) found that in small parks (pocket parks) individual activities are more likely to be mentioned.

For future research it could be of interest to go deeper into design details and take gender differences in environmental preferences into consideration, for example elaborating on the design features found to be of importance in this study.

CONCLUSION

The presence of natural assets (i.e. urban parks and forests, green belts) and components (i.e. trees, water) in urban contexts contributes to the quality of life in many ways. Besides important environmental services such as air and water purification, wind and noise filtering, or microclimate stabilization, natural areas provide social and psychological

services.

The presence of trees and grass in outdoors common spaces may promote the development of social ties also found out that greenery helps people to relax and renew, reducing aggression. This study shows that natural components such as grass, flowers, water and trees/shrubs are the most significant qualities in assessment of the likelihood of restoration in a park. Additionally, the park design, regarding enclosure and location of seating, and the park surroundings also has positive impact on restoration.

Urban parks can provide a number of activities of importance mainly for restoration, but also for social and physical health. Results from the present study improve our understanding of the value of urban parks and contributes ideas that can be used by professional planners or landscape architects in cities where many green spaces are being built.

Urban parks should be designed with natural components, shielded from disturbing surroundings and furnished with some seating to promote opportunities for restorative experiences and to function as social meeting places.

Despite the limitations related to choice of participants and the sample of photos, we believe the study contributes important information to the bigger picture of designing urban parks for psychological restoration. This information can help landscape architects to design more beneficial parks for people, especially in countries such as Iran with hot and dry climate and parks designed disorderly. For future research it could be of interest to go deeper into design details, through for example elaborating with the design features found to be of importance in our study. This could for example be done in a Virtual reality environment or in an intervention study of existing parks.

ENDNOTES

1. http://en.tehran.ir/Default.aspx?tabid=103
2. http://iran-times.com/iran-has-most-polluted-cities-in-world/

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