

## The Role of Urban Green Spaces in Mood Change

<sup>1</sup>Mahdieh Abkar, <sup>1</sup>Mustafa Kamal M.S., <sup>2</sup>Manohar Mariapan, <sup>1</sup>Suhardi Maulan, <sup>3</sup>Mehdi Sheybanic

<sup>1</sup>Department of Landscape Architecture, Faculty of Design and Architecture, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia

<sup>2</sup>Department of Forest Management, Faculty of Forestry, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia

<sup>3</sup>Department of Landscape Architecture, Faculty of Architecture and Urban Planning, Universiti Shahid Beheshti, Tehran, Iran

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**Abstract:** Urban green spaces have been found as environments that contribute to stress reduction and mood change in several countries such as the West and Taiwan, however there are few studies on people's perception of the role of urban green space (UGS) in arid regions in Iran. In this study a survey was conducted among visitors of an urban park in the city of Yazd in Iran. They answered questionnaire about use rating and obstacles on the use of UGS, people's motives for visiting UGS, people's perception on the effect of UGS on mood change. The results showed that a) lack of green space is one of the greatest obstacle for visiting green space, b) closeness to UGS had a prominent role c) water and green space are two physical features that affect mood change. This research demonstrated the role of visiting UGS on mood change in urban environments; this outcome is usually a basis of positive mood changing disposition and valuable outcomes that are although, non-consumptive, important in the lives of individuals.

**Key words:** urban green space, stress, mood change, health

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### INTRODUCTION

Nowadays, many communities happen to be dealing with growing issues coping with stress-related illnesses. City lifestyle stress generally such as environment strain, friends and family stress and do the job stress, have resulted in frequent stress-related ailments. Stress is probably the biggest factors that cause health issues within people (Velarde, Fry *et al.* 2007).

Individuals suffer from different stress-related illnesses for example burnout syndrome, sleeplessness and exhaustion, depression, feelings of panic, and so on. Stress over a lengthy time period may well have serious damaging outcomes. So we ought to handle stress well and there have to also be opportunities for recovery (Ulrich 1999; Grahn and Stigsdotter 2003; Stigsdotter 2004; Ottosson and Grahn 2005). Numerous scientific studies have indicated relationship between human health and nature are influenced in a positive way by his spending time in natural surroundings, wild nature as well as contained gardens (Marcus and Barnes 1999). Environments in the city, like parks, gardens and UGS, could reduce stress as well as present opportunities for recovery (Ulrich 1983; Ulrich 1984; Kaplan 1989; Kaplan 1992; Marcus and Barnes 1999).

In the course of history, the relationship between nature and healing had been steadily replaced through progressively technological techniques and the notion that use of nature might help in recovery dropped most of its importance (Marcus and Barnes 1999; Ulrich 2002). Nonetheless, inside past two-and-a-half decades most of these old fashioned approaches associated with linking nature and wellbeing outcomes have re-appeared as a matter of great interest within the area of human wellbeing. Study has produced a fairly abundant literature in order to describe the particular methods by which natural along with other surroundings impact individual wellbeing. Ulrich's stress reduction theory suggests the fact that exposure to natural environments leads a decline in stress. The final results found here propose that nature (of any kind) is associated largely with relaxation (Ulrich 1984; Ulrich 1999). Researchers discovered that verdure and nature as such increase the speed of human beings' recovery from emotional stress. Far more lately, these previous final results are already followed up as well as reinforced through new findings (Hartig, Boeoeck *et al.* 1996; Herzog, Black *et al.* 1997; Ulrich 1999; Ulrich 2002; Grahn and Stigsdotter 2003).

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**Corresponding Author:** Mahdieh Abkar, Department of Landscape Architecture, Faculty of Design and Architecture, Universiti Putra Malaysia, Serdang, Selangor, Malaysia  
E-mail:mabkar53ir@gmail.com

Researchers have argued that natural settings together with plants in addition to water induce relaxed and significantly less stress filled dispositions in observers compared with city views with no plants (Ulrich 1984; Kaplan 1989; Chiesura 2004; Regan and Horn 2005; Karmanov and Hamel 2008).

Urban areas have lately encountered a decrease within the quality as well as amount of their green space. Rapid urbanization has steadily separated folks from encounters of nature (Wilson 1984; Miller 2005). UGS are critical in urban centers due to the possibilities they provide individuals in experiencing nature. Getting in contact with nature has psychological positive aspects by minimizing stress (Ulrich 1984; Ulrich, Simons *et al.* 1991), restoring attention (Kaplan 1989), improve reflection, rejuvenate the urban resident, and offer a sense of peacefulness and peace (Kaplan 1985) and by positively affecting self-regulation and restorative healing experiences (Korpela, Hartig *et al.* 2001; Hartig, Evans *et al.* 2003; Korpela and Ylen 2007; Van den Berg, Hartig *et al.* 2007).

The hypothesis about the regenerative function of natural environments has long been examined in several scientific studies. For instance Ulrich (1984) discovered that recovery takes place quicker in hospital patients who are able to view natural environment such as trees through their windows than those patients whose views are restricted. Studies after Ulrich (1984) yielded similar results validating the supposition that natural environments influence mental and psychological health positively. Further, present-day studies on the utilization of urban forests and parks strengthens notions about the stress-reduction benefits of natural environment on mental health (Hartig, Mang *et al.* 1991; Hartig, Boeoeck *et al.* 1996; Conway 2000; Hartig, Evans *et al.* 2003; Staats, Kieviet *et al.* 2003; Hartig and Staats 2006).

Research has likewise observed that urban dwellers do not necessarily desire green spaces for particular relaxation; even so, they report their most essential factors for utilizing green space as get in touch with design, breathing fresh air, and enjoying freedom (Kaplan, 1983). Findings also reveal that brief nature experiences offer far better psychological gain than a similar encounter in an urban environment (Hartig, Book, Garvill, Olsson & Garling, 1996). In many studies amongst UGS's visitors, a substantial relation was observed between use of the UGS and perceived positive state of health: individuals who used UGS often were much more likely to report good health compared to those who did not (de Vries, Verheij *et al.* 2003; Grahn and Stigsdotter 2003; Nielsen and Hansen 2007). Further, proximity from the residence to the nearest available green urban space is of tremendous significance for how often individuals explore such places. The farther from the residence one has to trek to locate the closest UGS, the a lot more seldom you visit such locations. As well as the far more often individuals visit such locations, the less frequently they feel stressed, upset and fatigued (Grahn and Stigsdotter 2003; Stigsdotter 2004; Nielsen and Hansen 2007). Furthermore, it has been recently shown that individuals' blood pressure reduces right after only a couple of minutes of strolling within a natural environment (Hartig and Evans 1993). Similarly, Nielsen, *et al.*, (2007) reported that access to a garden or short distances to green areas from the dwelling are related with lower stress and a lower probability of obesity (Nielsen and Hansen 2007).

An epidemiological research by Maas *et al.* (2006) showed a strong link between health and green spaces between one and three kilometers of people's residences (Maas, Verheij *et al.* 2006). Even so, outcomes recently similar research showed that almost half of the participants did not utilize their closest green space. Whether or not participants utilized their closest green area the most depends mainly on area size, distance to the location and factors that are most likely to express a reduced ability to move; post retirement years, small children and failing health (Schipperijn, Stigsdotter *et al.*; Schipperijn, Stigsdotter *et al.* 2010).

Today, correlation between people's health and use of UGS has been found in developed countries. UGS is today recognized to be a restorative healing environment which is useful for positive change (Karmanov and Hamel 2008; Korpela, Ylén *et al.* 2008; Nordh, Hartig *et al.* 2009). In Iran, particularly in dry and warm areas, there is presently an important requirement to know exactly how efficient UGS is on mood change. Exactly what is the link between people's experiences and mood state? How does being from the UGS impact people's feelings? Results demonstrated that the moods and feelings triggered in UGS are recognized by people as the mainly essential contributing factors to stress decrease and mood altering. All these are the primary research inquiries attended to by this particular investigation. The researcher investigated obstacles that people encounter on the use of UGS, people's motives for visiting UGS, people's perception on the effect of UGS on mood change. Findings from a survey study conducted in Yazd city, in the summer of 2009, are presented and discussed.

## **2. Method:**

### **Study Area:**

The land as well as the city of Yazd is situated on the middle section of the Iranian plateau. The city of Yazd, which is 420 miles (670 kilometers) from Tehran, is the capital of Yazd Province. Situated near the central mountains and not near the Caspian Sea as well as the Persian Gulf, Yazd features a weather which usually looks like desert climate. The actual local climate can be partially because of its near closeness to a couple of main deserts of the Iranian Plateau in the wet area. Warm weather, lower dampness along with lowly rain fall as well as low humidity includes the principal elements which make Yazd Province among the driest provinces of Iran. The highest temperature in, May and June, which are the hottest months of the year in north and north eastern regions of the state is approximately 50 degrees Celsius which can be extremely unbearable. Within the coldest month of the year, the temperature in western region, especially for the base of the Barfkhaneh and Shirkooh mountain tops drops right down to approximately -20 degrees Celsius. There are several well-known gardens in Yazd like Dolat abad garden, Golshan garden as well as Ghadir Park.

### **Procedure and Questionnaire:**

Data were obtained via a survey performed amongst visitors of Gadir Park in Yazd. The survey was developed following a pilot study. Participants were randomly chosen among the park visitors irrespective of their particular social status or work background. Moreover, participants were either born in Yazd or had been residing there for several years. Individuals contacted in the park were initially told concerning the survey's goals and responding process. Individuals willing to take part received the set of questions, and asked to fill it up while they remain at the location, ensuring that the responses would indicate their current experiences. Surveys had been handed out on both weekdays and week-ends at different hours during the day as well as at differing parts of the parks for six weeks. The survey was primarily according to the participants responding to closed category. The survey concentrated on wide-ranging restrictions on the utilization of UGS, amount of usage of green area, lastly belief associated with general features coupled with functions. All questions had been pre-coded; the actual responses analyzed using SPSS. The focus of the data analysis was to analyze people's notions, ideas and beliefs qualitatively. Thus quantitative analysis to seek relationship was not necessary. Although our concentration was on extracting meaning and to qualitatively assess the data, descriptive statistics was also conducted, and the resulting findings from the analyses may be of significant benefit to city planners, designers and developers concerning the function and significance of urban green spaces for members of a community's mood change and wellbeing. More detailed analyses of our research are subject to another article under preparation.

### **Participants:**

All in all, 148 questionnaires were handed out. The sample size  $N = 148$ , largely constituted female (54.3%). Age ranged from eleven to 67 and the mean age of the total sample is about 29 years (S.D. = 13.35). They were recruited randomly from among the visitors of Ghadir Park in Yazd. Closed questions were subjected to basic descriptive statistics (a frequency analysis). For each answer, the valid cases was indicated, i.e. the percentage of answers given with respect to the sample of the population.

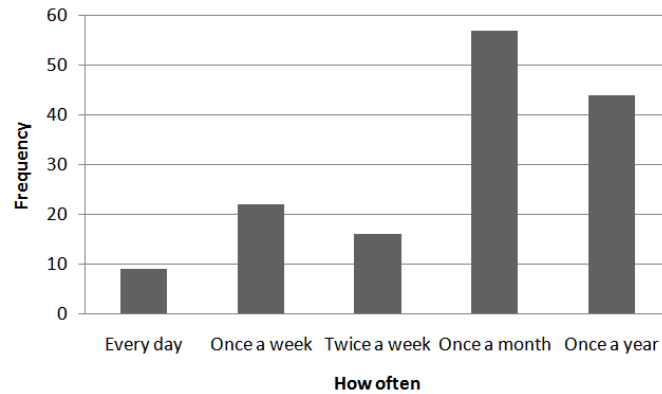
## **3. Result**

### **Frequency of Visit to UGS:**

How often do people visit UGS? The results showed that 57% of the respondents said that they visit UGS as frequently as once a month while 44% indicated that they visit once a year (Fig. 1). The result shows that the percentage of people paying regular visits to UGS is not high. What may explain such a low number of visitors? The explanation may be due to the following reasons.

### **Obstacles about the Use of UGS:**

The respondents were asked to give one or more reasons for not visiting UGS (Fig. 2). As many as 52.7% respondents pointed to shortage of time (busy). This response is not surprising as the life styles and demands of modern cities demand too much of people's time. The second obstacle pointed out by the respondents is lack of UGS. Nearly all the 43% respondents' indicated that at present green spaces are insufficient in quantity and that green spaces should be increased specifically in residential parts. It was observed that people are knowledgeable about the inadequate number of UGS and are also aware that the UGS are not as many as the requirement set by the constitution.



**Fig. 1:** Frequency of green space visit in Yazd

The third obstacle respondents agreed upon is the distance to the UGS; 40.5% of the participants declared this as an obstacle. Nearby nature plays quite a significant role inside the linkages between outdoor environments and human health. Earlier studies indicated closeness to UGS since the most preeminent decisive element for access to UGS. Closer green spaces ended up related with more visits (de Vries, Verheij *et al.* 2003; Grahn and Stigsdotter 2003; Stigsdotter 2004; Sanesi and Chiarello 2006; Nielsen and Hansen 2007).

Neighborhood nature entails natural features that individuals experience in their surrounding at which they spend a high percentage of their time, including residential setting, the workplace, and schools. Needless to say, that time and distance are closely related, i.e. that the greatest obstacle preventing people from currently being out of doors towards the extent they wish is that they experience the distance from their house on the nearest usable green area is too long (Grahn and Stigsdotter 2003; Stigsdotter 2004; Nielsen and Hansen 2007).

Not merely are UGS widely inadequate in range and top quality, they are also poorly secured. About 12.8% of the respondents related going to green spaces with absence of safety and 10.8% to troublesomeness. As Sanesi *et al.*, 2006 stated currently being in the presence of troublesome and unpleasant persons is really a principal sources of danger in UGS (Sanesi and Chiarello 2006). A general feeling of insecurity is an essential reason for not visiting urban green spaces in earlier researches, but this research did not confirm it, whereas the above talked about obstacles are additional significant for the residents of Yazd. A low percentage (4.1%) of residents of Yazd indicated that being “sick” is the other obstacle to visiting UGS.



**Fig. 2:** Obstacles preventing people from visiting UGS

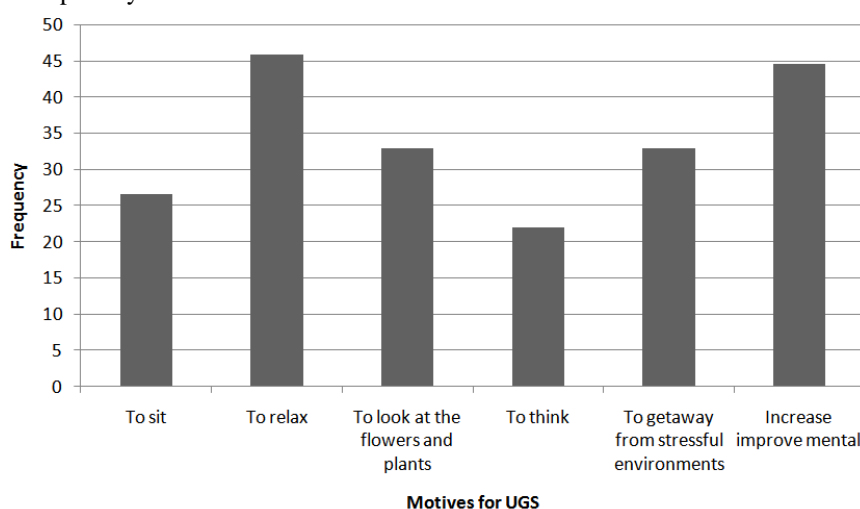
**Motives for Viewing UGS:**

Individuals' motives for visiting natural settings and also the range of activities they engage in show the kinds of expectations and demands people expect to be fulfilled at natural areas. This revelation could assist policy makers to take measures that are in accord with public needs.

In a bid to collect data on motives for visiting UGS, respondents were answered the question: "What is your reason for coming here?" Multiple choice options were offered: to sit, to relax, to look at the flowers and plants, to think, to get away from stressful environment, to raise and improve mentally. A frequency analysis of people's motives for visiting UGS shows that "To relax" and "To raise and improve mentally" are the reasons for regular visits to UGS as indicated by the respondents, accounting for 46% of the answers (Fig. 3).

A lot of people see a natural environment as an environment where they can rest and recover from regular stress. In the contemporary society, there exists a growing requirement for nature as being a source of relaxation and recreation (Maas, Verheij *et al.* 2006). As Chiesura stated that people visit the park primarily because they want to relax (Chiesura 2004). The motive "To get away from urban stressful environments" is mentioned in 33% of the answers returned. The response shows that people use UGS as refuge centers to escape from noisy city traffic and its other pollution. Additionally, there is the human need to see other things besides cars and buildings. In view of the above, UGS provides escape opportunities not only from the monotony of daily existence, but also to appreciate alternative atmosphere. The need to relax and to get away from urban stressful environments is especially strong in urban contexts. Encounter with a green area, as most people have experienced, allows us to easily forget our daily troubles, unwind, and provides people with the opportunity to take fresh air and restore mentally (Chiesura 2004; Regan and Horn 2005; Korpela, Ylén *et al.* 2008).

"To sit and to look at the flowers and plants" (Fig. 3) is another motivation for visiting UGS. This response shows the natural need to feel and experience the purity of nature and that it entails and the calming effect it has on individuals. Studies have shown that people benefit from plants not just by active contact with them as a result of actions such as gardening, but also through physically passive experiences such as viewing flowers and greenery (Ulrich 1984; Kaplan 1992; Relf 1992; Parsons, Tassinary *et al.* 1998). Being in natural environments, regardless of whether hiking or sitting in a UGS, has many psychophysiological beneficial results on health (Kaplan 1989; Marcus and Barnes 1999; Ulrich 1999). Another motive is "to think". This shows the desire of people for privacy and to reflect in solitude.



**Fig. 3:** Motive for UGS: frequency distribution

***The Emotional Dimension in the UGS's Experience:***

Yet another crucial analysis of interest of this study was to investigate the emotional dimension of UGS based experiences, the positive aspects people perceive plus the relation with their mood change. The feelings, along with the emotions we perceive from the natural surroundings form a relevant part of our experience in it. Respondents were being asked to answer the subsequent questions: "how do you feel after visiting UGS?" This question had a numerous response format. The subsequent possibilities had been given: To relax, to calm, to refresh, and to cope with worries, no different (Fig. 4). Frequency analysis in the answers obtained about the feelings experienced after visiting UGS shows that "relaxing" is by far the feeling most regularly stated, accounting for 58% in the answers. The feeling of "refreshed" accounts for practically 43.9% of the data obtained. A study discovered that parks and gardens were being perceived as calming and peaceful and have been related with a favorable mood state (Nettleton 1992; Burwood 2008). "More calmer", "to cope with worries" are the less talked about feelings people experience from the park. About 8% indicated no difference. The finding indicates that the mental encounter is perceived as a very crucial contribution to people's change mood.

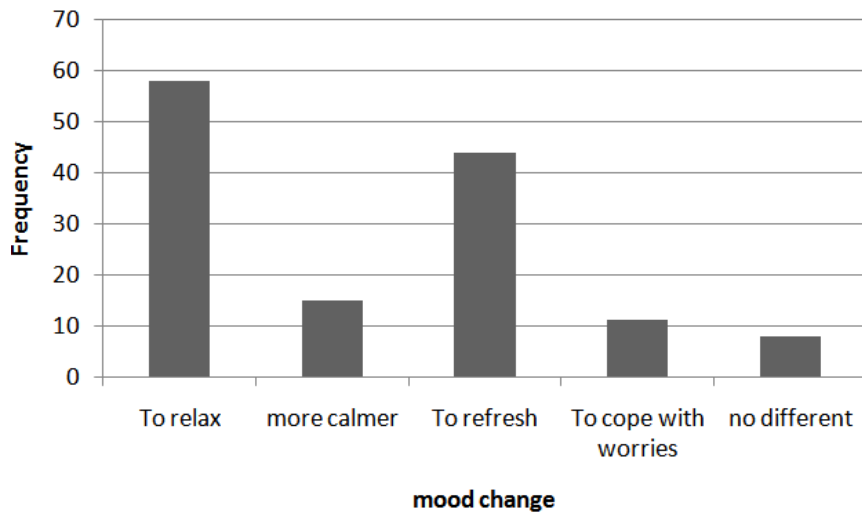


Fig. 4: Mood changes after viewing UGS

**Beneficial Physical Features of UGS on Mood Change:**

Which of the subsequent characteristics on the UGS strengthen your mood states? This question had a multiple response format. The next alternatives were granted: Trees, greenery; flowers and color; private areas; fresh air; play children; sound and look at water, sounds of birds, beautiful landscape.

As expected with regard to absence of green area in Yazd city, virtually 61% residents mentioned tree, greenery, 45.9% to sound and appear at water; 47.3% to flowers, color. Green space and water were found to be the two most important components of restorative environments which could contribute to mental well being and positive mood changes (Kaplan 1985; Ulrich 1993; Purcell, Peron *et al.* 2001; Regan and Horn 2005; Karmanov and Hamel 2008). And also the presence of water is perceived as especially relaxing and peaceful (Ulrich 1993; Purcell, Peron *et al.* 2001). Green nature and natural water environments ended up mentioned most frequently for a relaxed encounter (Regan and Horn 2005). From frequency analysis in the answers obtained, 40% indicated fresh air since the most important motive like an end result of air pollution within the cities of today’s industrial society. “Attractive beautiful landscape” constitutes one more important characteristic (35.5%) that help in mood change. The reasons private areas, sounds of bird follow in decreasing frequency.

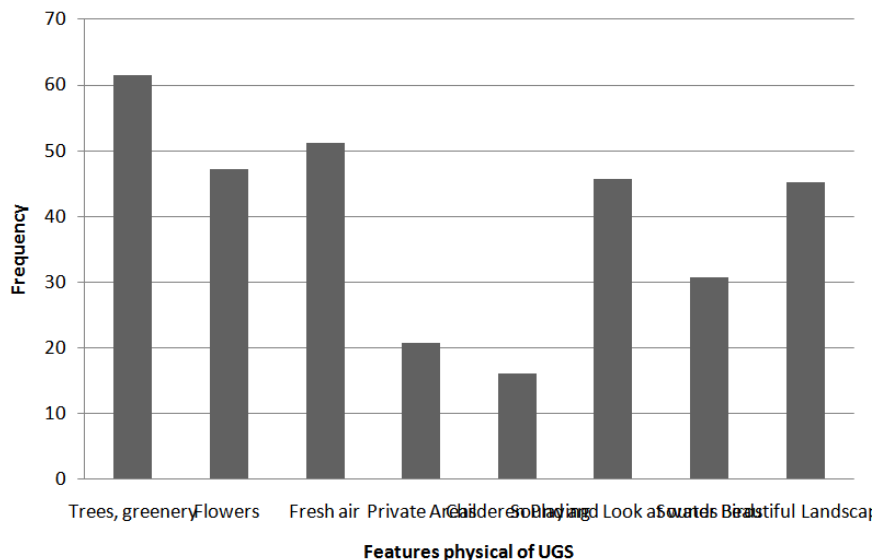


Fig. 5: Beneficial physical features of UGS on mood change

#### **4. Discussion and Recommendation:**

Natural settings make us feel 'at one' with nature and make us feel at peace with the universe which in turn could lead to transcendental experiences (Rohde and Kendle 1994). This outcome is more likely to occur in the wild; however, as it is a subjective experience, it is possible that similar results could be created by natural areas in urban centers. Why do people visit UGS less often?

The outcomes showed that the present green places are insufficient in number and that green spaces have to be elevated particularly in residential places. Citizens have a clear concept with the level of public green spaces in terms of quantity and are aware that present quantity does not reside up on the standards set down by national legislation. The amount of green place near to where people reside has a considerable relation with their perceived health (Maas *et al.*, 2006). This relation may be explained by the fact that elevated presence of green space is likely to increase the use of it, which in turn seems to promote several aspects of health. Moreover, access to green space is mentioned as one on the greatest obstacles. As earlier researches also suggest, facilitating access to green areas could be a beneficial element of preventive health programs (Grahn and Stigsdotter 2003; Nielsen and Hansen 2007). Empirically we can see that people make most use of outdoor spaces that happen to be nearby, in unique if they are near to home, engender a sense of security and ownership, and are attractive. An investigation showed that lack of close access to green spaces in residential areas leads to raise in stress-related illness in society (Grahn and Stigsdotter 2003). To be able to encourage people to become in nature, the accessibility of UGS must be considered. With current trends in various countries towards an ageing demographic, we will need to make UGS accessible to all. Furthermore, UGS must be produced as beautiful places in cities - places which are socially cohesive and promote social solidarity (Burwood 2008). Further, this research found that people visit the UGS primarily simply because they would like to relax. The need to escape from the stressful environments of the cities and to increase improve mental health constitute other important reasons for people's visits towards the UGS. Empirical findings of this study confirm the positive impacts of exposure to natural environments (Kaplan 1989; Frumkin 2001) and mood change (Ulrich 1984). Therefore, taking the green health perspective into consideration in urban planning and UGS management can have a significant function in disease prevention and in promoting healthy lifestyle of individuals. In his Stress Reduction Theory, Ulrich suggests that exposure to natural settings engenders stress reduction (Ulrich, Simons *et al.* 1991; Ulrich 1993).

Users of UGS also stated that visiting outdoor green spaces evokes a positive and tranquil feeling, which has been found to accelerate healing. As a result, this study reveals that respondents indicated positive psychological transformation when exposed to nature. But what are the relationships among people's experiences and mood state? How does currently being from the UGS affect people's emotion? Findings show that the feelings as well as the emotions evoked in the green space are perceived by people as extremely essential contributions to mood change. Further, instant benefits are perceived concerning the rejuvenation of psychophysical equilibrium, to relax, to calm, to refresh, and to cope with worries. These aforementioned emotional and psychological benefits are critical factors in the stability of human functioning (Prescott-Allen 1991). The citizens gave clear views about how much green area is truly obtainable in Yazd and also of its high quality.

One in the main findings with the study was that most of people pointed out a positive mood change after visiting UGS including feeling additional relaxed, refreshed and much less stressed.

For centuries there exists the notion that spending time in the natural environments – whether in the wild or in enclosed gardens - impacts positively on human wellbeing. The agreed upon beneficial elements of natural environments are daylight, fresh air as well as the greenery (Knopf 1987; Gerlach-Spriggs, Kaufman *et al.* 1998; Marcus and Barnes 1999; Grahn and Stigsdotter 2003).

UGS are actually identified to boost powers of focus, reduce stress levels as well as relieve irritation. Today, Stress is one on the biggest causative factors of diverse stress-related health problems. A basic stroll in a very park may strengthen one's muscles and present fresh air and daylight, all of which are important factors for a healthy life and there's connection in between surroundings and health.

Consistent with the findings of previous researches (Kaplan 1989; Purcell, Peron *et al.* 2001; Ulrich 2002; Grahn and Stigsdotter 2003; Karmanov and Hamel 2008), respondents mentioned water and green space as the two most important physical features that contribute to their mood change. Water and green space were found to be elements of restorative environment that contribute to stress reduction and mood improvement (Karmanov and Hamel 2008). Earlier studies pointed out that this presence of water is experienced as particularly relaxing and peaceful (Ulrich, 1993). There is some evidence that this availability of green spaces is a crucial predictor of self-reported health (de Vries, Verheij *et al.* 2003).

The availability of green spaces in a very neighborhood has also been found to have an impact on self-reported stress levels (Grahn and Stigsdotter 2003). These findings assistance the notion how the incorporation of water and green spaces into well maintained urban environments may possibly possess a favorable influence on public healthiness (Frumkin 2001).

### **Conclusion:**

This research has shown people's perception of the existing UGS, obstacles to the visit of UGS, the reasons behind why people visit them and the role of UGS on positive mood change in urban environments.

Urban lifestyles have generated various stress related illnesses at work and home environment. Actually, stress is a significant contributor of ill-health in today's societies. Environments in the city, such as parks, gardens and UGS, could diminish stress and provide opportunities for recovery (Ulrich 1983; Ulrich 1984; Kaplan 1989; Kaplan 1992). The results on the analysis of effects of UGS in the city of Yazd in Iran on mood change shows that UGS facilitates the reduction of stress and improves psychological wellbeing of users. These findings are significant for architects and town planners in designing structures with adequate views of UGS. According to these results, urban planners can include more green spaces and parks and provide access to them.

A growing sense of awareness of the positive effects of green space could be noted among the individuals sampled, i.e. green space is perceived as a factor that contributes to improvement of wellbeing and positive mood change. As stated earlier, this information is vital in town planning and health initiatives.

Further the appropriate structuring of such green areas could help relief or at least reduce city dwellers' experiences of stress. Another important thing about developing urban green spaces is that they are democratic in the sense that they are open for people and their benefits accrue to whoever visits - irrespective of age, sex or socio-economic status.

The analyses presented here represent the only and therefore the first qualitative explorations in the relationship between people's perception of UGS and mood change in the town of Yazd in Iran. However, this research currently has limitations. First, the outcomes may well be particular to Yazd, and probably other heavily populated nations or areas. This particular exploration employed data from responses among visitors inside a park in Yazd. Small sampling level had been used to investigate the responses of inhabitants near green places. A study involving a bigger sample may possibly add to validity of the results mainly because it will reveal different choices of residents regarding UGS. Due to the limitation of time and resources, the effects of the demographic features of the respondents such as age, gender, residence, education, and occupation on their responses were not investigated. The influence of these variables warrants attention in future researches. Finally, although green spaces have a lot of benefits, the objective and scope of this investigation is to investigate their consequences on favorable mood change.

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