Influences of Viewing Nature Through Windows

Mahdieh Abkar, Mustafa Kamal M.S., Suhardi Maulan, Manohar Mariapan

Department of Landscape Architecture, Faculty of Design and Architecture, Universiti Putra Malaysia, Serdang, Selangor, Malaysia

Department of Forest Management, Faculty of Forestry, Universiti Putra Malaysia, Serdang, Selangor, Malaysia

Abstract: A number of studies have found relationships between nature and people’s health. These studies indicated three levels of engagement including viewing, being and involvement with nature which positively impact health. Nevertheless, few studies have focused on the effectiveness of viewing nature through windows on human health. This paper will summarize and analyze studies dealing with viewing nature through window. These include viewing nature through windows in formal building, the workplace, and the home. Results indicated that many aspects of human health and development can be significantly improved by viewing nature through window. Improvement in concentration, recovery from stress, high productivity, and improvement in psychological state are all positively associated with viewing nature. These findings are significant for architects and town planners in designing structures with adequate views of nature. However, research in this area is far from conclusive and this paper recommends directions for future studies as regards nature views through windows.

Key words: Viewing nature, window, Health

INTRODUCTION

Today, most of societies are facing increasing challenges with stress-related diseases. We must manage moderate stress well. Sustained stress over a long period may have severe harmful effects. Several studies have indicated relationship between human health and nature are influenced in a positive way by his spending time in natural surrounding – wild nature as well as enclosed gardens, (Ulrich 1999; Grahn and Stigsdotter 2003; Stigsdotter 2004; Ottosson and Grahn 2005). Furthermore, environments in the city, such as parks, gardens and urban green spaces, could diminish stress and provide opportunities for recovery.

When technical approaches in medicine replaced the link between nature and healing, the notion that gaining access to nature could aid healing also became supplanted (Marcus and Barnes, 1999; Ulrich, 2002). Yet, proponents who champion the connection between nature and health have re-emerged thereby contributing immensely to the literature. Extant literature is rich on methods, ways and the effects of the environment as well as the natural factors on human health.

Research has shown that nature can speed up the recovery of individuals suffering from stress (Kaplan and Talbot, 1983; Ulrich, 1984; Herzog, Black et al. 1997). When people are exposed to green environments, their concentration improves and their stress level reduces. Further, studies have also indicated that adequate light in natural environments sets off prompt positive feelings. Evolutionarily, such environments have had great significance (Ulrich, 1993).

Access to restorative environment is important to people that are depressed, ill or stressed and in a number of cases, quick restitution to a normal pulse and blood pressure is achieved (Ottosson, 2001). In 1989, Attentional Restorative Theory (ART) was proposed by Kaplan and Kaplan. Using the theory, the authors argued that, for a healthy psychological reinvigoration, natural environments offered good opportunities. This is due to the fact that some healthy qualities are possessed by natural environments which when put together do not exist in other environments. The Stress Reduction Theory (SRT) proposed by Ulrich (1983), on the other hand, focuses on the emotional and physiological transformations that occur when individuals who have faced challenging or threatening situations viewed a scene. Ulrich held that perceiving certain contents in a scene reduce stress and improve psychophysiological wellbeing (Ulrich 1993). In sum, SRT theory purports...
that reduction in stress is achievable through exposure to natural environments (Ulrich 1984; Ulrich 1999). Therefore, the two theories are unanimous in suggesting that any type of nature is linked with relaxation that recovery from stress is accelerated by greenery and nature.

Of recent, new findings have supported these theories (Hartig, Boeck et al. 1996; Herzog, Black et al. 1997; Ulrich 1999; Ulrich 2002; Grahn and Stigsdotter 2003). Among the early studies supported by recent findings is Ulrich's (1981) thesis that sensational experience with nature raises contemplativeness, rejuvenates the city dweller, reduces stress, and provides a sense of peacefulness and tranquility. Many empirical studies have been conducted about theory of the restorative role of natural environments. 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; Conway 2000); albeit, the belief about the positive effect of nature on psychological wellbeing of urban dwellers is not new. Researchers believe it is as old as urbanization itself (Ulrich and Parsons 1992; Ulrich 1993). Some of these 'encounters' with nature are everyday affairs while others are more purposeful and specific and the effect is more deeply experienced. Researchers have studied the impact of viewing nature through windows on mental health more extensively. This is because windows are essential parts of buildings at which individuals spend part of their days. It is usually preferred by individuals to live or work in structures fitted with windows that allow them to view the surroundings (Finnegan and Solomon 1981).

Further, at workplaces, people put much premium on offices with more windows especially corner offices which usually have more windows because these offices afford better and more viewing options. Even people traveling on cruise ships are charged higher fees if they wish to stay on upper deck rooms with window view. The same thing goes for lodgers in hotel room: they pay steeper prices for rooms with interesting views. It is also common for people to locate their houses on mountains and near oceans without minding the associated risks because of the natural views such structures offer. Having a window with natural view is more than a whim of individuals. Researchers have documented its importance.

In general, these studies indicated three levels of engagement including viewing, being and involvement with nature which positively impact health (Pretty 2004). Nevertheless, few studies have focused on the effectiveness of viewing nature through window on human health. This paper will summarize and analyze studies dealing with viewing nature through windows. These include viewing nature through windows in residential settings, institutional settings and workplaces.

**Effectiveness of View Nature Through Window in Residential Settings:**

It was discovered that residents in apartments with windows providing views of nature are more relaxed, more effective, and less distracted compared to residents who had no windows that provided nature views (Kaplan 2001). It was suggested by authors that opportunities for restorative experiences are provided for residents by windows with views of nature through indirect contact with nature. It is also suggested that because windows attract people's attention, they increase the chances of individuals looking through, thereby, providing micro-restorative experience which in turn facilitates brief breaks from tasks and engender relief (Kaplan 2001). Another study by Kaplan (1985) discovered that residents of urban areas with access to gardens perceive their neighbors to be more friendly and believed that their housing development held a stronger sense of community. These beliefs contribute to their neighborhood satisfaction (Kaplan 1985).

Similarly, it was suggested that higher density environment such as high rise structures could be more acceptable if residents have natural views (Kearney 2006). This is because - corroborating earlier studies - Kearney found that access to landscaping and forests enhanced residents' neighborhood satisfaction (Kearney 2006). Ulrich examined the benefits of nature viewing on mood. And he found that subjects who viewed slides of nature scenes experienced an increase in their mood affect. On the contrary, those who viewed slides of urban areas had a decrease in positive mood affect. Ulrich concluded therefore, that nature scenes especially the ones showing water have a positive psychological effect on humans.

Supporting Ulrich, some researchers stated that nature scenes induce sustained attention, pleasure, relaxation, and wakefulness (Rohde and Kendle 1994). Further, views of nature and their impact on domestic violence were studied by Kuo and Sullivan (2001). The inner-city apartments with views of nature were categorized as 'green buildings'. They found that residents in the 'green buildings' reported less aggressive behavior and violence than those who had no nature views. It is safe to conclude from these findings that environments without nature views contribute to mental fatigue, increase stress, and engender the potential for violence (Kuo and Sullivan 2001). Further, views of nature can foster recovery from mental fatigue (a result
of intense concentration) because the act of viewing nature does not necessarily require focused attention; rather, the mind wanders and reflects due to the calming effect of nature.

Effectiveness of View Nature Through Window in Institutional Settings:
In stressful environments such as nursing homes, hospitals, distant military sites, space stations and so forth, the healing impact of natural view is being studied and increasingly understood (Lewis 1996). Studies show that in these environments - especially, insinuations where people work in windowless rooms - viewing nature has quite a positive impact on individuals' wellbeing and in relieving stress (Kaplan 1992; Lewis 1996; Leather, Pyrgas et al. 1998). For planning of parks and recreation areas in urban areas, studies such as these have significant implications.

Enhancement of recovery is a possibility if natural views through windows are incorporated in hospital settings. Ulrich (1984) in a seminal study investigated the recovery rate of patients who had undergone surgery. He found that patients in hospital rooms with window views of natural things such as shrub, trees, grass and so forth, had a faster recovery rate. Such patients also had a more positive outlook, required less painkillers and also recorded fewer post surgical complications (Ulrich 1984). Although these studies are not arguing that nature could replace medical procedures, it is important to note that windows with natural views have positive impact on patient recovery in hospitals.

In a related study, Ulrich and colleagues induced stress in two groups of subjects; both groups were shown work related accident movie depicting excessive blood and gore. Different video tapes were shown to the groups when they were in recovery stage and psychological recovery was measured by taking the blood pressure, muscle tension and heart rate. High level of psychological stress recovery was exhibited by the group that was shown a video tape of natural scenes such as trees, moving water, grass etc. On the contrary, low psychological recovery rate was shown by the group that viewed traffic scenes areas devoid of vegetation. On the physiological direction, this study revealed that the natural settings elicited responses which included an element of parasympathetic nervous system linked with restoration of physical energy (Ulrich, Simons et al. 1991).

Similarly, research has demonstrated that people handle temporary discomfort better when plants are placed in a windowless space (Lohr and Pearson-Mims 2000). More, a study revealed that patients self-reported better pain control when they listened to nature and natural scene murals were placed by their sides while undergoing an invasive surgical procedure (Diette, Lechtzin et al. 2003).

Another study examined patients with Alzheimer's disease in five nursing homes. Three of the homes in the study were equipped with gardens and natural scenes but two of the homes were not. The study revealed that patients residing in homes with gardens were less aggressive and less violent compared to the patients in the homes with no gardens (Ulrich 1993). It was also reported that patients in a Swedish psychiatrist home who complained about some paintings over a 15-year period and damaged such paintings, did so to only the abstract paintings not the paintings depicting natural scenes and landscapes (Ulrich 1993).

It is argued that hospitals have always had gardens to serve as adjunct to healing and recuperation (Frumkin 2001). People living in retirement settlement also opine that windows facing green landscapes are important to their wellbeing (Frumkin 2001). The aesthetic preference of people for nature may be generally conveyed across cultures (Ulrich 1984). Furthermore, studies carried out in prison environments revealed that cell window views of nature are correlated with a lower stress frequency of symptoms in inmates, headaches, digestive problems and with fewer complaints of illness (Moore 1981).

In a study (Tennessen and Cimprich 1995) students were divided into two groups: those whose hostel rooms have natural views and those with access to only views like car parks and sidewalk. They were given tasks to be completed in their respective rooms. The researchers found that those with natural views were better able to focus their attention and suffered less mental fatigue than those with less natural views.

In another study in Geriatric Care, those suffering from crisis were observed in relation with their experiences with nature such as strolling in a natural environment and watching natural scenes. The study showed that those who experience nature in their daily life appeared to have a buffer cushioning them from mental trouble; thus they were less affected by the crisis. This result shows that nature act as a therapy, remedy, or catalyst facilitating healthy mental health. Therefore people with access to such natural experiences when afflicted with crisis tend to enjoy an ameliorated mental health (Ottosson and Grahn 2005).

In a review of commuter stress in drivers and mitigating impacts of roadside environments, Parsons et al. (1998) acknowledged that driving may lead to numerous physiological changes in the body. Some of these changes are: increasing the blood pressure, increasing heart rate, and activating the sympathetic nervous system. However, when they tested subjects' stress recovery and immunization after simulated drives through: one, golf courses; two, forest scenes; three, urban areas; and four, mixed roadside scenery, they found that subjects who participated in nature dominated drives recorded quicker recovery to and greater immunization against.
subsequent stress than those who took artifact dominated drives (Parsons, Tassinary et al. 1998). Recently, Felsten (2008) evaluated influences of views of nature on students' perceived restorativeness of indoor settings in college campus. She also compared views of real nature (seen through windows) and simulated nature (murals) in the same study. The result of study indicated that settings with views of real or simulated nature were more restorative than no views of nature. On the components of the restoration process, researchers believe that it is not only the window versus non window question that is important but also the content of the window view. (Moore 1981; Ulrich 1984; Verderber and Reuman 1987; Kaplan 1993; Tennesen and Cimprich 1995; Taylor, Kuo et al. 2002; Felsten 2009).

**Effectiveness of View Nature Through Window in Workplaces:**

People who sit near windows in the workplace have been known to be more enthusiastic about work, have fewer frustrations, less stressed, report fewer illnesses and are more patient (Kaplan 1989). Even university student are better able to think with green scenery. Those in offices without access to nature views compensate by placing plants in the offices and putting up landscape pictures but those who cannot compensate tend to be more stressed and aggressive. Additionally, lower levels of perceived job stress and higher levels of job satisfaction are associated with access to nature in the workplace (Kaplan 1989). In similar, result of a study demonstrated that window views of forests are a factor in employee job satisfaction and job stress (Shin 2007).

Interestingly, a study has also found that a view of natural elements such as trees and other vegetation is negatively correlated with intention to quit work and job stress (Leather, Pyrgas et al. 1998). Similarly, the presence of plants in offices is positively related with good mood, office attractiveness and comfort (Larsen, Adams et al. 1998). Further, Stigsdotter (2004) found that presence of gardens at workplace proffers stress-free environment even if age, gender, or socio-economic background are taken into consideration. These studies have supported the notion that a nearby nature has a positive effect upon reduction of stress (Stigsdotter 2004). Recently, researchers found that the heart rate recovery was more rapid among participants who viewed nature through a window than among those in a windowless office. Subjects who viewed the same scene on a plasma screen television did not have a significantly different heart rate recovery from those in the windowless office. However a real-time view of nature through a plasma television may not provide the same positive effect as a view of nature through an actual window in office settings (Kahn, Friedman et al. 2008).

**Conclusion:**

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. And these stress related illnesses can be suppressed immune functions, tense muscles, high blood pressure, which are all physiological. Or the illnesses can be psychological such as depression, anxiety, tension or anger. There are also behavioral problems such as outbursts, sleeplessness, drug abuse, aggression and so forth.

Since studies have revealed the positive relationship between nature (including simulated nature) and human health, immersion in nature like the forest or indoor gardens will reduce the stress related ailments. Also, in the urban areas, parks, green spaces, and parks can provide recovery opportunities for the population (Ulrich 1983; Ulrich 1984; Kaplan 1989; Kaplan 1992).

This review has indicated that viewing nature alone is beneficial to human health such as stress recovery, improved concentration, increased productivity and psychological wellbeing. Psychological wellbeing is especially important for people in confined areas such as prisons, high rise apartments, hospitals, mental homes, and nursing homes. This review has also shown the importance of visual access to nature when urban-planning. Urban planners can include more green spaces and parks and provide access to them.

However, and despite all the benefits of contact with nature, awareness of this knowledge is not sufficient. In some parts of the world including Malaysia, there is currently a lack of awareness in some parts of the society about the beneficial impact of visual access to nature. Therefore, it is important to study local population in Malaysia of different backgrounds and create awareness of the health benefits of visual contact with nature.

**REFERENCES**


Ulrich, R.S. and R. Parsons, 1992. Influences of passive experiences with plants on individual well-being and health, Timber Pr.