



PLANT AND HUMAN WELL-BEING

Dr. Rupa Acharya,

Assistant Professor, Department of Botany, Dhruba Chand Halder College

Email: rupaacharya101097@gmail.com

Health is the key component of wellbeing. World Health Organization (WHO) defines health as 'Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'. Wellbeing is the experience of health, happiness and prosperity. It signifies a good mental and physical condition, a sense of satisfaction, having positive emotions, ability to manage stress and to stay socially connected. It is based on the theory of increased pleasure decrease pain and leads to happiness. Modern life style of twenty first century can be characterized by individuality, personal growth, privacy emphasizing on technology and globalization, leading to the changes in social, environmental, economic and cultural traditions. This pushes us towards mental stress of different degree and invites lots of life-style oriented diseases. Furthermore, our urban lifestyle forces us to stay at indoor environment for a longer time, the dwelling area become more and more congested, structure of family broken into smaller segments. All these conditions have a great effect on our healthy life because environment of family, society, and workplace plays a very significant role on our wellbeing. Major types of stresses come from environment. Environmental stress includes several factors in the person's surroundings and that can cause emotional or mental stress in our life leading to the increase level of discomfort, anxiety and aggression. Plants can relieve stress through several mechanisms. Some plants like Cedar, Pine release phytoncides which can trigger the secretion of serotonin and endorphins in our body to make us happy. Symptoms of stress may include decreased memory and concentration, insomnia, increased heart rate, headaches and muscle pain. Chronic stress can suppress immune system. Urbanization becomes a necessary evil for us. Green places for public became limited due to construction and population. Continuous expansion of urban area contributed the changes of natural environment to agricultural land and built-up areas. Due to increasing rate of urbanization, it is becoming difficult to access to natural landscape. Human being has a basic instinct of love for nature called as biophilia. Biophilia can have positive impact on wellbeing by affecting our body-mind system to improve physiological, psychological and cognitive functions. People are happier when engaging with green and natural environment as compared to urban environment. The cities and the urban area should be planned for more greenery through small scale green features. Moreover, designing a greener indoor space is highly encouraging to ensure that people to stay in the indoor environment having the opportunity to interact with nature which can promote the comfortable level, productivity and mental functioning of a person.



Indoor lifestyle of urban area can be improved by adopting plants. Indoor environment includes home, work place, laboratory, restaurant, club, shopping mall, hospitals and others. Certain species of plants could effectively reduce carbon dioxide, increase the comfort level in heated interior spaces, reduce particulate matter in the air. Plants can help in bring down the concentration of certain toxic volatile chemicals like benzene, formaldehyde, trichloroethylene. which can cause respiratory trouble and discomfort. Long term exposure of this may cause neurotoxicity. Plants can act as air purifier through bioremediation process. *Aloe vera* can reduce formaldehyde. Development of "green pockets" in different corners of home, staircase, "green window", "green roof" etc are gradually getting attraction in the common urban people.

Exposure to real plants even the posters of plants result in the lowering the level of experienced stress. Exposure to natural scenes mediates the negative effect of stress. Stress reduction and mental restoration occur when individuals live near green areas. Trees and forest are also associated with stress reduction. Horticulture therapy is effectively introduced for depression patients with garden walking. Interacting with nature, especially with water can increase self esteem, reduce anger and increase general psychological wellbeing. It is believed that horticultural plants have a positive effect on cognitive abilities of human brain. It is useful for emotional illness and chronic mental health condition as well as physical disabilities. Beautiful landscape with plants often increases creativity within man and thus creates a potential cultural diversity and sustainable community development. Walking on barefoot on the soil or on grass field has a beneficial effect on reducing stress.

Plants in the work place are known to bring a number of benefits. Good working environment reduces complaints and absenteeism and increase productivity. Work place satisfaction is associated with job satisfaction. Buildings, street, mechanical routine type work make the job boring and less productive. Work place should be designed with indoor and outdoor with greeneries to make it productive.

There are several stress and anxiety reducing indoor plants. Lavender plant is used as stress relieving treatment for its soothing scent and is used for antidepressant, muscle relaxing, release tension, and antioxidant effect. Jasmine Plant is a good indoor plant having lively blossoms with fragrant which releases anxiety and help in good sleep. Snake plant can absorb toxic pollutants from air. It provides a charming touch of greenery at indoor condition. Aloe Vera is extensively used as first aid for treatment of sun burn, acne, cut and wounds, skin toner etc. its succulent leaves can absorb hazardous compounds from air, and act as air purifier. Peppermint is containing as menthol. It has been found that peppermint is effective against anxiety and exhaustion. It can simply be cultivated in the kitchen area or kitchen garden. Basil plant, we called as Tulsi has numerous health benefits. It acts against throat sore, stomach ulcer, treating for insect bite, cough and cold and so on. Chamomile is one of the best stresses relieving indoor plant besides having good looking flowers. Chamomile tea is a well-known stress reliever.



There may be several inhibiting factors to make outdoor green but some more opportunities are there to make the indoor green. It is always better to select indoor plants according to the architecture of building and space. Shape, size, nature of plant, presence of light its intensity and duration, water demand of plant, growth season etc. should be kept in mind before planning for adoption of plant so that the maximum benefit of it could be achieved.

Selective References:

- (1) Alvarsson, J.J., S. Wienes and M.E. Nilsson. (2010). Stress recovery during exposure to nature sound and environmental noise. *Intl. J. Environ. Res. Public Health* 7(3): 1036-1046.
- (2) Barton, J. and J. Pretty.(2010). What is the best dose of nature and green exercise for improving mental health? A multi-study analysis. *Environ.Sci. TGech.* 44(10): 3947-3955
- (3) Berman, M.G., J. Jonides and S. Kalpan. (2008). The cognitive benefits of interacting with nature. *Psych. Sci.* 19(12); 1207-1212.
- (4) Bringslimark, T., Hartig, T., & Patil, G.G. (2009). The psychological benefits of indoor plants. *Journal of Environmental Psychology*, 29(4): 422-433
- (5) Carruthers, C.P., and Hood, C.D. (2004). The power of positive: Leisure and Well-being. *Therapeutic Recreation Journal*, 38(2), 225-245.
- (6) Han, D.E., Corsi, R. L., Morandi, M.T.,& Siegel, J.A. (2010) Formaldehyde in residences: long term indoor concentration and influencing factors. *Indoor Air*, 20: 196-203.
- (7) Jiang B., Chang C.Y., Sullivan W.C. A dose of nature: Tree cover, stress reduction and gender differences. *Landsc. Urban Plan.* 2014; 132: 26-36. Doi: 10.1016/j.landurbplan.2014.08.005
- (8) Russell, R., A.D. Guerry, P Balvanera, R.K. Gould, X. Basurto, K.M. Chan, S. Klain, J. Levine, and J. Tam. (2013). Humans and nature: how knowing and experiencing nature affect well-being. *Annual Rev. Environ. Res.* 38: 473-502
- (9) Shibata, S., Suzuki, N. (2002). Effects of the foliage plant on task performance and mood, *J. Environ. Psych.*