Agri Articles
(e-Magazine for Agricultural Articles)
Volume: 06, Issue: 03 (MAY-JUNE, 2026)
Available online at http://www.agriarticles.com
©Agri Articles, ISSN: 2582-9882

Influence of Indoor Plants on Human Mood, Cognitive Function and Quality of Life

*Subreena Farooq[1] and M.A. Islam[2]
[1]Ph.D. Scholar, Division of Natural Resource Management, Faculty of Forestry, SKUAST-K, Benhama, Ganderbal-191201 (J&K)
[2]Professor-cum-Chief Scientist, Division of Natural Resource Management, Faculty of Forestry, SKUAST-K, Benhama, Ganderbal, J&K-191201
*Corresponding Author's email: jsabreena242@gmail.com

Today, a person's lifestyle, spend around 80-90% of the time in indoor environment like home, office, schools, medical centers, retail stores etc. Urbanization and technology have improved the quality of life, but have also reduced opportunities for regular contact with nature. This nature-disconnect is associated with psychological stress, emotional exhaustion, reduced concentration, and other physical and mental health problems (Bringslimark *et al*., 2009). In recent years, researchers and environmental psychologists have thus been keen to find ways to reconnect people with nature in interiors. Indoor plants are one of the most straightforward and readily available means of experiencing nature indoors. Apart from providing beauty, people believe that indoor plants can affect human emotions, cognition, physiology, and behavior via the biophilic interaction. According to biophilia hypothesis, humans are genetically wired to seek connections with nature and with living things (Wilson, 1984). Therefore, the use of plants in the interior (Figure 1) could create a psychological refreshment and physical balance. Previous reviews that examined the effects of indoor plants focused mainly on the psychological benefits but did not use a systematic approach like Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Bringslimark *et al*., 2009). Also, a great part of the previously reported results were quickly overgrown with the fast development of research in environmental psychology and indoor ecology. Given the above, more recent (and updated) systematic reviews and meta-analyses have attempted to offer a comprehensive view of the impact of indoor plants on human performance and quality of life (QoL) in general (Lee *et al*., 2022). The findings from recent research are summarized in this article and analyzed in depth to understand how indoor plants can promote feelings of goodwill, intellect, body, performance and well-being. The approach used in the reviewed research is summarized. The systematic reviews covered the quantitative empirical research in either English or Chinese. The key databases analyzed were Web of Science, Scopus, WANFANG DATA and Taiwan Periodical Literature. The research carried out within last 50 years (from 1970 to 2021) was taken into consideration (Lee *et al*., 2022). Requirements for eligibility usually encompassed: Ages and background of participants are not discriminated. Indoor plants used as an intervention including real and surrogate plants. Control conditions, with or without plants, or with different environmental elements. Psychological, physiological, cognitive, health-related or behavioural outcome measures. Designs of research including experimental, quasi-experimental, field experimental, survey and other allied designs. In the reviewed studies a range of different environmental factors were investigated including room size, light, humidity, plant exposure time and distance between individuals and plants. Perceptions and physiological measures were subjective and objective, respectively. Some 50 studies were directed toward subjective

psychological outcome and 42 studies at objective human functioning. The majority of studies were rated as being of moderate methodological quality (Lee *et al*., 2022).

a) *Echeveria chihuahuaensis*

b) *Aloe Barbadensis* Miller

Figure 1. Indoor Plants

Physiological Responses to Indoor Plants

The psychological effects of Indoor plants are Supporting positive emotions. The most consistent result from the literature surveyed is that plants have a positive effect on emotional state in the indoors. Many studies have found that individuals who come into contact with indoor greenery often reported calmness, comfort, happiness, and relaxation (Bringslimark *et al*., 2009; Lee *et al*., 2022). Indoor plants seem to make attractive surroundings that give emotional stability and sense of emotional well-being. The nature elements in the interior can help to alleviate mental fatigue and emotional recovery by connecting with nature through senses. This restorative effect is even more significant in a dense urban environment with noise, crowding and work stress. Limiting negative emotions and stress. Indoor plants have also been linked to decreased anxiety, stress, tension, sadness and emotional exhaustion. The impact of exposure to greenery may cause a reaction that activates the parasympathetic nervous system, which reduces psychological stress (Lee *et al*., 2022).

Several experimental studies showed that participants working and/or studying in a room with plants reported reduced perceived stress and enhanced emotional well-being, while those in a plant-free room did not. From these findings, it can be concluded that the vegetation in the indoor environment could be a non-pharmacological and cost-effective approach to stress management. While most studies achieved positive results, the inconsistent results in some of the psychological measurements with regard to the exposure duration and plant density might be attributed to the different experimental conditions. However, in some instances, personal tastes and cultural context can also shape the emotional reactions to indoor plants. In this examination, the users' perception of health and environmental comfort is examined. Also, the literature reviewed shows that indoor plants enhance perception of physical health and environmental comfort. The participants typically experienced less fatigue, fewer headaches, a decrease in eye irritation, and greater thermal comfort in indoor settings with plants (Lee *et al*., 2022).

Indoor plants can help improve the quality of indoor air, help to regulate humidities, and enhance the visual environment. These factors in turn, positively affect satisfaction with indoor places and positively impact on perceived quality of life. Cognitive Functioning and Productivity impacts. In addition to emotional health, indoor plants seem to have an impact on cognitive function. Many studies were reported showing beneficial results on attention, concentration and mental recovery. The green indoor environment can help to alleviate attentional fatigue, allowing for the ability to maintain a concentration for a longer duration (Bringslimark *et al*., 2009). Students who were exposed to classrooms with plants tended to get better at focusing on the task and at achieving better academic outcomes. Likewise, office workers in plant-rich surroundings experienced improved focus, task engagement and job satisfaction. (Lee *et al*., 2022) in their meta-analysis found the indoor plants to have a

statistically significant positive effect on academic performance. In workplace environments, the indoor greenery had been linked with better creativity, productivity, and job satisfaction. The presence of plants in the workplace often was seen by employees as more motivating and pleasant, which is likely to have an indirect positive impact on organization performance. Interestingly, the magnitude of the benefits to cognition varied from study to study, which may be due to differences in the nature of the plants, room design, and characteristics of the occupants. Therefore, further research is needed to determine whether specific plant configurations or ecological conditions yield better cognitive results.

Effects on Cognitive Functioning and Productivity

One of the most important physiological results found in the meta-analysis was that the study participants' DBP dropped after being exposed to the indoor plants (Lee *et al*., 2022). We can conclude that lower blood pressure represents physiological relaxation and less activation of the stress response system, yielding a possible moderation of cardiovascular stress response systems in indoor setting by use of indoor plants. Several studies also examined the electroencephalography (EEG) responses to exposure of indoor plants. Changes in alpha and beta brain waves were not always statistically significant but there were overall trends towards increased relaxation and attentional states in the presence of greenery. This hypothesis is supported by these findings, which suggest that the visual interaction with indoor vegetation has a possible effect on neurological processes linked with the cognitive restoration and stress reduction.

Indoor Plants and Quality of Life

Indoor Plants and Quality of Life refer to emotional wellbeing, physical health, productivity, satisfaction with the environment and social functioning. The literature reviewed shows that many of these dimensions are affected in a positive way with the use of indoor plants in the same time. Indoor greenery can help to create a more visually appealing and comfortable space for people to enjoy, enjoy positive social interaction, and contribute to a low-stress environment. Healthcare environments can help patients enjoy a better recovery experience and alleviate emotional stress with the use of indoor plants. Plants can establish peaceful settings at home, which can aid mental recovery from daily pressures. Indoor plants could be especially relevant in densely populated urban areas, and climatically extreme environments where regular contact with nature is limited. Indoor vegetation might be an important substitute in natural environmental exposure in the rapidly urbanizing area, including many cities in South Asia. However, these studies are limited in their scope.

These studies have their own limitations. While the research so far has shown promising results, there are some drawbacks in the research existing so far:

- Many studies had small sample size.
- There were many differences between investigations.
- Not all plants or plants at all times were exposed. Some meta-analyses only considered a few studies for each outcome variable.

Grey literature and unpublished studies were often excluded which may have led to publication bias. Also, the response of participants to the indoor plants may be different, due to differences in cultural background, environmental context and personal preference. The restrictions emphasize the need for more standardized and longitudinal investigations.

Future Research Directions

Future research should include:

- Long term studies of the effects of houseplants. Standardization of experimental methods and environment.
- Comparative investigations with various plant species, planting densities and plant configurations. Discussion of biological and psychological mechanism for indoor plants and mental health and cognition.

- Physiological biomarkers and neuropsychological assessments. Intercultural research in health care, educational and work environments.
- Large-scale interventions in indoor greening should also be explored in further research with regard to the ecological and economic consequences, especially in sustainable urban planning

Conclusion

The evidence of the beneficial effect of indoor plants on human mood, functioning and life quality increases in every day, and there has never been a doubt about it. Systematic review and meta-analysis show that indoor greenery positively affects emotions, relieves stress and negative emotions, boosts cognitive function and contributes to physiological relaxation as well as healthier indoor environments (Bringslimark *et al*., 2009; Lee *et al*., 2022). Despite the methodological limitations, the overall results justify the use of indoor plants in the domestic, school, occupational, hospital and public sphere. Indoor greenery is a low-cost, low-tech, and low maintenance solution that brings nature to the urban environment, which is often plagued by stress, accessibility problems, and mental health issues. Therefore, not only should the development of healthy cities focus on outdoor greenspaces but also should consider the integration of the vegetation within the built-in indoor environments through a wider interdisciplinary approach considering environmental sustainability, public health, and urban wellbeing.

References

1. Bringslimark, T., Hartig, T. and Patil, G.G. (2009). The psychological benefits of indoor plants: A critical review of the experimental literature. *Journal of Environmental Psychology* **29**(4): 422–433.
2. Lee, M.S., Lee, J., Park, B.J. and Miyazaki, Y. (2022). Effects of indoor plants on human functions: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health* **19**(3): 1–22.
3. Wilson, E.O. (1984). *Biophilia*. Harvard University Press, Cambridge, MA.