

THE ROLE OF APARTMENT LIVE PLANTS TO CONTROL ANGER AND AGGRESSION

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ABSTRACT

According to environmental psychology is one of the most important factors to design in architecture and interior design which means the environment and surroundings will have features for bringing tranquility and high efficiency for their occupants. One of the areas that most people spend most of their time in it, is home. For this reason, the spaces and elements used in it, must be designed carefully and detailed. With increasing living in residential apartment, private courtyards were excluded from houses. In the past, people were together and washed courtyard and sat in a pleasant atmosphere at evenings. In those days, people tolerance threshold is much higher than today. More people communicated with each other, but most of today's communication is virtual communication. Today, a lot of nature and live plants have been removed from our lives. This study aimed to investigate the role of the apartment live plants to control anger and aggression. For this study, 100 residential units were selected randomly to test. The collected data was investigated by correlation coefficient test (Spearman correlation) and Single-sample T-test and was evaluated using the 5-point Likert scale. Reliability of the two questionnaires was assessed using Cronbach's alpha and it was seen to be 0.850 and 0/920. Results of the present study indicate that by increasing positive attitude toward the live plants and use them in apartments, aggression will be reduced.

Keywords: Apartment live plants, anger control, tolerance threshold, psychological environment

INTRODUCTION

Ecology is the knowledge of studying the impact of the environment on living organisms, the impact of the living organisms on the environment and the interaction between living organisms (8). The researches show there is a relationship between the lack of social skills and behavioral disorders in the future. The problems associated with the weak performance of social skills, are: crime, defect of school and cognitive performance, school escaping and alcoholism, antisocial behavior and mental disorders (34). In most cases, live plants are the most important environmental variable which image in the mind of the viewer (39). Horticultural therapy can enhance social interaction (35). Research has shown that roadside vegetation causes fatigue, anger, aggression, fear and stress reduction in car drivers (1).

Different studies show that horticulture improves social functioning of schizophrenic patients (31). With increasing living in residential apartment, private courtyard were excluded from houses. In the past, the houses had yard. In the evenings all of the family were together and washed courtyard so there was a pleasant atmosphere for relaxing. Today, more people live in small apartments which sometimes does not even have a balcony or a window facing the sun so there is a distance between us, nature and live plants. Other studies have shown that the well-being of people, as well as their psychological and physiological stress levels, may be appreciably influenced by the surroundings; it appears that vistas dominated by vegetation may give relief from stress (41; 46; 45). On the other hand, it seems that health and discomfort problems are increasing among people that work in modern buildings, possibly due to new building materials and increased emphasis on energy saving (37). So, the impact of live plants on the welfare of people who living in the modern homes, should be considered. Two main hypotheses presented in this study are as follows: 1) There is a relationship between apartment live plants and personal aggression control. 2) There is a relationship between the gender and the attitude towards the live plants.

METHOD

To conduct this research, thirteen residential complex in Shiraz were selected as samples. The study is combined research and the data collection was done through library and indirect

observation methods. In the indirect method, the questionnaire was used that consisted of two main parts, one part related to the attitude toward live plants and their use in the apartments and the other part was the Ahvaz Aggression Questionnaire. The questionnaires were provided and randomly distributed among 100 persons which 54 persons of them are female and 46 ones are male. The collected data was investigated by correlation coefficient test (Spearman correlation) and Single-sample T-test and was evaluated using the 5-point Likert scale. Reliability of the questionnaires were assessed using Cronbach's alpha and for positive attitude toward live plants was seen to be 0.850 and for Ahvaz Aggression questionnaire was seen to be 0.920.

REVIEW OF LITERATURE

Many researches have been conducted about positive effects and benefits of plants on humans in different environments, for example: The impact of living plants on blood pressure and computer based productivity task among students (19), The impact of home plants to increase the welfare and health for humans (22), stress reduction For people who have plants in their room (20), improving air quality (48), stress reduction (4), speed recovery from stress (44), reduced mental fatigue (40), increasing productivity (19), a factor for behavior modification during the day (9), increasing the sense of focus (21), hasten recovery time (41; 42), slowing down the deterioration of physical and mental mood in elderly people (36), increasing the sense of relaxation and pleasure (11).

THE BENEFITS OF INDOOR PLANTS

The researchers found that if people who are depressed working with flowers and gardens at least 20 minutes in a week, will have a better mental condition. As research from the Institute of Health studies conducted on 20 thousand men and women in Scotland, it was found that household chores such as cleaning the house and especially care of plants' can reduce stress levels by 20 percent. The psychiatrists also know gardening and care of plants' as one of the best ways to deal with anger. Watering the flowers, shortening the dry branches and even planting flowers can be incredibly positive effect on the morale of people. Gardening is a fun

exercise. After about half an hour gardening, 250 to 500 calories energy will be burned and stress hormones will drop severely. Horticulture is an effective method to distract the mind from daily activities because there is not any positive outcome from working with plants without full attention and energy (33). In general, studies show that nature and plants can eliminate stress and mental fatigue (13; 43). A green environment in general may encourage people to have physical exercise. Physical exercise can have positive effects on different health determinants and reduces the risk of different kinds of chronic diseases (7). Physical exercise can be useful in the treatment of mental health problems like anxiety and depression (36). Lewis (1995) mentions a study by Owen (1994), who found that visiting a botanical garden lowers blood pressure and reduces heart rate. Studies show that the presence of vegetation will speed recovery from stress (45; 12). Different studies into the effect of physical activity show that activities like gardening are associated with health and reduce risk factors for coronary heart disease. Different target groups experience the same mental benefits of working with plants, such as increased sense of self-esteem, awareness and responsibility, especially when working in groups (10). Participation also increases feelings of value and worth (self-confidence) (38). By their beauty, colors and smell, plants in gardens enhance a sense of tranquillity and enjoyment (11). Other studies have shown that responsibility and control appear will slow down the deterioration of physical and mental condition of the elderly (36).

VISUAL COMMUNICATION WITH PLANT

Sensory perception of place is largely visual and on the other hand plant as a physical organism, will be understood by using visual communication, its beauty and fitness (3). All of the art that sense of vision cause create it, is called visual arts. Presence or absence of visual communications cause the feelings suchas pleasure and pleasant or unpleasant and indifference (26). For centuries, whether in the urban civilizations of the West, or in urban civilizations of the East, the assumption is that visual contact with plants or other natural elements, leading to physiological welfare and beneficial effects on human (45). Behavioral researchers of Rutgers University in New Jersey indicate that the communication with natureis a simple and important way to relax and refresh human spirit. Researches show buying and planting flowers and look at them provoke the sense of joy, relaxation and refreshing, positive thinking and the avoidance

of grief. Professor Jeannette Haviland Jones , psychologist in Rutgers University says: " watching and enjoying plants freshing, beauty, color and fragrance can change unbalanced mental condition and turn it into normal.

ANGER AND AGGRESSION

Aggression is one of the areas that is considered as a behavioral response to the threats (27). Aggression is a behavior that aims to harm oneself or others. In this definition, the intention is important which means if a harmful behavior intends on harming to oneself or others is considered aggression. (14). From biological neurons point of view, the neural system and endocrine system have been proposed as a physiological foundation for aggressive behavior (49). Megargee and Hokanson know aggression as a dominant and evitable consequence of failure (24). Berkowitz believes disturbing events, activate trends of aggressive and escape and which of these acts have been selected, depend on higher levels of cognition processes (2). Also, if a person assesses his aggressive behavior, inappropriate, he inhibits it, consciously. Aggressive behavior follows the principles of learning like other human behavior and can be explained the nature of the aggression in humans and animals by be provided based on the conditioning principles of response and functional tool (25).

QUESTIONNAIRE DATA ANALYSIS

The questionnaires of this research has been prepared and distributed several housing units in Shiraz. The following table shows the number and percentage of gender, age and education of those who filled out them.

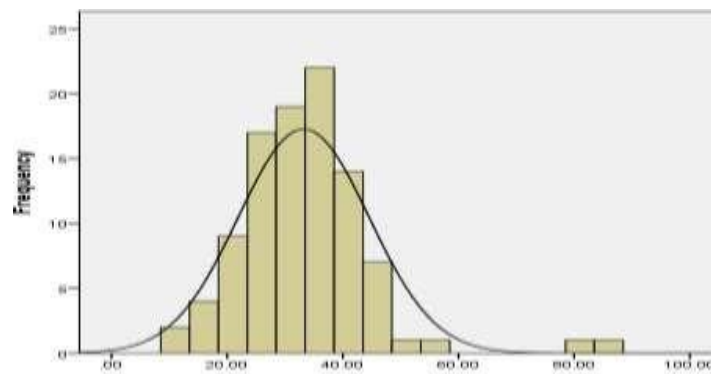


Chart 1. Participants' age distribution

Table 1. Descriptive statistics of the Participants' education

Education level	Frequency	Percent	Cumulative percentage
High school diploma	18	18.0	18.0
Diploma	25	25.0	43.0
Associate degree	14	14.0	57.0
Bachelor degree	39	39.0	96.0
Master degree	3	3.0	99.0
PhD	1	1.0	100.0
Total	100	100.0	

Table 2. Descriptive statistics related to participants' gender

Gender	Frequency	Percent	Cumulative percentage
Female	54	54.0	54.0
male	46	46.0	100.0
Total	100	100.0	

Table 3. Descriptive statistics related to participants' home area

Area	frequency	Percent	Cumulative percentage
less than 80	70	70.0	71.4
between 80 120	10	10.0	81.6
between 120 160	3	3.0	84.7
more than 160	15	15.0	100.0
Total	98	98.0	
Missing	2	2.0	
Total	100	100.0	

Table 4. The questionnaires reliability

Questionnaires	number of participants	number of questions	Cronbach's alpha	Split-half coefficient
Attitude toward live plants	100	10	0/85	0/87
Ahvaz Aggression	100	30	0/92	0/95

Table 5. Linear correlation between research's variables

variables	Attitude toward live plants	Aggression
Attitude toward live plants	1	-0/30**
Aggression	-0/30**	1

>0/001P**

As seen in the table 5, there is a significant negative correlation between the variables ($30 / 0 - = r, 001/0 > P$). This means by increasing positive attitudes toward flowers and live plants and using them in homes, aggression will be decreased and vice versa, by decreasing positive attitudes toward flowers and live plants and non-using them in homes aggression will be increased.

Table 1. Correlation coefficients between Individual Factors and the level of interest in gardening

Individual Factors	Correlation Coefficients	Sig.
Age	.113	.269
Education	-.110	.275
Gender	.016	.873
Home area	-.191	.060

Table 2. Correlation coefficients between Individual Factors and the level of aggression

Individual Factors	Correlation Coefficients	Sig.
Age	.032	.756
Education	-.086	.393
Gender	.019	.852

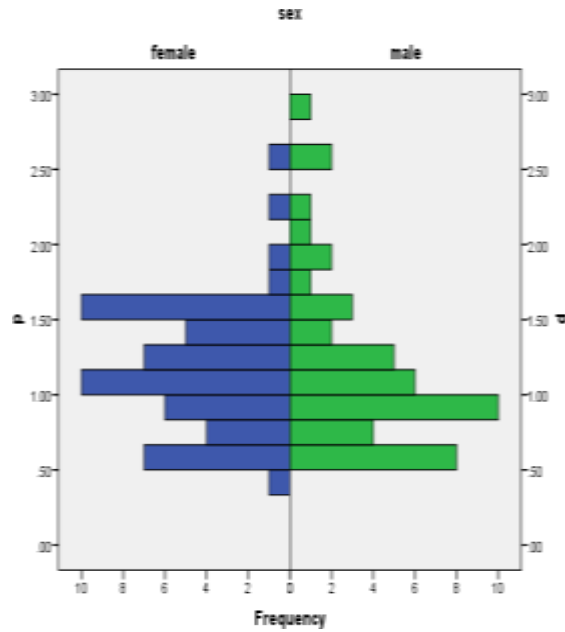


Chart 2. Aggression comparison between men and women

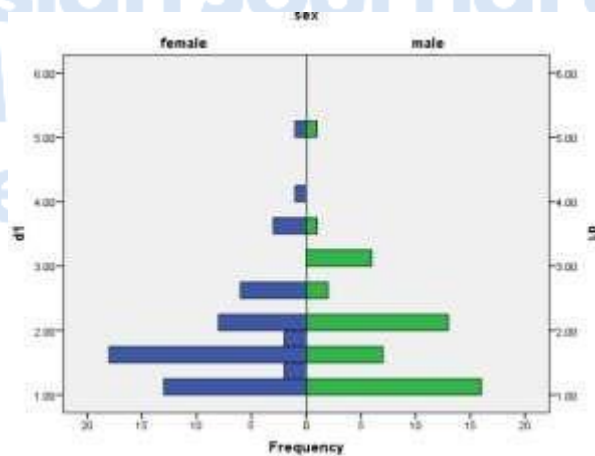


Chart 3. Positive attitude toward live plants comparison between men and women

DISCUSSION

As seen in the table 4, the questionnaires' reliability, was seen to be very good. Data were analyzed with SPSS software and several charts and tables that have been indicated for better understanding. Age are classified into 5 groups: 10-20, 20-30, 30-40, 40-50, 50 and up. According to the charts, the age range in which the highest level of interest and positive attitude

toward live plants and the lowest aggression have been seen, is the range between 30- 40. (Chart 2, 3). There is not any significant relationship between the individual factors such as: age, education, home area and gender with interesting in floriculture (Table 8). Also there is not any significant relationship between the individual factors such as: age, education and gender with aggression (Table 7). If the interesting and positive attitude toward live plants are classified into 5 groups: very low, low, medium, high and very high; we find that in very high group, the men and women were equal, in high group, women were more than men, in medium group, men were more than women, in low group, women were more than men and in very low group, men were more than women. Also if the aggression ranges are classified into 5 groups: very low, low, medium, high and very high; we find that in very high group, men were more than women, in high group, the men and women were equal, in medium group, women were more than men, in low group, men were more than women and in very low group, men were more than women. According to table 5, there is a negative significant correlation between the variables ($r = - 30 / 0, P < 0/001$). This means by increasing positive attitudes toward flowers and live plants and using them in homes, aggression will be decreased and by decreasing positive attitudes toward flowers and live plants and non-using them in homes aggression will be increased.

CONCLUSION

According to data analysis, the correlation between attitude toward live plants and aggression control is significant. By increasing positive attitudes toward flowers and live plants and using them in apartments, aggression will be decreased and aggression control will be increased and vice versa, by decreasing positive attitudes toward flowers and live plants and non-using them in apartments, aggression will be increased so aggression control will be decreased. It is better we bring live plants into the apartment and because of the family members' attention on their plants, they will forget their problems spontaneously. Caring the live plants and talking with them, provide a time for the family members to come together and cause create sense of empathy, solidarity and safety between them so it will also help improve the stress of external threats. According to the obtained results, for many people, the high cost of buying and caring live plants is the most important factor to prevent them from using live plants in their homes so researchers must find a solution for it.

RESEARCH PROPOSALS

- Compel designers to allocate the space in apartments for live plants and flowers.
- Put flower pots on the outside of the windows so we will watch the flowers rather than seeing the rough asphalt streets every day.
- For separate the spaces that do not require visual privacy, use versatile partitions that can be used as avases at the same time.
- Instead of disposal items that lost their function like soda or jelly glasses, turn them into vases with natural flowers.
- Government pay budget for citizens to preparation and maintenance of the plant.

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