



# Urban Eco-Psychological Attitude during COVID 19 'Lockdown': A Survey

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## ABSTRACT

This study is a preliminary qualitative survey seeking a possible and feasible combat-strategy for aggravated mental illness among city dwellers during COVID pandemic induced 'lockdown' and stress through urban green spaces. **Environmental psychology or eco-psychology** is the study of transactions between individuals and their environments and how the immediate environment can significantly affect human behavior. With the rapid and catastrophic spread of the virus and prolonged lockdown and isolation for humankind sans social interaction, travel and the likes, intervention through urban green spaces –their size, settings, structure in terms of quality and quantity, maintenance and heterogeneity may well contribute significantly for the psychological stability and calm, so crucially important for a healthy existence.

## Keywords

Environmental psychology, urban green space, mental health, stress reduction

## INTRODUCTION

Since the World Health Organization declared the COVID-19 outbreak a global pandemic, India went for a national lockdown from March 24, 2020. The lockdown ensured that hundreds of million people were effectively confined at home and many who were not infected by the virus were compelled to quarantine for the upcoming weeks. Capsized travel plans, indefinite isolation, panic over scarce re-sources and information overload became a recipe for unchecked anxiety and feelings of isolation.

A study, funded by the Nuffield Foundation with additional support from Wellcome and UK Research and Innovation launched the week before lockdown involving 90,000 adults, found depression levels had decreased particularly amongst those aged under 60. However, depression and anxiety were still highest in young people, people living alone, those with lower income, or diagnosed mental illness, who were living with children, and living in urban areas (Nursing Times, 2020).

Researchers at the University of Essex conducted a study and found out that women are more vulnerable to mental health problems during the corona virus pandemic than men. The study revealed that the number of women suffering from stress and loneliness during the COVID-19 outbreak has risen from 11 per cent to 27 per cent. On the other hand, the number of men suffering from at least one mental condition has reached 18 per cent from 7 per cent.

It may be mentioned that one in every seven person in India is affected by mental disorder, according to a paper published by the Indian Council of Medical Research (ICMR) in Lancet Psychiatry in December 2019 entitled 'The burden of mental disorders across the states of India: the Global Burden of Disease Study 1990-2017.' The study funded by the Bill and Melinda Gates Foundation and ICMR reported that among the mental disorders that manifest during adulthood, the highest was caused by depressive and anxiety disorders, followed by schizophrenia and bipolar disorder.

According to the Indian Psychiatry Society, the number of mental health cases – including anxiety and depression – has risen 20 percent since the lockdown was first announced in India. Many doctors and counsellors feel that the Central and State government should treat mental health as a public health crisis. Experts say that people dealing with mental health challenges may be more vulnerable than others during a public health crisis because:

- they are more likely to pick up infections
- accessing treatment can be more difficult for them
- the emotional stress of COVID-19 and social isolation worsens their pre-existing condition
- quarantine may prevent them from accessing their usual treatments, such as going to therapy sessions or practicing certain lifestyle choices

People living with depression during this pandemic may now find themselves:

- having difficulty accessing their medications
- facing unusually intense fear about the spread of COVID-19 and how it may affect their loved ones
- feeling extremely anxious about their finances
- feeling uncertain and confused about how to shop for necessities
- withdrawing more due to social isolation
- experiencing an increased sense of helplessness and hopelessness about the future

## OBJECTIVES

Against the backdrop of the crucial 'lockdown' period of COVID-19 pandemic it was found necessary to conduct a qualitative survey about the citizen's (residents of Kolkata and greater Kolkata, in this case) stand reflecting their eco-psychological attitude regarding the city greens and their reasons for the need and maintenance of greenery (public/private or both).

- a. To find out if the people of Kolkata and greater Kolkata have green space and whether that space is adequate for them
- b. To find out whether the green space (lawn/garden/park) provided to the urban dwellers by the government is sufficient in their opinion
- c. To find out the satisfaction of the people in having a self-maintained green space at their roof top/terrace/balcony/window-sill
- d. To find out whether the road in front of their residence (house/flat/complex) has ample trees, in their opinion
- e. To estimate the quantity of plants usually kept by the city dwellers in their homes
- f. To observe the purpose (religious/traditional/medicinal/academic) behind having plants at home
- g. To survey if plants are kept for the purpose of air purification and beautification
- h. To observe the duration city dwellers usually spend with plants
- i. To assess whether the subjects encourage and enjoy gardening
- j. To survey their preference for flowering and/or crop and/or plants with little or no maintenance
- k. To study whether the urban subjects have observed nature (birds/butterflies/insects) in connection with the surrounding greenery
- l. To comprehend the all important aspect, whether the surrounding greenery improves the mental health of the subjects during the stressful 'lockdown' period

## MATERIAL AND METHODS:

### Variables:

#### Dependent Variable:

- Eco-psychological attitude of the people of Kolkata and greater Kolkata

#### Independent Variable:

- Gender (16 males and 38 females)
- Profession (Employed 38/ Student 13/ Homemaker 03 )

- **Delimitations:**

The data was limited to 54 people/participants [both male and female] of Kolkata and adjoining areas.

- **Tools:**

An information schedule cum questionnaire (standardized and validated) was formulated by the researchers for collecting data.

- **Methodology:**

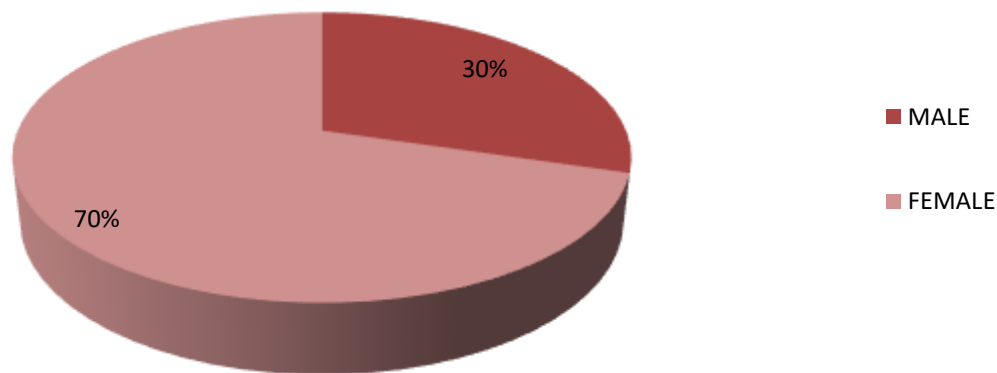
The study was designed on a survey based descriptive research methodology. The questionnaire was administered on the selected sample to collect data and the data was qualitatively analyzed (by percentage analysis) to describe further.

- **Sample:**

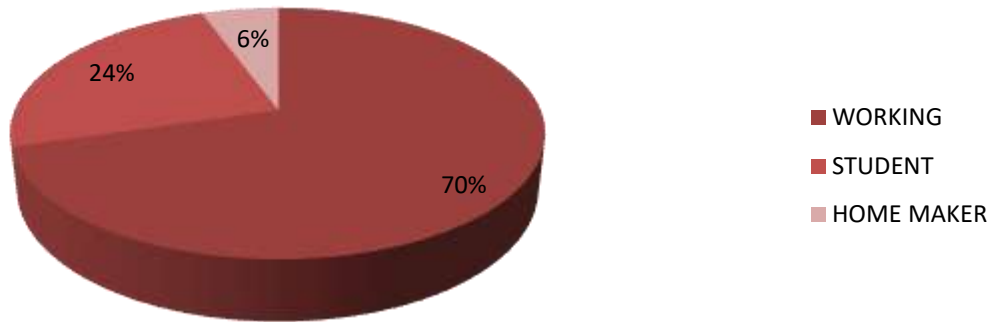
The sample comprised of 54 participants out of which 38 were female and 16 were male, living in different parts of Kolkata and adjoining areas between 16-40 years of age and incidental sampling technique was adopted.

Among 54 participants 38 were employed, 13 were students and 03 were homemakers.

**Fig. 1 GENDER WISE DISTRIBUTION OF SAMPLE**



**Fig. 2 PROFESSION WISE DISTRIBUTION OF SAMPLE**

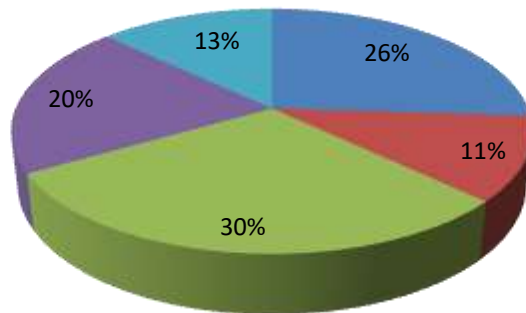


**RESULTS**

**Item-wise Percentage Analysis of the Entire Sample Comprising of 54 Participants:**

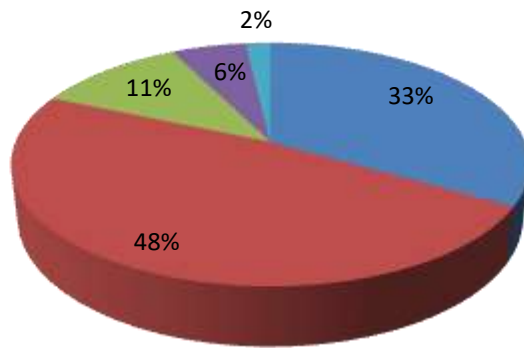
**Fig. 3 Item No 1. - Possess green space**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



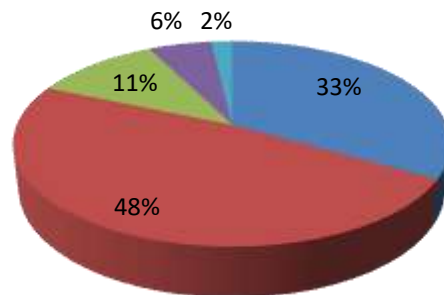
**Fig. 4 Item No. 2 - Adequate green space possession**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



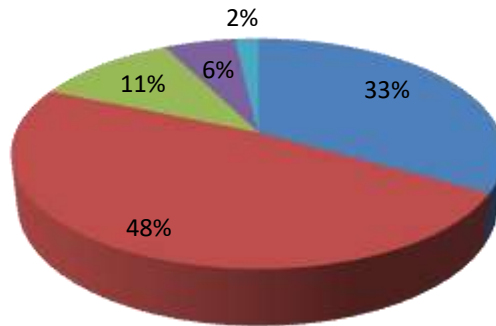
**Fig. 5 Item No. 3 -External agency provided Green space (lawn) sufficient**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



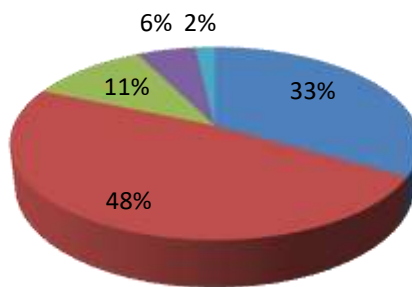
**Fig. 6 Item No. 4 - External agency provided Green space (garden) sufficient**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



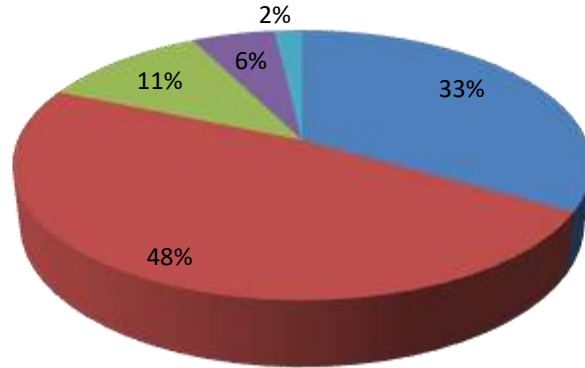
**Fig. 7 Item No. 5 - External agency provided Green space (park) sufficient**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



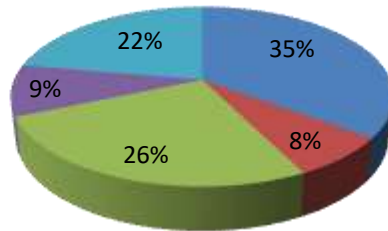
**Fig. 8 Item No. 6 - Possessing self-maintained green space (roof-top/terrace)**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



**Fig. 9 Item No. 7 - Possessing self-maintained green space (Balcony/Window - sill)**

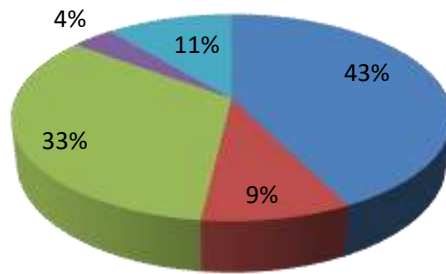
■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL





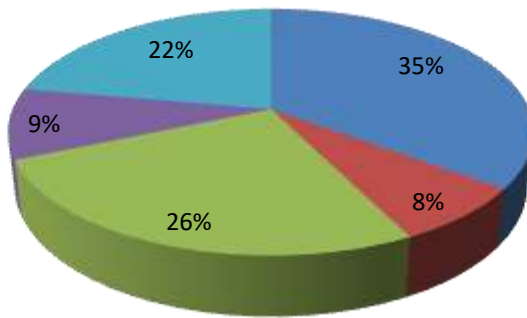
**Fig. 10 Item No. 8 - Road adjoining residence has sufficient trees**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



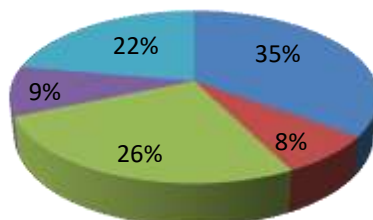
**Fig 11 Item No. 9 - House plants < 20 (approx)**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



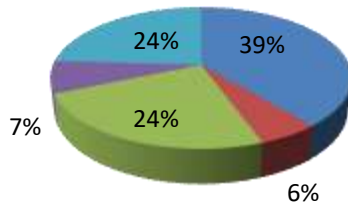
**Fig. 12 Item No. 10 - House plants number between 20 to 50 (approx)**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



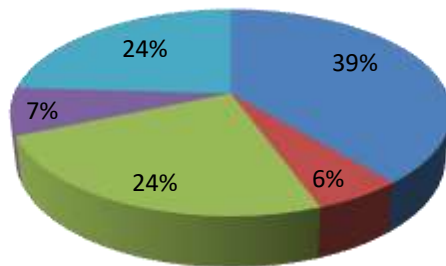
**Fig. 13 Item No. 11 - House plants > 50 (approx)**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



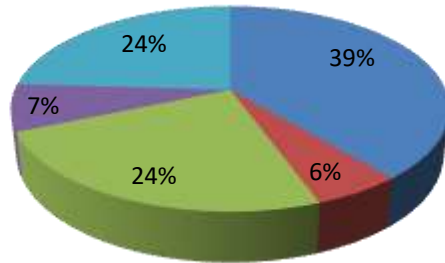
**Fig. 14 Item No. 12 - House plants for religious / traditional purpose**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



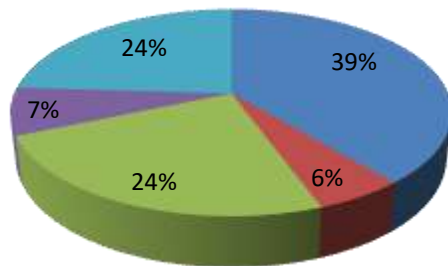
**Fig. 15 Item No. 13 - House plants for Medicinal purpose**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



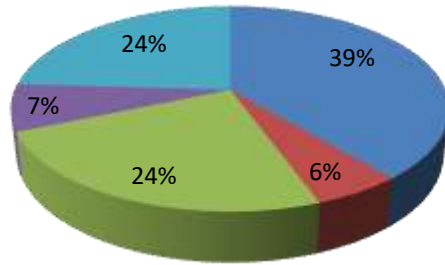
**Fig. 16 Item No. 14 - House plants for Academic purpose**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



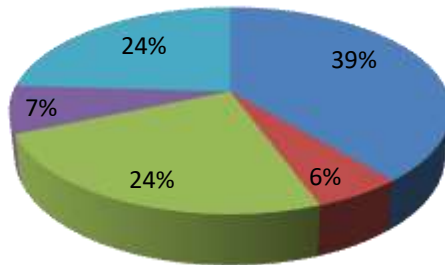
**Fig. 17 Item No. 15 - House plants for Air-Purification**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



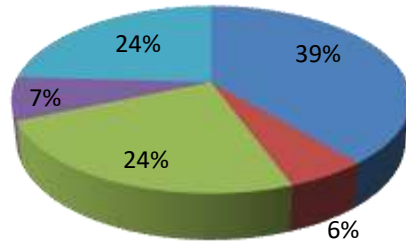
**Fig. 18 Item No. 16 - House plants for Beautification**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



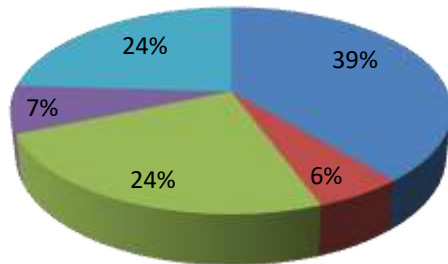
**Fig. 19 Item No. 17 - Butterflies/birds/insects noticed with plants**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



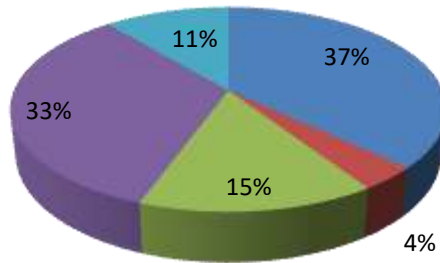
**Fig. 20 Item No. 18 - Restless /gloomy during 'Lockdown'**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



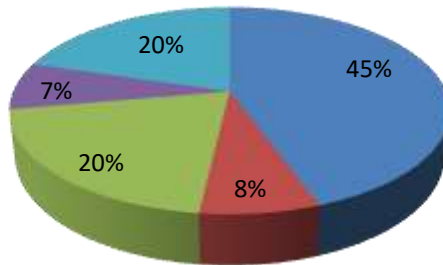
**Fig. 21 Item No. 19 - Peace/ calm in green spaces**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



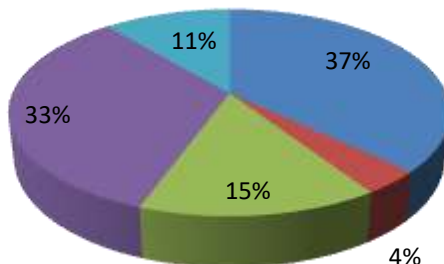
**Fig. 22 Item No. 20 - Time spent with plants < 30 minutes**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



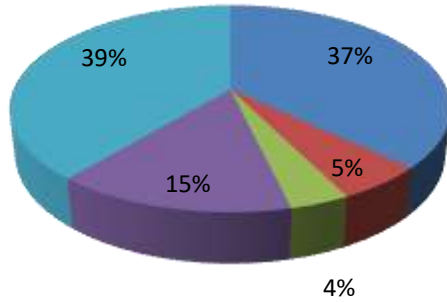
**Fig. 23 Item No. 21 - Time spent with plants (30 to 60 minutes)**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



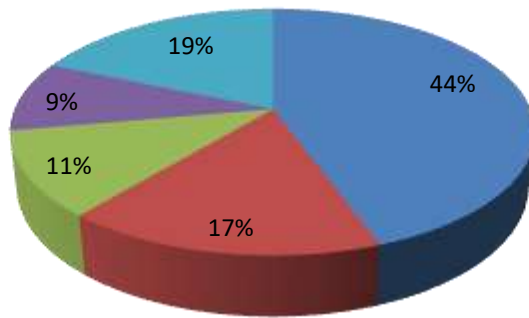
**Fig. 24 Item No. 22 - Time spent with plants > 1 Hour**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



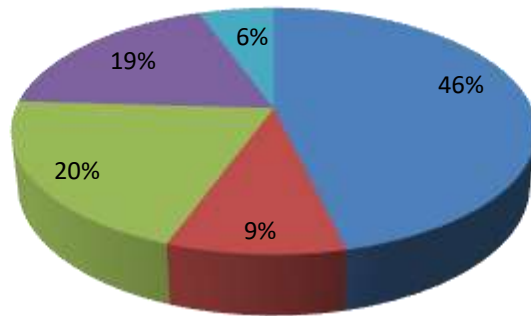
**Fig. 25 Item No. 23 -More than usual time spent with plants during 'Lockdown'**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



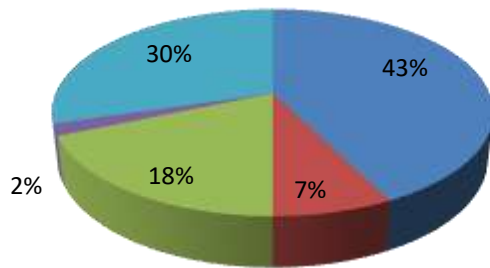
**Fig. 26 Item No. 24 - Enjoy gardening**

■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL



**Fig. 27 Item No. 25 - Preference for flowering plants**

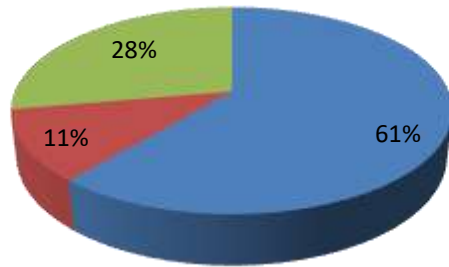
■ YES ■ VERY MUCH ■ SOMEWHAT ■ VERY LITTLE ■ NOT AT ALL





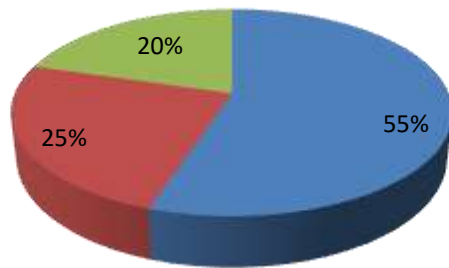
**Fig. 28 Item No. 26 - Preference for crop/  
vegetable plants**

■ YES ■ VERY MUCH ■ SOMEWHAT

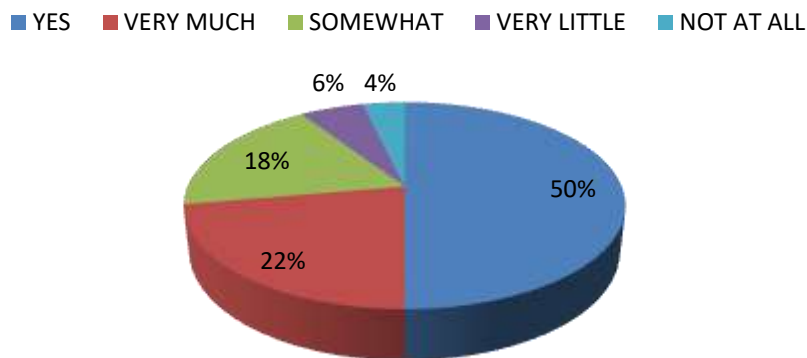


**Fig. 29 Item No. 27 - Preference for plants with  
little/ no maintenance**

■ YES ■ VERY MUCH ■ SOMEWHAT



**Fig. 30 Item No. 28 - Encourage gardening / love for plants**



## DISCUSSION

While the nationwide lockdown declared from March 24, 2020 confined millions to their homes and to some extent may have proved effective in helping to curb the spread of the severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) in India, it has not, perhaps, been conducive to the emotional and mental health of some. A recent study published on the preprint server *medRxiv*\* in May 2020 concludes that select groups might have suffered emotionally, and outlines measures to alleviate such potential harm. In this particular survey we found that 45% reported a definite sense of gloom and restlessness during the 'lockdown' while another 24% complained of feeling low in moderation (Fig.20).

**Environmental psychology or eco-psychology** is the study of transactions between individuals and their physical settings (Gifford, 2007). In these transactions, individuals change their environments, and their behaviour and experiences are changed by their environments. Considering the enormous investment society makes in the physical environment (including buildings, parks, streets, the atmosphere, and water) and the huge cost of misusing nature and natural resources, environmental psychology is a key component of both human and environmental welfare (Sen, 2010, 2017). In this survey we find that 41% subjects feel a sense of peace and calm in green spaces (Fig. 21), while another 15% feel somewhat at peace amidst greenery.

The UN Sustainable Development Goals aim to provide "universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities" by 2030. This recognizes the substantial link between green spaces and the improvement of general health (Sen, 2020a). In reality, urban green space is highly variable in its definition and can range from trees planted in the street, to children's play areas and even extends to 'blue spaces' such as water features. Alcock et al. (2014) meanwhile conducted studies in the UK, which found that overall surrounding 'greenness' is more beneficial than proximity to green spaces. In a practical sense this means that even the visibility of nearby trees and vegetation from urban dwellings has the potential to lower levels of mental fatigue, aggression and stress.

Since this study was confined to the megacity Kolkata and greater Kolkata, the relatively low 37% respondents possessing green space can be comprehended (Fig.3). But surprisingly, 81% reported satisfactory presence of lawns, parks and gardens provided by an external agency (Figures 5-7) and 81% reported adequate green space even in this over-populated metropolis (Fig. 4). 52% were satisfied with the green cover on the roads adjoining their residence (Fig.10). But then again, this study was conducted before the devastating tropical cyclone Amphan hitting Kolkata and neighbouring districts on 20<sup>th</sup> May, 2020 which literally created havoc with the urban greenery (Sen 2020b; Biswas and Sen 2020).

The natural environment is a restorative and therapeutic venue and refuge from the overload and stresses of modern life (Hartig and Staats 2003; Sen 2020c) and this is particularly evident in our study when 61% report that they spend more than usual time in green spaces, whether self-owned or external agency provided (Fig.25). Another 11% do the same in moderation. 42% spend more than an hour each day amidst Nature (Fig. 24). Hence the restorative and healing power of urban green spaces is well reflected in our work.

The fact that 53% spend less than 30 minutes among greenery (Fig. 22) while 41-42% spend more than that time (Figures 23 & 24) can be attributed to 70% respondents being women (Fig.1) and 70% being employed (Fig.2). We record 80% dwellers opting for plants with little or no maintenance (Fig. 29) and we can again correlate this to the fact that 70% respondents were women (Fig. 1) with an entire gamut of duties to perform during the lockdown with domestic help being unavailable. Besides 70% subjects are working and could safely be assumed to be working from home during this period. 24% are students with the stress of academic and career uncertainties (Fig. 2). 72% prefer crop/vegetable plants (Fig. 28) (to be expected during lockdown due to their low availability and cost, besides usefulness) as compared to only 50% preference for plants cultivated only for flowers (Fig. 27). Interestingly, no particular preference was seen in the subjects' choice among plants for religion or tradition, medicine, academic, air-purification and beautification (all recording 45%, Figures 14-18).

Since 70% respondents were women (Fig. 1) and 70% were working and 24% students (Fig.2), it can be expected that they had an awareness of the goodness of trees and even a love for them (Fig.30). Hence 81% reported self-maintained roof-top or terrace garden (Fig.8). Being an urban setting, a number of respondents live in flats or apartments where roof-top or terrace gardens are encouraged. 43% also possess green balcony or window (Fig. 9). Since space is a crucial limiting factor in urban set-ups 43% possess about 20-50 plants whereas 45% have more than 50 plants (Figures 11-13).

WHO describes how natural green spaces facilitate improved mental health through a series of pathways

### **Enhanced Physical Activity**

Physical activity is particularly beneficial for those with mental health illnesses in urban areas (Roe and Aspinall, 2011). Urban dwellers with access to green spaces enjoy (55%) and encourage gardening (a whopping 72%), a healthy outdoor physical activity (Figures 26 and 30).

### **Stress Reduction**

Contact with nature can have restorative benefits by alleviating high stress levels, and promoting mental relaxation (Hartig, 2007). In this study we too have found similar results (Fig. 21). Several medical studies carried out to analyse the effects of exposure to green, natural spaces on cognitive function have found reduced levels of cortisol (a blood marker of chronic stress) in people participating in activities in green spaces.

Unpleasant sights and sounds in the urban environment can also play a role in psychological stress (Sen, 2019a). Certain practical methods have been implemented and tested to try and mitigate these, such as bird calls, water sounds and noise buffering through vegetation barriers. In our study, we have reported 45% city dwellers observing birds, insects and butterflies in association with their urban greens (Fig. 19).

### **Social Contact/Cohesion**

Green spaces like parks may affect mental health by facilitating an improved sense of social cohesion, community, trust, acceptance/belonging and friendship, contributing to a reduction in feelings of loneliness, isolation and a lack of social support. Rather than being a purely spatial entity, when located in urban communities green spaces can foster strong ties to place, identity and belonging. (Sen, 2019b). Green spaces can provide critical spatial frameworks for social integration and networking, especially in children and adolescents; they “can play an important role in fostering social interactions and promoting a sense of community” (Kim and Kaplan, 2004).

## CONCLUSION

This study is a preliminary qualitative survey seeking a possible and feasible combat-strategy for aggravated mental illness among city dwellers during COVID pandemic induced 'lockdown' and stress through urban green spaces. Psychologists have much to offer in terms of understanding human-nature experiences and what motivates people to nourish and nurture such relationships. Conservation psychology clearly draws from environmental psychology, as well as from other sub-disciplines of psychology, but it is distinctive in its focus on the natural environment and its explicit outcome orientation. Like conservation biology, conservation psychology has a strong mission focus related to biodiversity conservation and environmental sustainability (Sen, 2018).

With the rapid and catastrophic spread of the virus and prolonged lockdown and isolation for humankind sans social interaction, travel and the likes, intervention through urban green spaces –their size, settings, structure in terms of quality and quantity, maintenance and heterogeneity may well contribute significantly for the psychological stability and calm, so crucially important for a healthy existence.

## REFERENCES

- Alcock, I., White, M. P., Wheeler, B. W., Fleming, L. E. & Depledge, M. H. 2014. Longitudinal effects on mental health of moving to greener and less green urban areas. *Environmental Science & Technology*, 48, 1247-1255.
- Biswas, R. and Sen, Supatra 2020 City Greens, Post Amphan: A Survey IJCRT Volume 8, Issue 6 pp1986-1993. <http://doi.org/10.1729/Journal.23791>
- Gifford, R. (2007). *Environmental psychology: Principles and practice* (4th ed.). Colville, WA: Optimal Books.
- Hartig, T. 2007. Three steps to understanding restorative environments as health resources. In: Thompson, C. W. & Travlou, P. (eds.) *Open Space: People Space*. Abingdon: Taylor & Francis.
- Hartig, T. and Staats, H. (Eds.) 2003 Restorative environments. *Journal of Environmental Psychology*, 23, 103-198. Special Issue focus [Restoration].
- Kim, J. & Kaplan, R. 2004. Physical and psychological factors in sense of community: new urbanist kentlands and nearby orchard village. *Environment and Behavior*, 36, 313-340.
- Roe, J. & Aspinall, P. 2011. The restorative benefits of walking in urban and rural settings in adults with good and poor mental health. *Health & Place* 17, 103-113.
- Sen, Supatra 2010 "Towards Sustainability: Through Environmental Psychology" in "Emerging Trends in Contemporary Education: Implications for 21st Century," ISBN 978-81-922305-0-4
- Sen, Supatra 2017 "Environmental Psychology: Integrating Psychology with Sustainability" in "Mission Sustainability: Through Environmental Education" pp.10-19 ISBN 978-81-928627-5-0
- Sen, Supatra 2018 Many Faces Of Resource Management: Blueprint for Sustainable Conservation in Muses Volume 1, pp 123-135 ISBN 978-93-5268-653-7
- Sen, Supatra. 2019a. *Blueprint for Sustainability: Reviewing the Indian Scenario*. Lambert Academic Publishing; ISBN 978- 620-0-23781-1

Sen, Supatra. 2019b. Sustainability Education: Integrating Psychology with Environment in Cognizance The New Vistas of Education and Psychology, Volume 1 pp. 11-22. ISBN 978-93-88207-26-3 32

Sen, Supatra. 2020a. The City Greens: Ushering Sustainable Urbanization. International Journal of Creative Research Thoughts (IJCRT), 8(4): 2689-2696 ISSN:2320-2882 Available at :<http://www.ijcrt.org/papers/IJCRT2004379.pdf>  
<http://doi.one/10.1729/Journal.23523>

Sen, Supatra 2020b Kolkata Greens, Post ‘Amphan’, IJRAR - International Journal of Research and Analytical Reviews, E-ISSN 2348-1269, P- ISSN 2349-5138, Volume.7, Issue 2, Page No pp.368-371, June 2020, Available at :<http://www.ijrar.org/IJRAR19W1172.pdf> <http://doi.one/10.1729/Journal.23702>

Sen, Supatra. 2020c. ‘Green’-Ing Kolkata: Creating A Sustainable City – An Overview, IJRAR - International Journal of Research and Analytical Reviews, E-ISSN 2348-1269, P- ISSN 2349-5138, 7(2): 743-752 Available at : <http://www.ijrar.org/IJRAR19L1484.pdf> <http://doi.one/10.1729/Journal.23607>

<https://www.nursingtimes.net/news/research-and-innovation/anxiety-and-depression-levels-are-falling-as-lockdown-eased-finds-study-04-06-2020/>

