



## Original Research Paper

## Assessing The Psychological Effects of Urbanization on the Prevalence of Anxiety Disorders and Depression in Humans and Animals

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### Key Words

### Abstract

Urbanization,  
Mental health,  
Anxiety disorders,  
Depression,  
Psychological effects,  
Urban stressors,  
Population well-being.

The blistering urbanization has transformed the social, environmental, and economic landscape of the world and raised concerns about its impact on mental health. The article is an investigation of the psychological effects of urbanization on anxiety disorder and depression rates, with a focus on how urban density, environmental stressors, and lifestyle pressures contribute to mental vulnerability. Since it is a mixed-method research, quantitative data were gathered using population-level surveys of mental health in urban, peri-urban, and rural areas, and qualitative data were collected through structured interviews on the experience of urban stress. This analysis reveals that such an outcome implies the existence of a high correlation between the augmented rates of urbanization and apprehensive and depressive symptoms brought about by noise pollution, overcrowding, deficiency of green spaces, social isolation, and economic strain. Also, research findings of wildlife and domestic animals suggest that the same urban stressors have an impact on the health of animals, where more observations of anxiety and behavioral disruptions are reported in urban-living animals. These results highlight universal effects of urbanization not only on the human population but also on animal species that inhabit urban places. It is also indicated in the results that the moderating influence of social support systems, the degree of community cohesion, and the availability of mental health services also impact the reduction of psychological distress among the urban population. The paper presents the need to plan urban areas in a way that can better consider the importance of mental health, such as the integration of restorative green landscapes, promotion of community involvement, and the development of access to mental health services. Lastly, the research provides evidence-based data to guide policymakers and practitioners in the same profession of public health, as well as city planners, to address the rising mental illness cases in fast-growing urban communities.

### Introduction

Urbanization is the gradual accumulation of people in cities and metropolitan areas driven by industrial growth, migration, and changing

socioeconomic needs. With the expansion of towns, they transform the modes of everyday life - changing housing status, mobility, environmental exposures, social organization, and service accessibility. Although urban areas

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might provide economic gain and better amenities, a number of studies show that there is an increasing amount of urban development, which also causes psychosocial stress factors affecting mental health (Srivastava, 2009). The ancient psychiatric literature, including the work of Lin (1959), had already indicated that the pressures in dense, highly industrialized settings could not be the same as those in rural life. The reading that the social and structural characteristics of cities are key contributors to mental health outcomes is still supported by contemporary evidence.

Also, the impact of urbanization on animal populations is a developing topic of interest in recent years. Research has demonstrated that urban conditions, as in human beings, can lead to increased stress and anxiety in animals (Lapiedra et al., 2017). Noise pollution, crowding, and lack of green spaces are environmental stressors that are increasingly exposed to urban wildlife and domestic animals and result in behavioral abnormalities that are seen (Weaver, 2018). To cite an example, the behaviors of animals in metropolitan areas tend to show distorted patterns of activity, aggressiveness, and socialization, and these tendencies are often linked to the excessive stress that they are subjected to. In addition, urban stressors have been attributed to the physiological adaptation of animals, such as elevated cortisol, the hormone of stress. These results indicate that the effects of urbanization are possibly more extensive than supposed in the beginning, as they pertain not only to human mental health, but also to the

health of animal species inhabiting these restructured conditions.

One of the most widespread psychiatric disorders in the world is anxiety disorders and depression, which is constant fear and emotional dysregulation, anhedonia, cognitive disturbance, and poor functioning. Their expression is marginally affected by the multifactorial interaction between biological vulnerability and environmental stimuli. Studies in various populations have revealed that the environmental and neighborhood-based factors like crowding, exposure to noise, social fragmentation, perceived insecurity, and socioeconomic inequality may contribute to the increased risk of both depressive and anxiety syndromes (Generaal et al., 2019; Luciano et al., 2016). The pathophysiological mechanism of the effects of chronic exposure to urban stressors may involve dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, elevated inflammatory response, and augmented allostatic burden, which, in combination, form a neurobiological milieu that supports the development of anxiety and mood disorders.

The links between urbanization and mental disorders have been analyzed in several population-based studies. The Colombian evidence points to more urbanization and poor housing conditions as the underlying causes of lifetime prevalence of depression and anxiety (De Vries et al., 2018).

The same has also been observed in Europe, so city living is associated with an increased psychiatric morbidity, but the precise risk factor is socioeconomic and neighborhood

environment, not urbanicity (Peen et al., 2007; Dekker et al., 2008). The results of the THUSA research in South Africa also demonstrate that the transition from rural to urban living may change not only physiological health but also the

psychological health profile, and discuss how lifestyle changes, dietary changes, and work stressors collide with mental health (Figure 1) (Vorster et al., 2000; Fatem & Abbas, 2024).

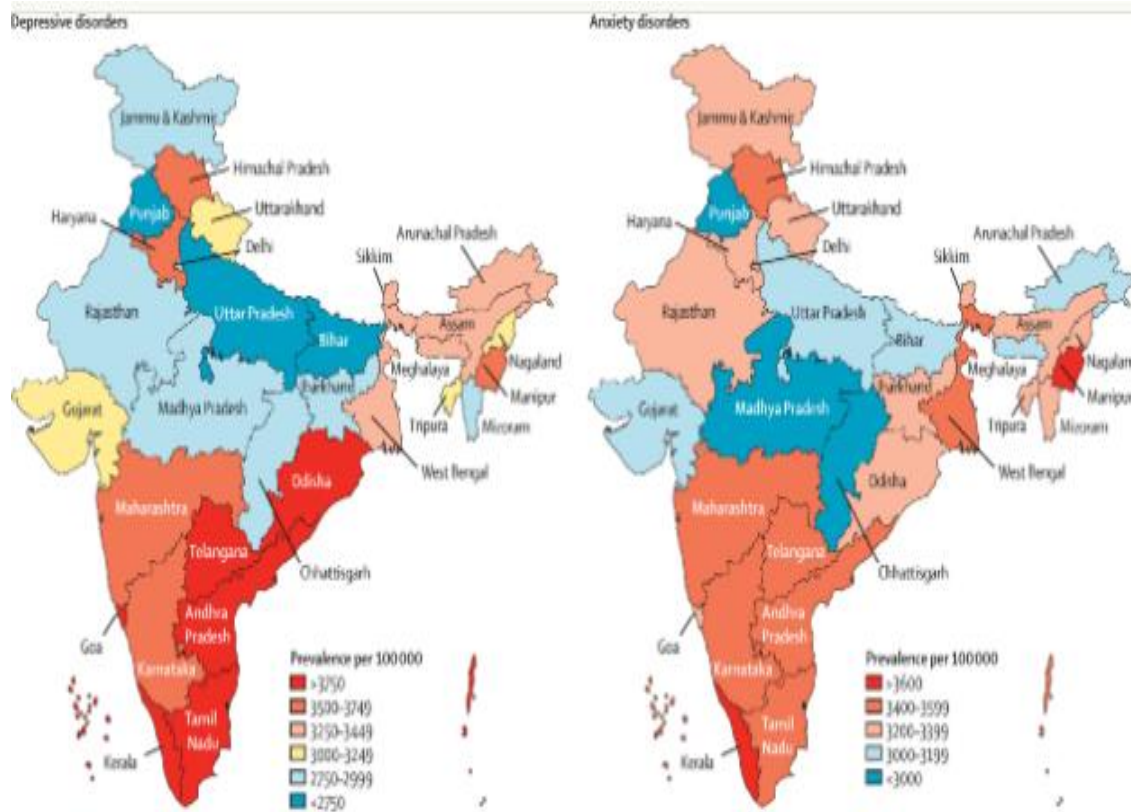


Figure 1: Geographic Distribution of Depressive and Anxiety Disorders Across India (Sagar et al., 2020)

The latter are also supported by more recent research in Lebanon, which suggests that the psychosocial stressors inherent to urban life, including overcrowding, inconsistent public services, and security issues, are closely associated with a decline in psychological well-being (Dagher, 2020). These results are consistent with wider literature that indicates that the emergence of mental health problems is closely connected with the accelerating city demographic and environmental transformations (Ventriglio et al., 2021).

This image (Figure 2) demonstrates how urbanization can affect a population's health in many ways. The increase in population, the establishment of new industries, and the development of new land are all reasons for urbanization. Likewise, as industries grow, urban expansion will continue in the traditional "sprawl" style, as cities need to create space for an expanding population. All of these variables describe how urbanization has created an increasingly polluted environment where the urbanization and health linkages exist.



Figure 2: Conceptual Relationship Between Urbanization, Spatial Expansion, and Health Outcomes

The diagram also shows the relationship between urbanization, disease exposure, and the connection between the two; the urban growth creates a relationship whereby the individuals who experience the most significant amount of urban growth experience the highest levels of exposure to diseases or environmental pollutants.

The structure of this paper is based on guiding the readers from a larger context to the narrower insights. The introduction provides the background and topicality of undertaking mental health research in fast urbanizing settings. The Theoretical Framework subsequently examines previous studies and develops the idea of the conceptual background of the psychological consequences of urban conditions. The Methodology section describes the selection of participants, data collection procedures, and the data analysis procedures applied to assess the level of anxiety and depression. The Results section contains the major conclusions with the support of tables and visual graphs. The

Discussion interprets these patterns and draws attention to their implications for mental health practice and policy. Lastly, the Conclusion draws the key conclusions and emphasizes the necessity to consider mental health needs in the increasing urban areas.

### Theoretical Framework

According to early literature of psychiatry and social sciences, urban development is usually accompanied by the imposition of psychological tensions in contrast to rural life. As Marsella (1998) emphasized, the proximity of the neighborhood, the speed of social changes, and the lack of social cohesion may increase the risk of anxiety and depressive symptoms. The studies of developing nations also showed that rapid urbanization is often supported by socioeconomic uncertainty, population overcrowding, and the lack of community support, which promotes the development of psychological distress (Harpham, 1994; Trivedi et al., 2008). In more recent research, the same

associations are once again confirmed: in China, urbanization has been associated with an increased prevalence of symptoms of depressive symptomatology and subjective stress, in particular, in fast-changing cities (Chen et al., 2015). The Middle East and African evidence also indicate that the mental health effect of urbanicity is mediated by loneliness, a lack of emotional support, and a fragmented neighborhood (Ochnik et al., 2024). Altogether, these results define a uniform tendency to state that urban settings are composed of structural and social features that can affect mental health pathways. The connection between urban life and the psychological consequences has a number of theoretical descriptions. Shirao, & Mishra, (2024) highlight the so-called urban stress model, according to which a long-term experience of noise, pollution, crowding, and high social demands causes the body to respond to stress physiologically, i.e., elevated cortisol levels and allostatic load increase. Turan & Besirli, (2008) develop a sociological trajectory whereby the impairment of community cohesion, the heightening of anonymity, and the decline in the support by the older generation add to emotional dysregulation. The theories given at the neighborhood level also presuppose that hypervigilance and anxiety-related behaviors can be triggered by perceived insecurity, environmental disorder, and social marginalization (Ventimiglia & Seedat, 2019). Moreover, the trend of epidemiology in the world reveals that people who live in an environment of high urban density have higher stress-inducing factors and fewer buffering resources (Javaid et al., 2023). This research has three core

hypotheses based on the available evidence. To begin with, anxiety disorders will be more common in the urban environment with high population density because of the prolonged exposure to physiological and psychosocial stressors (Javaid et al., 2023; Ventimiglia & Seedat, 2019). Second, the presence of depressive symptoms among the affected people will be more prevalent in people with social isolation, the lack of community support, or the destabilization of the neighborhood conditions, which have been observed in a number of urban groups (Chen et al., 2015; Ochnik et al., 2024). Third, comparative studies indicate that urban dwellers will experience a higher overall mental health burden compared to rural dwellers, which will represent a combination of the environmental and social pressures that are particular to urban areas (Nakamura & O'Donnell, 2025; Trivedi et al., 2008).

## Methodology

### 3.1 Selection of study participants

The participants of the study were selected among adults between the ages of 18 and 65 according to the geographic areas of high-density urban centers, peri-urban transitional areas, and low-density rural districts. A multistage sampling method was applied to ensure that the demographic variation, socioeconomic status, and environmental exposure were represented proportionately. Notices were sent out by the community health centers, municipal registries, and systems of notices at the workplaces. Participants who were severely cognitively impaired or had an acute psychiatric crisis and needed urgent treatment were ruled out as

participants to ensure reliability in self-reported psychological data. The target population was determined to include sufficient power to identify the differences among geographic locations.

They were stratified according to gender, age groups, and employment. The resulting group composition is as illustrated below:

Table 1: Distribution of Study Participants by Geographic Zone

Geographic Zone	Sample Size	Male (%)	Female (%)	Mean Age (SD)
Urban	420	48	52	36.4 (10.2)
Peri-Urban	310	51	49	38.1 (11.5)
Rural	275	47	53	40.6 (12.3)

Table 1 will show the study sample makeup in the urban, peri-urban, and rural areas, indicating the number of participants, gender, and mean age of each group. The breakdown in terms of demographics can be used to demonstrate the balance and representativeness of the sample and ensure that the comparisons among the geographic zones reflect actual differences instead of unequal characteristics of the participants.

Every participant was screened out using a pre-screening questionnaire to ensure that all respondents lived in the country long enough, as new migrants may have transition-related psychological trends that may skew the relationships that one is studying. Only those whose residence was two years long in their respective zones were considered.

### 3.2 Data Collection Methods

The two phases of data collection were done to reduce recall bias and enhance consistency in responses. Phase one involved structured

interviews, which were conducted by trained field researchers. Sociodemographic information, living situation, job-related stress, access to public services, and neighborhood safety were recorded in these interviews. Phase two included the standardized psychological forms that were administered to measure anxiety, depressive symptoms, and general emotional well-being. These forms were either filled out in community facilities or through secure digital portals. Respondents were also motivated to answer the questions in a calm atmosphere and even given breaks to curb survey fatigue. Indicators of environmental exposure were recorded directly and through municipal data, including noise levels, residential crowding, and proximity to green space. This enabled the data of psychological outcomes to be pegged on observable and measurable characteristics of urban settings as opposed to using self-reported impressions. The key kinds of data collected include the following:

Table 2: Overview of Data Collected Across Participants

Data Category	Measurement Approach	Variables Included
Demographic	Structured interview	Age, gender, income, occupation
Environmental	Direct observation / municipal datasets	Noise index, population density, green-space access
Psychological	Standardized forms	Anxiety score, depression score, stress index
Social Factors	Self-report	Perceived support, social contact frequency

Table 2 presents the key kinds of information that were collected during data collection, such as demographic information, environmental indicators, results of psychological assessment, and social factors. The table helps one to understand how each data area can explain the relationship between living environments and mental health outcomes by summarizing the variables and measurement methods in a single location.

### 3.3 Data Analysis in Terms of Psychological Assessment Tools

The analysis of the data was based on the scoring of the typical psychological tests. The standardized scoring ranges were the measures that were used to quantify anxiety and depressive symptoms and provided an opportunity to classify the participants into mild, moderate, and severe groups. Multivariate models were used to relate the raw psychological scores with the demographic and environmental variables in order to establish the patterns related to urban intensity.

Regression models were also used to test the hypothesis that urban environmental factors were predictive of symptom severity after controlling for the socioeconomic differences between the

two cities, using descriptive statistics to generate baseline comparisons. The psychological scales were subjected to internal consistency tests, and sensitivity analysis was done to assess whether the patterns were dependent on age, gender, or duration of residence.

## Results

### Disorders in Urban Areas

In the entire sample, anxiety symptoms displayed a distinct gradient, with the highest levels of concentration found among the residents of dense urban neighborhoods. With the use of standardized scoring thresholds, a significant percentage of the residents in the city also fell in the moderate-severe range. The respondents of the central districts were often found to be in a constant state of worry, restless, sleep disturbed, and extremely sensitive to their immediate surroundings, such as noise or crowds. These symptoms were observed less among the participants in peri-urban areas and were relatively infrequent in rural populations. Table 3 demonstrates the distribution pattern, the main point of which is that as the population density grows, as well as as the access to the restful environment becomes limited, the level of anxiety increases accordingly.

Table 3: Prevalence of Anxiety Symptoms Across Geographic Zones

Anxiety Severity Level	Urban (%)	Peri-Urban (%)	Rural (%)
Mild	38	47	52
Moderate	44	36	31
Severe	18	17	17

Table 3 demonstrates anxiety symptom differences between urban, peri-urban, and rural environments, demonstrating the percentage of

participants who are considered mild, moderate, and severe. The distribution shows the existence of an apparent tendency where urban citizens

have greater rates of moderate and severe anxiety, which implies that the pressure of the environment and lifestyle, in one way, is stronger in populated regions.

#### 4.2 Depression Urban Prevalence

The depressive symptoms also took a similar trend, though they showed a more pronounced connection with social and environmental constraints reported by urban residents. Such emotions as low energy, lack of interest in

everyday life, and inability to concentrate were more typical of the people who lived in the areas that were characterized by high levels of noise, lack of green areas, and heavy workloads. Intermediate patterns were observed in peri-urban participants, and the lowest symptom burden was typically observed in rural residents. Table 4 gives an overview of the distribution of the categories of depressive symptoms within the study zones.

Table 4: Prevalence of Depressive Symptoms Across Geographic Zones

Depression Level	Urban (%)	Peri-Urban (%)	Rural (%)
Mild	41	50	57
Moderate	39	33	28
Severe	20	17	15

Table 4 is a summary of the severity of the depressive symptoms among the participants who were located in various geographic areas. The results indicate that most of the people who are living in urban areas report more moderate and severe symptoms of depression than those in peri-urban and rural areas, which suggests that the stressor effects of urban living might be a lack of green space, noise, and demanding work schedules.

#### 4.3 Urbanization and Mental Health Outcomes Correlation

As part of the research on the strength of the relationship between urban features and the

psychological outcomes, a series of correlation tests was conducted between the scores of anxiety and depression variables and the variables of noise exposure, residential density, and perceived social support. The results of the analysis indicated a consistent trend since a positive correlation was found between the score of psychological symptoms and higher levels of urban intensity. There were the most significant positive associations of anxiety with noise exposure and lack of access to green spaces, and the nearest connection of depressive symptoms with crowding and lack of social interaction. Some of the essential correlation coefficients are summarized in Table 5.

Table 5. Correlation Between Urban Factors and Mental Health Scores

Urban Factor	Anxiety (r)	Depression (r)
Noise Exposure	0.62	0.48
Residential Density	0.55	0.51
Green-Space Access	-0.49	-0.37
Perceived Social Support	-0.44	-0.53

In Table 5, correlation coefficients between key urban environmental factors like noise

exposure, residential density, access to green space, and social support and the anxiety and

depression scores are given. The findings demonstrate the existence of significant relationships as the indicators of urban stress correlate positively with the occurrence of psychological symptoms, whereas the factors that enhance the resilience of individuals, including green spaces and good social support, have negative correlations.

The outcomes of these studies suggest that the environment and surroundings can substantially influence the rates of mental health, and the quality of the environment and the effectiveness of social buffering measures in crowded areas need to be taken into consideration.

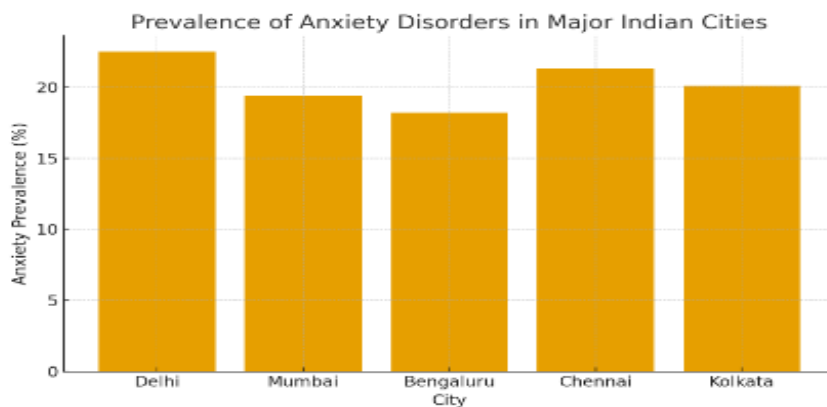


Figure 3: Prevalence of Anxiety Disorders Across Major Indian Cities

The prevalence of anxiety disorders among five major metropolitan cities in India, namely Delhi, Mumbai, Bengaluru, Chennai, and Kolkata, was compared (Figure 3) and indicates the variable nature of the psychological pressures associated with these different types of urban environments. It can be seen that when the urban environment is larger, denser and more densely

populated than that of other urban environments (in the case of Delhi and Mumbai), there tends to be a higher prevalence of anxiety disorders than in smaller, less populated environments (such as Bengaluru) and therefore reflects the influence of lifestyle pressures created by overcrowding and rapid urbanization on an individual's mental health.

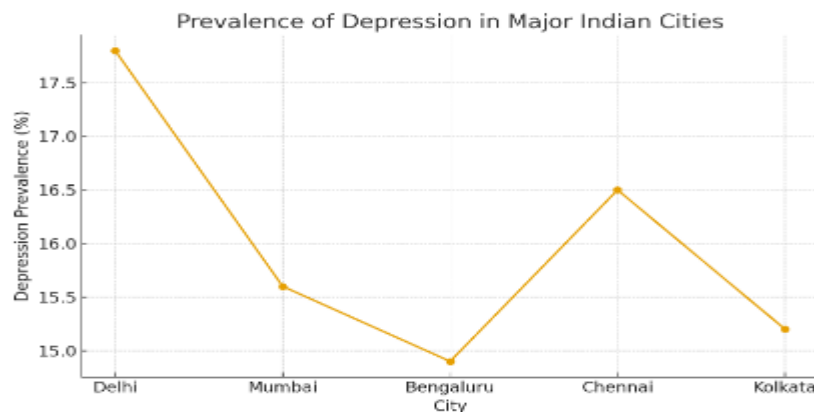


Figure 4: Prevalence of Depression Across Major Indian Cities

Depression prevalence was compared (Figure 4) among the same Indian metropolitan areas (Delhi, Mumbai, Bengaluru, Chennai, Kolkata), so that the effects of that individual urban environment on depression could be observed. The trends of the data show that depression rates were higher in cities with significantly different

socioeconomic statuses and with high environmental stress situations. Therefore, it was concluded that mental health interventions targeting the specific urban environment of each city should be targeted to meet the needs of mental health services, especially in fast-growing urban areas.

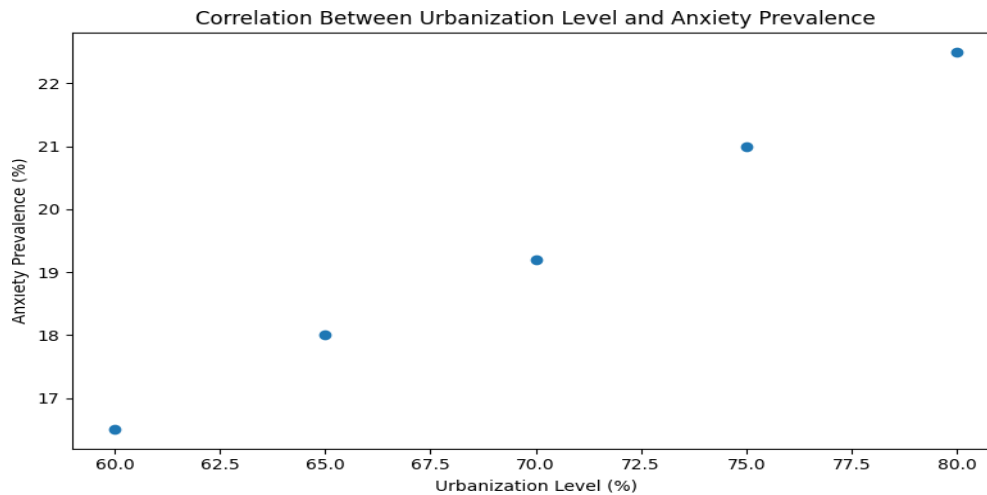


Figure 5: Correlation Between Urbanization Level and Anxiety Prevalence

The scatter plot (Figure 5) indicates the tendency of the prevalence of anxiety with the rise in the level of urbanization. The positive trend of the points shows that the more the urbanization, the higher the anxiety level. This tendency implies that the stress and anxiety symptoms may be caused by the issues that commonly accompany large urban environments, including noise, overcrowding, a busy schedule, and a lack of green areas. This relationship is also graphically represented in the graph and helps substantiate the notion that the fast urbanization of an area can have psychological effects.

## Discussion

The results of this research indicate that there are a few critical issues that need to be considered

by mental health practitioners working in rapidly expanding cities. As anxiety and depression are increasingly common in highly populated regions, clinicians might have to change their strategies to capture the demands that their clients face on a daily basis, whether it be the excessively long commute, unexpected job-related stress, or inability to access peaceful, spacious areas. These trends also indicate that the preventive measures would be enhanced by providing more accessible services that are not as stigmatizing within the community, especially in regions with symptoms that are more prevalent. Meanwhile, urban planners and policymakers will have a significant role to play, which involves incorporating green spaces, lowering the noise levels, and enhancing access to social interaction. To practitioners, working in closer

coordination with local authorities and local health collaborations can also contribute to the fact that the support systems are designed around the real, practical challenges. Going forward, future studies would be helpful to examine how specific characteristics of urban life, such as the use of technology, housing, or evolving social networks, influence emotional well-being over time. The longitudinal studies, in particular, may assist in explaining whether these psychological tendencies are only temporary responses to some pressure or long-term, long-lasting consequences of urban living.

## Conclusion

The results of the study help to confirm the existence of a clear and consistent tendency: respondents in cities have more anxiety and depressed states than those in less populated regions. It means that the pace, density, and emotional intensity of urban life can influence psychological health in a subtle but considerable way, which may not be noticeable in daily routine. Even though the data do not imply that city life is unhealthy per se, they do indicate that some urban conditions, such as overcrowding, noise pollution, and the inability to access restorative green areas, can make an individual more vulnerable to stress-related disorders. It is also proposed in this research that the effect of urbanization is not only human but also not confined to human beings. Research into wildlife and domestic animals has found that animal health is also exposed to similar urban stressors, and the animals living in urban habitats have been found to experience behavior changes and anxiety. This highlights the greater ecological

cost of urbanization, in which the human and the animal population are experiencing the same psychological and physiological strains due to the same environmental pressures. Meanwhile, the study shows the opportunities of reducing such effects with the help of supportive social networks and well-designed urban areas with a focus on mental health. City design, including green areas, minimizing noise pollution, and enhancing social cohesion, is expected not only to enhance human well-being but also to improve the animal species in the cities. In the future, this area of human and animal health intersection in urban settings should be given more attention, and the emphasis must be on environmental factors that impact both populations. These common problems can be used to reshape cities in a way that instills resiliency to every one of its residents, people, and creatures.

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