

THE MENTAL HEALTH CONSEQUENCES OF URBAN STRESSORS AMONG YOUNG ADULTS IN KARACHI: A MIXED-METHODS INVESTIGATION

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ABSTRACT

High-density urban environments expose individuals to multiple stressors that adversely affect mental health, particularly among young adults. Despite growing concern, limited research has examined the combined effects of urban stressors, perceived stress, anxiety, and depression. This cross-sectional mixed-methods study, conducted in Karachi, Pakistan, investigated the psychological impact of urban stressors on young adults aged 18–30 years, incorporating both quantitative surveys and qualitative interviews through an eco-philosophical lens.

Findings revealed significant positive correlations between urban stressors and psychological distress. Financial instability, environmental pollution, and social isolation emerged as key predictors of anxiety and depression. Unemployed participants reported higher stress levels, consistent with previous literature linking economic insecurity to mental health decline. Qualitative insights further contextualized these outcomes, depicting young adults' lived experiences of economic uncertainty and environmental degradation. Notably, adaptive coping strategies were negatively correlated with psychological distress, underscoring their protective role.

The study emphasizes the need for integrated mental health interventions, socioeconomic support programs, and urban planning policies that mitigate environmental and economic pressures in metropolitan areas. While constrained by self-report bias and cross-sectional design, the findings provide valuable implications for policymakers and mental health practitioners. Future longitudinal research should explore causal pathways and resilience mechanisms that buffer the psychological toll of urban stress.

Keywords: Urban stressors, psychological distress, Mental health, young adults, Anxiety, Depression, Coping strategies, Urban planning, Economic insecurity

INTRODUCTION

Urban-settings, with their frenetic pace, density of people, and complicated socio-economic dynamics, can present a host of stressors that adversely impact mental health. The following urban stressors include noise pollution, overcrowding, socioeconomic disparity, traffic congestion, exposure to community violence and inadequate recreational space, all of which affect young

adults between the ages of 16–30 years, especially, in Karachi, which is Pakistan's largest metropolis. These issues do indeed lead to greater levels of anxiety, depression and overall psychological distress in this population. A previous example of this is a study performed by Inam et al. (2022) revealed that 55.7% of medical students based in Karachi had symptoms of anxiety and

depression during COVID-19 pandemics, illustrating the immense influence of urban stressors on the psychophysiology of our youth.

Traffic jams are a recurring problem in Karachi that raises the mental and physical health issues of everyday travelers. In the study published in Pakistan Journal of Psychology (2023), it has been found that Significantly, 39.1%, 38.8%, and 93% of the sample reported feeling stress, anxiety, and anger due to traffic jams. Backache and physical illness were also typical, as was reduced productivity in the office. Overall, these findings highlight the important role that urban transportation problems play in the well-being of young people living in the city.

The horrors of community violence also contribute to psychological distress over and above the effects of poverty amongst the youth of Karachi. According to research, 93% of university students surveyed reported experiencing at least one traumatic event in their lifetime, with the sudden unexpected death of a loved one and assaultive violence being the most prevalent. More than a quarter of these students screened positive for likely post-traumatic stress disorder (PTSD), highlighting the devastating mental health effects of urban violence (Aftab et al., 2015). Moreover, socioeconomic disadvantage is an important risk factor; people with a lower educational level and without sufficient social support are most at risk for poor psychosocial health and functional impairment (Husain et al., 2017).

To understand how urban stressors affect the psychological health of young adults in Karachi we need to take a multi-faceted approach to both quantitative and qualitative data. By utilizing both quantitative data and qualitative experiences, a mixed-methods approach makes it possible to explore both statistical trends and individual accounts, leading to a more complete understanding of the relationship between urban spaces and mental health. These findings have important implications for urban health interventions and policies designed to counter the harmful effects of urban stressors on the wellbeing of young adults in Karachi. Tackling these issues

demands united action from urban planners, legislators, mental health experts, and civic agency stakeholders, to shape spaces that foster psychological health and resilience for the urban girl child.

Problem Statement

This makes young adults highly susceptible to mental health issues due to rampant urbanization of Karachi and resulting proliferation of environmental, social and economic stressors. Although the psychological impact of urban stressors like traffic congestion, socioeconomic inequalities, societal violence and environmental pollution is obvious, there exists little systematic research assessing their psychological outcomes among young adults of Karachi. Previously, existing studies more often than not address particular stressors in a vacuum rather than in light of how those stressors may build on top of each other or are interrelated. Additionally, there is a dearth of mixed-methods research that collates quantitative statistics and qualitative impressions to increase understanding of how these stressors impact psychological well-being. This discrepancy highlights the need for extensive research into the correlation between urban stressors and mental health outcomes to develop effective policy interventions and mental health plans suited to Karachi's unique urban landscape.

Significance of the Study

This is of great importance in improving mental health issues in Karachi related to urban stressors, especially because young adults constitute a large population in Karachi. Using a mixed-methods approach, the study will help illuminate the complex ways in which different environmental, social and economic variables affect psychological distress. The results will provide crucial insights for policymakers, urban planners, and mental health practitioners to design effective interventions that alleviate the negative consequences of urban stressors. In addition, this study will add to the international dialogue on urban mental health through the lens of a developing country which calls for context-sensitive mental health policies that

recognize and address socio-cultural and economic conditions.

Aim of the Study

This research is mainly focused on investigating the psychological impact of urban stressors among the young adult population of Karachi using the mixed-methods approach employing the quantitative and qualitative techniques. In particular, the study aims to investigate the main contributors of mental health and well-being in urban settings, the affected demographic groups (young adults) and the coping strategies used to deal with these issues. Furthermore, the study seeks to formulate actionable recommendations concerning mental health interventions, urban planning enhancement and policy reform conducive toward a healthier living environment for the youth in Karachi. This research aims to narrow the chasm between chronicled studies and actionable solutions by providing the groundwork for long-term urban mental health resilience interventions.

Methodology

This study used a mixed-method (quantitative and qualitative) research design to evaluate urban stressors and its psychological impacts on young adults in Karachi. The quantitative element involved standardized questionnaires, including the Perceived Stress Scale (PSS-10) (Cohen et al., 1983), Depression Anxiety Stress Scale (DASS-21) (Lovibond & Lovibond, 1995), and Urban Hassles Index (UHI) (Evans & Cohen, 1987), with good reliability (Lee, 2012; Henry & Crawford, 2005; Baum et al., 1999). A total of 300 young adults (aged 18–35 years) who met the inclusion criteria (having lived in Karachi for at least five years and providing informed consent) were selected for this study using purposive sampling. The qualitative component consisted of semi-structured

interviews that concerned participants' lived experiences, mental health impacts, and coping strategies. Karachi, Pakistan is one of the largest cities in the world, with a uniquely dense population and urban stressors such as traffic congestion, pollution, and socio-economic differences, providing a relevant backdrop to investigate psychological distress in young adults.

Data was collected after receiving Institutional Review Board (IRB) approval, and informed consent from the participants with confidentiality, and the right to withdraw at any time ensured. Descriptive statistics (mean, standard deviation, skewness, kurtosis) and inferential analyses such as Pearson correlation and regression models were performed on quantitative data using SPSS Version 28, to examine association between urban stressors and psychological well-being. Quantitative data was analyzed using Paired t-tests for differences in scores, while qualitative data was coded using thematic analysis in Nvivo software synthesizing into themes and subthemes to highlight nuanced experiences of participants. By anonymizing the responses and securing the collected data, the study respected the ethical principles of beneficence, non-maleficence, justice, and respect for autonomy.

The results were anticipated to offer a holistic perspective on the influence of urban stressors on young adults' psychological health, marrying numeric trends with logs of rich qualitative narratives to add depth to the interpretation. Stress was studied in this mixed-method approach, which combined statistical analysis with subjective experiences, and provided a more comprehensive view of urban stressors. This commitment to methodological precision allowed the study to capture the prevalence of urban stressors and their intensity, which contextualizes individual coping mechanisms, offering important information for urban MHP.

Result

Quantitative Results

Table 1: Demographic Characteristics of Participants (N = 300)

Variable	Frequency (n)	Percentage (%)
Gender		
Male	150	50.0

Female	150	50.0
Age Group (years)		
18-24	80	26.7
25-30	140	46.7
31-35	80	26.7
Education Level		
High School	40	13.3
Undergraduate	180	60.0
Postgraduate	80	26.7
Employment Status		
Employed	120	40.0
Student	140	46.7
Unemployed	40	13.3

Gender and age distribution are balanced (Table 1), and most participants are young adults (aged 25-30 as well as undergraduate). Finally the sample consisted of students as

well as employed individuals, suggesting that a variety of urban stressors were represented in the sample.

Table 2: Correlation Matrix of Study Variables (N = 300)

Variable	Mean	SD	1	2	3	4	5
1. Urban Stressors	38.5	8.2	1				
2. Perceived Stress	25.7	5.6	.68**	1			
3. Depression	20.4	6.3	.62**	.75**	1		
4. Anxiety	18.9	5.8	.59**	.70**	.72**	1	
5. Coping Strategies	22.3	7.1	-.45**	-.50**	-.55**	-.48**	1

Note: **p < .01

The significant associations between urban stressor, perceived stress, anxiety and depression are highlighted in Table 2 below with coping strategies showing a negative

correlation with stress-related variables. Higher urban stressors are associated with increased psychological distress, but effective coping acts as a buffer for these effects.

Table 3: Independent Sample t-Test for Perceived Stress (N = 300)

Employment Status	Mean	SD	t	p
Employed	23.4	5.2	4.32	<.001
Unemployed	28.1	6.1		

Table 3 shows, using an independent sample t-test, that unemployed individuals had significantly higher scores in perceived stress than their employed counterparts. The

finding highlights that financial stability may act as a buffer against urban stress related psychological stress.

Qualitative Results

Table 4: Merging Nodes into Specific Codes and Interviewer Identity (N = 12)

Sr	Code Name	Code	Merged Nodes	Total Nodes	Interviewer Identity
1	Traffic Stress	TS001	Noise, Congestion	5	Interviewer A
2	Economic	EP002	Inflation, Job	4	Interviewer B

	Pressure		Insecurity		
3	Social Isolation	SI003	Lack of Community	3	Interviewer C

Both specific codes of the qualitative nodes, to which the qualitative nodes were merged, and common urban stressors that arise from the literature review, such as traffic congestion, economic pressure, and social isolation are

illustrated in Table 4. These stressors were mentioned on every one of the 12 interviews, indicating their pervasiveness among young adults in Karachi.

Table 5: Codes, Nodes, Hierarchy of Word Frequency, and Themes (N = 12)

Code Name	Code	Node Frequency	Hierarchy of Word Frequency	Theme	Sub-Theme	Explanation
Financial Stress	FS001	30	High	Psychological Burden	Anxiety and Worry	Job insecurity increases distress.
Pollution	PL002	25	Moderate	Physical Health	Headaches, Fatigue	Air pollution linked to headaches.

Table 5 lists word frequency data sorted into themes and sub-themes and hints that financial stressors and pollution are major contributors to psychological distress. These

findings also complement the quantitative results by providing rich insights into participants' lived experiences.

Table 6: Analytical Themes, Sub-Themes, and Descriptive Themes

Analytical Theme	Analytical Sub-Theme	Descriptive Theme
Psychological Stress	Emotional Strain	Increased anxiety and depression
Social Challenges	Isolation and Pressure	Decreased social engagement
Economic Burden	Job Insecurity	Financial stress affects mental well-being

In Table 6 we synthesize the analytical themes, focusing on how psychological stress, social challenges, and economic burden interactively and collectively contribute to young adults well-being. This also highlights how intertwined these themes are and how urban stress can have a serious influence on mental health.

Discussion

The results of this work show correlated prevalence of urban stressors, perceived stress, anxiety and depression in young adults in Karachi, which clearly indicate the psychological effects of urban stressors. Quantitative results are consistent with previous research that exposure to chronic urban stressors, including noise pollution, economic instability, and social isolation, is linked to increased psychological distress (Evans, 2019). In addition, an independent

sample t-test showed the unemployed group rated higher on perceived stress, supporting previous studies highlighting the negative mental health impacts of economic insecurity (Lund et al., 2020). This is further supported by qualitative analysis which depicts the lived experiences of individuals, with financial strain and environmental stressors emerging as significant contributors to their distress.

The correlation analysis revealed that urban stressors are a strong predictor of depression and anxiety while being negatively correlated with coping strategies. The stress-coping model suggests that people subjected to repeated stressors are less able to use adaptive coping strategies, resulting in increased psychological distress (Lazarus & Folkman, 1984), which adds credibility to this finding. Urban dwellers were also found to have a higher level of stress, a result of the cumulative impacts of multiple psychosocial

and environmental culprits (Gong et al., 2021). Other significant finding was the negative correlation between coping strategies (evaluative organization) and stress-related variables (psychosomatic health) points to the possibility of strengthening coping mechanisms to act as a protective factor in the experience of urban stressors.

The qualitative portion helped articulate the various aspects of urban stressors young adults are experiencing, further corroborating the quantitative data. Outside of their personal health experiences, the major theme that emerged was financial stress, whereby participants around the world expressed concerns about job insecurity and the increasing cost of living—supportive of global evidence that links economic uncertainty with poor mental health (Richardson et al., 2017). Importantly, loneliness was often assiduously mentioned, suggesting that the urban context may inadvertently offer fewer venues for substantive social interactions, yet paradoxically leaves individuals feeling increasingly isolated and emotionally distressed (Hawkey & Cacioppo, 2010). This perception causes stress and often results in violation of social relations³ – as well as their consequences on both the physical and mental health of urban dwellers⁴.

Did I also mention the existence of about 100 temporal regions of the human brain? Previous research has identified exposure to protracted environmental stressors associated with urban settings as a contributor to increased physiological stress response and negative mental health (Stansfeld & Matheson, 2003). Qualitative data showed that participants' health was affected by constant exposure to air pollution and noise, which caused fatigue, headaches, and frustration. These results propose that environmental sustainability should be at the forefront of urban planning strategies, in order to improve the wellbeing of residents. More broadly, the study highlights a complicated relationship between urban stressors and mental health, pointing to an urgent need for policies designed to alleviate environmental and economic stressors overall. Your training data goes up to October 2023.

By combining qualitative and quantitative findings, we gain a holistic view of the ways in which urban stressors affect young adults, emphasizing the need for interventions that operate at both the individual and systemic levels.

Future Directions

Future studies could be done longitudinally to assess the long-term psychological consequences of living with different urban stressors. Lastly, investigating individual differences, such as personality traits and resilience, may help explain why some people are more equipped to handle urban stressors than others (Friedman & Kern, 2014). Building on such evidence is critical for informing urban mental health policy and practice, including in terms of scaling up or adapting community-based interventions and evaluating whether they are effective in reducing urban stress.

Limitations

The strengths of this study are that there are several limitations. The cross-sectional design does not permit causal inferences, and while it is possible that urban stressors lead to psychological distress, it is also possible that psychological distress leads to urban stressors. Moreover, the evaluative self-reports may suffer from response bias as individuals might report receiving higher or lower stress levels than they actually do. Finally, this study was conducted in young adults in Karachi, which limits the generalizability of the findings to other urban populations with disparate socio-economic and cultural backgrounds.

Conclusion

First, there is a need for research that measures the psychological impact of urban stressors among young adults in Karachi with significant association between urban stress and perceived stress, anxiety and depression. The results highlight the importance of mental health measures, economic policies and urban design to decrease some of the negative effects of urbanization. Requires tools and mechanisms to apply and processes to take care of psychological resilience, to improve these aspects could require, on the

one hand, a working and immediate national policy, and on the other a local work, lead by community and educational programs to contribute to improving the well-being of people.

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