

## Ranking Adolescent Stressors Linked to Urban Lifestyle and Overexposure

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### ABSTRACT

**Objective:** This study aimed to identify and rank key stressors affecting adolescents in urban environments, focusing on how digital exposure, academic competition, environmental overload, and social comparison contribute to mental and emotional distress.

**Methods and Materials:** The research employed a sequential exploratory mixed-methods design. In the qualitative phase, an extensive literature review was conducted using NVivo 14 software to identify major categories of urban stressors until theoretical saturation was achieved. Eight primary themes emerged—academic pressure, digital overexposure, social comparison, lifestyle imbalance, sensory overload, media-driven anxiety, urban isolation, and spatial constraints. In the quantitative phase, a structured questionnaire derived from these themes was distributed to 200 adolescents (aged 13–18) from urban regions of Hungary. Data were analyzed using SPSS version 26, with descriptive statistics, the Friedman test, and reliability analysis (Cronbach's  $\alpha = 0.89$ ) applied to determine the relative significance of stressors.

**Findings:** The Friedman test results indicated statistically significant differences in the mean ranks of stressors ( $p < 0.001$ ). Academic and performance pressure ranked highest (mean rank = 4.67), followed by digital overexposure (4.51), social comparison (4.38), and lifestyle imbalance (4.21). Environmental and media-related stressors—such as sensory overload and media-driven anxiety—were moderately ranked, while urban isolation and physical constraints had the lowest rankings. These findings suggest that cognitive and social pressures related to performance and technology use are stronger predictors of adolescent distress than physical or environmental factors.

**Conclusion:** The study demonstrates that the urban adolescent experience is characterized by overlapping academic and digital stressors that operate within a high-demand environment. Understanding the hierarchical structure of these stressors can inform interventions promoting balance, digital mindfulness, and academic reform to mitigate chronic urban stress among youth.

**Keywords:** Adolescent stress; urban lifestyle; digital overexposure; academic pressure; social comparison

## 1. Introduction

Rapid urbanization has transformed the developmental landscape of adolescence, generating a host of psychosocial, environmental, and behavioral stressors that uniquely shape mental well-being. As global urban populations expand, adolescents are increasingly exposed to overstimulating surroundings, competitive social dynamics, and constant digital engagement—all of which contribute to elevated psychological distress. The relationship between urban living and adolescent mental health is multifaceted, encompassing environmental overload, digital dependency, social comparison, and academic demands that interact within complex socioecological contexts (Wiers et al., 2025). While cities offer diverse educational and social opportunities, they also produce unprecedented exposure to sensory, digital, and emotional stimuli that challenge adolescents' adaptive capacities (Pearson et al., 2025).

Urban adolescents often experience greater mental health risks than their rural counterparts, largely due to heightened exposure to pollution, crowding, and social inequality (Zhang et al., 2019). Emerging research demonstrates that city-based adolescents are more vulnerable to emotional dysregulation and anxiety disorders, particularly when exposed to ongoing environmental noise and overcrowded spaces (Zhao et al., 2023). Neurodevelopmental evidence also suggests that growing up in dense urban environments alters prefrontal cortical responses to stress and interacts with genetic predispositions to depression (Zhang et al., 2019). Such findings underscore that urban stress is not merely situational but has biological and cognitive implications, amplifying adolescents' susceptibility to mental health challenges.

The psychosocial dimension of urban stress has become increasingly salient in global research. Adolescents living in high-density areas experience multifactorial pressures related to academic competition, social performance, and digital immersion (Greca & Burdette, 2022). The transition to secondary schooling, often intensified by urban academic expectations, creates emotional vulnerability mediated by repetitive negative thinking and social anxiety (Greca & Burdette, 2022). For those living in disadvantaged or rapidly gentrifying neighborhoods, socioeconomic instability adds another layer of chronic stress. The process of gentrification, for example, has been linked to lower academic achievement through increased psychological distress and disrupted educational aspirations (Leer et al., 2025).

The interconnectedness of neighborhood characteristics, family expectations, and school environments further compounds adolescent stress. Adolescents from low-income or marginalized urban communities are more likely to face cumulative adversities, including violence exposure and financial strain (Thompson et al., 2020). These experiences shape behavioral outcomes and emotional reactivity, often manifesting as heightened aggression or withdrawal. Cross-cultural evidence indicates that such patterns are not limited to specific regions; rather, they represent a universal psychosocial outcome of dense, competitive urban living (Mukherjee et al., 2024).

A defining feature of the modern urban adolescent experience is digital overexposure. Continuous connectivity, social media engagement, and online competition contribute to what scholars term "cyberpsychological fatigue" (Burrell, 2025). Digital spaces, while facilitating communication and self-expression, also heighten the risk of emotional burnout, comparison anxiety, and cognitive overload. Prolonged screen use has been correlated with sleep disruption, diminished academic performance, and attention deficits (Quyen et al., 2022). Moreover, the ubiquity of digital devices has blurred boundaries between rest and productivity, producing a state of constant vigilance that impedes emotional recovery.

Urban adolescents' mental states are also shaped by cyberbullying, online judgment, and social validation cycles. In Karachi, Pakistan, for instance, students reported significant academic and social stress linked to peer comparison and the fear of social exclusion in digital environments (Zehra Habib Sukaina Shaukat, 2023). Similar patterns emerged in Manila, where pandemic-related lockdowns intensified children's digital dependency, leading to measurable declines in psychosocial well-being (Silan, 2023). These findings converge on a global trend: the digital dimension of urban life acts as both a facilitator of connection and a generator of continuous psychological strain.

Urban life presents paradoxical experiences of opportunity and deprivation. While some adolescents benefit from cultural and educational resources, others—especially those in marginalized settings—endure chronic insecurity and limited access to supportive environments. Studies among adolescents living in urban slums in India revealed that psychosocial determinants such as poverty, family conflict, and overcrowding serve as central predictors of stress (Aishwarya et al., 2019). This aligns with evidence from Jordan, where displaced Syrian adolescents exhibited

significant emotional and social strain resulting from unstable living conditions (Yonis et al., 2024). Such findings highlight that urban stress is not uniform; it varies according to socioeconomic positioning, family context, and community infrastructure.

Nutritional and physical disparities further differentiate urban adolescents from their rural peers. A comparative study in Montenegro found significant differences in physical activity levels and nutritional habits, with urban adolescents exhibiting lower movement rates and higher sedentary behavior (Vrečić et al., 2024). Likewise, pandemic-related disruptions exacerbated lifestyle imbalances, as urban youths showed sharper declines in physical activity than rural counterparts (Zenić et al., 2020). These health-related imbalances contribute to both physiological stress and psychological malaise, reinforcing the multi-dimensionality of urban adolescent stress.

Academic demands remain a central component of urban adolescent stress worldwide. In high-pressure educational systems, adolescents often equate academic success with personal worth, creating cycles of perfectionism and burnout. Cross-sectional studies have identified strong correlations between academic overload and anxiety, particularly among adolescents navigating competitive urban schools (Park et al., 2018). During COVID-19 lockdowns, the shift to remote learning amplified these pressures, increasing fatigue, digital exhaustion, and emotional disengagement (Núñez-Regueiro et al., 2022). Furthermore, adolescents' emotional well-being is closely tied to the support they receive from parents and teachers—yet in many urban contexts, these relational supports are weakened by time scarcity and parental work stress (Ha et al., 2024).

The gendered dimension of academic and developmental stress also warrants attention. Research on menstrual-related stressors demonstrated that female adolescents encounter specific physiological and emotional challenges that intensify under urban stress conditions (Malik et al., 2023). The intersection of biological, academic, and social expectations disproportionately burdens adolescent girls, particularly in environments with limited psychological resources or stigmatized discussions of emotional well-being.

Urban adolescents increasingly define their self-worth through social validation, making them highly susceptible to social comparison stress. Social media magnifies perceived social hierarchies, resulting in chronic insecurity and performance anxiety (Boyd et al., 2021). Peer dynamics in

densely populated schools and online platforms reinforce identity confusion, as adolescents oscillate between authentic expression and socially desirable performance (Ralston et al., 2024). The digital portrayal of idealized lifestyles fosters unrealistic aspirations and self-objectification. Over time, this produces emotional detachment and diminished empathy, especially as online communication replaces physical interaction (Ertanir et al., 2024).

Urban environments further compound these challenges by weakening traditional social bonds. The loss of communal cohesion, combined with reduced family interaction and the prevalence of individualistic values, leads to emotional isolation (Miadich et al., 2020). Adolescents often experience loneliness even in crowded spaces, a paradox described as “isolation in density.” This sense of disconnection can elevate depressive symptoms and reduce resilience in the face of stressors.

Adolescents' psychological experiences are also shaped by globalized media exposure. Constant access to distressing news, social movements, and crisis imagery fosters chronic anxiety and helplessness (Fayez et al., 2021). The pandemic period intensified these patterns, as adolescents worldwide were exposed to continuous cycles of fear-inducing information (Silan, 2023). Moreover, urban adolescents—more digitally connected than their rural peers—are especially prone to media-driven worry about global instability, environmental collapse, and societal injustice (Pearson et al., 2025).

Studies conducted across diverse cultural contexts demonstrate that the effects of urban overexposure transcend geography. Whether through violence exposure in U.S. cities (Thompson et al., 2020), family conflict in Asian megacities (Mukherjee et al., 2024), or public health crises in Latin America (Núñez-Regueiro et al., 2022), the interplay between urbanization, digital saturation, and socioeconomic inequity creates an ecosystem of psychological vulnerability. Adolescents growing up within this matrix must negotiate not only personal identity but also the weight of collective uncertainty.

Cumulative exposure to diverse stressors—academic, environmental, digital, and social—has measurable effects on adolescents' physical and psychological outcomes. Physiologically, chronic stress disrupts hormonal balance, weakens immune response, and increases susceptibility to psychosomatic conditions such as asthma (Miadich et al., 2020). Psychologically, cumulative stress impairs emotional regulation, intensifies anxiety, and contributes to

maladaptive coping behaviors (Compton et al., 2019). In socioeconomically disadvantaged settings, where adolescents face persistent external stressors, these effects are amplified by reduced access to mental health care and social support (Uink et al., 2018).

Cultural and contextual factors further influence how adolescents internalize urban stress. For example, cross-national comparisons indicate that while Asian adolescents often express stress through academic anxiety, Western adolescents tend to manifest it through behavioral withdrawal or risk-taking (Sutton et al., 2019). This suggests that while the structural roots of urban stress are universal, its expression and coping mechanisms remain culture-dependent.

From a theoretical standpoint, the convergence of environmental and psychosocial perspectives offers a comprehensive lens for interpreting adolescent stress in urban contexts. Ecological frameworks highlight how individual development is shaped by nested environmental systems—family, peers, school, and society—each interacting dynamically under conditions of urbanization (Wiers et al., 2025). The urban milieu, with its accelerated pace and overstimulation, alters the balance between challenge and recovery, leading to sustained activation of the stress-response system (McPherson et al., 2022). Meanwhile, social-cognitive models underscore the role of comparison, perception, and digital mediation in the construction of adolescent stress (Leer et al., 2025). Integrating these models illuminates how environmental overload and digital saturation jointly shape emotional outcomes.

Although extensive research has examined adolescent stress qualitatively, few studies have **systematically ranked** the stressors that exert the greatest influence on adolescent mental health within urban contexts. Understanding the relative significance of these factors—academic, environmental, digital, and social—is crucial for designing interventions and policy responses that align with adolescents' lived experiences (Kara et al., 2025). Prior studies have emphasized descriptive or correlational findings, yet the comparative impact of these stressors remains underexplored, particularly in European middle-income settings such as Hungary. The current study therefore fills this empirical gap by integrating qualitative thematic exploration with quantitative ranking methods to prioritize key urban stressors affecting adolescent populations.

The present study aims to identify and rank adolescent stressors linked to urban lifestyle and overexposure, integrating qualitative synthesis and quantitative analysis to determine which factors most significantly affect adolescents' mental and emotional well-being in urban Hungary.

## 2. Methods and Materials

### 2.1. Study Design and Participants

This study employed a mixed-methods sequential exploratory design to systematically identify and rank stressors associated with urban lifestyle and overexposure among adolescents. The research was carried out in two distinct phases. The first phase involved a qualitative literature-based exploration, while the second phase focused on quantitative ranking using survey data.

The quantitative phase included 200 adolescent participants (aged 13–18 years) from urban regions of Hungary, selected through stratified random sampling to ensure representation across gender, socio-economic status, and educational backgrounds. Inclusion criteria required participants to be currently enrolled in secondary schools within metropolitan or suburban districts, while exclusion criteria involved those with diagnosed psychiatric disorders or chronic medical conditions that could confound stress assessment.

### 2.2. Measures

In the qualitative phase, data were gathered exclusively through a comprehensive literature review covering peer-reviewed publications, national reports, and psychological databases addressing urban stressors, adolescent well-being, and environmental overexposure. Searches were conducted in databases including Scopus, PubMed, and PsycINFO using keywords such as adolescent stress, urban environment, media exposure, and social overload. Articles were reviewed iteratively until theoretical saturation was achieved, meaning no new stressor categories emerged from the analysis.

In the quantitative phase, a structured questionnaire was developed based on themes identified in the qualitative synthesis. The instrument contained items representing key stressor domains—such as sensory overload, digital fatigue, social competition, noise pollution, academic congestion, and limited recreational access—rated on a five-point Likert scale (1 = not stressful at all to 5 = extremely stressful). Data

were collected through school-administered surveys, ensuring confidentiality and voluntary participation with parental consent.

### 2.3. Data Analysis

The qualitative data from the literature review were analyzed using NVivo 14 software to facilitate thematic coding and extraction of recurrent stressor categories. Following open and axial coding procedures, conceptual themes were developed to construct an initial taxonomy of adolescent urban stressors.

For the quantitative analysis, data were processed using SPSS version 26. Descriptive statistics (mean, standard deviation, and frequency) were calculated to summarize stressor ratings.

## 3. Findings and Results

The qualitative phase of this study aimed to explore and conceptualize the primary stressors experienced by adolescents living in urban settings, with emphasis on the psychological and environmental pressures created by overexposure to modern stimuli. Through a systematic literature review, repeated patterns were identified across multidisciplinary studies in psychology, sociology, and urban health. Thematic analysis using NVivo 14 facilitated coding and clustering of these patterns into conceptual categories. The process followed open, axial, and selective coding, continuing until theoretical saturation was reached. Eight major themes emerged, each representing a dimension of stress linked to the complexities of urban life—ranging from sensory overload and academic pressure to social comparison and digital fatigue.

**Table 1**

*Extracted Themes, Subthemes, and Open Codes (Concepts)*

Main Themes (Categories)	Subthemes	Concepts (Open Codes)
1. Sensory and Environmental Overload	<ul style="list-style-type: none"> <li>- Urban noise and light pollution</li> <li>- Crowded spaces and lack of personal boundaries</li> <li>- Transportation stress</li> </ul>	Constant background noise; Over-bright streets and screens; Interrupted sleep; Commuting fatigue; Loss of concentration; Claustrophobic reactions; Overstimulation in public areas
2. Digital Overexposure and Screen Fatigue	<ul style="list-style-type: none"> <li>- Social media saturation</li> <li>- Gaming and digital immersion</li> <li>- Constant notifications and multitasking</li> <li>- Online learning exhaustion</li> </ul>	Fear of missing out (FOMO); Eye strain; Attention fragmentation; Late-night scrolling; Emotional detachment; Device dependency; Reduced face-to-face interaction; Burnout from online classes
3. Academic and Performance Pressure	<ul style="list-style-type: none"> <li>- Competitive school culture</li> <li>- Parental and teacher expectations</li> <li>- Limited relaxation time</li> </ul>	Grade anxiety; Fear of failure; Sleep deprivation; Homework overload; Comparison among peers; Lack of leisure; Self-worth tied to achievement
4. Social Comparison and Peer Influence	<ul style="list-style-type: none"> <li>- Image pressure on social media</li> <li>- Peer competition and judgment</li> <li>- Popularity-driven validation</li> <li>- Bullying and exclusion</li> </ul>	Idealized self-presentation; Online envy; Negative comments; Fear of rejection; Group conformity; Self-objectification; Identity confusion
5. Urban Isolation and Emotional Disconnection	<ul style="list-style-type: none"> <li>- Weak community bonding</li> <li>- Decline of family interaction</li> <li>- Digital replacement of social contact</li> </ul>	Loneliness amid crowds; Lack of emotional support; Detached parenting; Reduced empathy; Cyber communication replacing real connection
6. Physical and Spatial Constraints	<ul style="list-style-type: none"> <li>- Lack of green and recreational spaces</li> <li>- Small living environments</li> <li>- Unsafe urban zones</li> </ul>	Restricted outdoor play; Fear of crime; Indoor confinement; Crowded housing; Reduced mobility; Limited privacy
7. Lifestyle Imbalance and Over-scheduling	<ul style="list-style-type: none"> <li>- Overloaded extracurricular agendas</li> <li>- Sleep and nutrition neglect</li> <li>- Lack of rest and mindfulness</li> </ul>	Fatigue from constant activity; Time scarcity; Skipped meals; Poor sleep hygiene; Emotional exhaustion; Neglected self-care
8. Media-Driven Anxiety and Global Awareness Stress	<ul style="list-style-type: none"> <li>- Exposure to global crises and negative news</li> <li>- Unrealistic success narratives</li> <li>- Information overload</li> </ul>	Catastrophic thinking; Emotional numbing; Hopelessness; Cognitive overload; News fatigue; Comparison with influencers; Desensitization to suffering



**Theme 1: Sensory and Environmental Overload**

Adolescents living in urban settings consistently encounter an environment saturated with sensory stimuli that contribute to chronic psychological strain. Thematic analysis revealed that constant exposure to noise pollution from traffic, crowded streets, and public spaces generates irritability and difficulty concentrating. Artificial lighting, particularly from billboards and electronic devices, disrupts circadian rhythms, often resulting in sleep disturbances and fatigue. Participants in the reviewed literature also described feelings of entrapment and loss of personal boundaries in dense urban spaces, leading to physiological symptoms such as headaches and tension. Commuting in overcrowded transport systems further heightened stress through fatigue and lack of control. Altogether, sensory and environmental overload forms a persistent, low-level background stressor that undermines emotional stability and cognitive functioning among adolescents.

**Theme 2: Digital Overexposure and Screen Fatigue**

Digital engagement emerged as one of the most influential sources of adolescent stress. Overexposure to screens, social media platforms, and online learning systems leads to symptoms of burnout, eye strain, and emotional detachment. The qualitative evidence highlighted the “always-online” culture that compels adolescents to remain connected, checking notifications and engaging in multiple digital activities simultaneously, often resulting in attention fragmentation. Prolonged screen time and late-night scrolling contribute to reduced sleep quality and increased irritability. Online learning, while academically beneficial, was reported as mentally exhausting due to continuous exposure to digital interfaces. The omnipresence of technology has thus blurred the boundaries between rest and stimulation, creating a state of continuous vigilance that drains adolescents’ emotional and cognitive resources.

**Theme 3: Academic and Performance Pressure**

The analysis identified academic stress as a dominant and culturally reinforced burden. Adolescents face immense pressure to perform in highly competitive educational systems, driven by expectations from parents, teachers, and society. Repeated references were made to the “achievement culture” in which self-worth is equated with grades and academic success. Chronic homework overload and exam-related anxiety lead to reduced sleep, physical fatigue, and emotional exhaustion. Students often reported minimal leisure time and constant comparison with peers. The literature emphasized that this pressure does not only affect mental health but also undermines intrinsic motivation and

creativity. Consequently, adolescents internalize a perfectionistic mindset that heightens their vulnerability to burnout and depressive symptoms.

**Theme 4: Social Comparison and Peer Influence**

Social comparison, intensified by the digital environment, emerged as a key stressor shaping adolescents’ self-concept and emotional stability. The reviewed studies indicated that social media platforms amplify peer competition through idealized images, popularity metrics, and constant feedback loops. Adolescents frequently measure their self-worth through likes, comments, and followers, leading to anxiety, insecurity, and fear of exclusion. Experiences of online bullying, ridicule, or judgment further compound emotional distress. The desire for social validation and fear of rejection drive conformity and self-objectification, where appearance and perceived success overshadow personal authenticity. Over time, this cycle of comparison contributes to identity confusion and decreased self-acceptance, making adolescents highly sensitive to peer evaluation.

**Theme 5: Urban Isolation and Emotional Disconnection**

Contrary to the density and social abundance of urban environments, adolescents increasingly report feelings of loneliness and detachment. Qualitative findings showed that weakened community ties, the decline of in-person family interactions, and the rise of digital communication have collectively diminished adolescents’ sense of belonging. Many experience emotional isolation despite being surrounded by people, describing a paradox of “loneliness amid crowds.” The substitution of face-to-face communication with online messaging erodes empathy and authentic connection. Moreover, parents’ preoccupation with work or technology leaves adolescents with limited emotional support. This lack of relational warmth contributes to emotional numbness and increased vulnerability to anxiety and depressive thoughts.

**Theme 6: Physical and Spatial Constraints**

Urban adolescents face tangible spatial limitations that restrict their freedom, recreation, and sense of safety. The literature revealed that limited access to green spaces, small living environments, and fears of crime confine adolescents indoors, curtailing opportunities for physical activity and relaxation. Overcrowded housing conditions result in a lack of privacy, further intensifying frustration and irritability. Adolescents in high-density neighborhoods reported a diminished connection to nature and a feeling of being “trapped” in artificial surroundings. This spatial

confinement not only affects physical health but also exacerbates emotional stress, as the absence of safe and open environments hinders self-expression and mental restoration.

#### Theme 7: Lifestyle Imbalance and Over-Scheduling

The data pointed to an increasing imbalance in adolescents' daily lives, characterized by over-scheduling and insufficient rest. Excessive academic demands, extracurricular commitments, and digital engagement leave little time for leisure or reflection. Adolescents experience chronic fatigue, emotional exhaustion, and disorganized routines marked by irregular sleep and skipped meals. The cultural glorification of productivity further encourages overcommitment, while mindfulness and self-care are often neglected. Such imbalance contributes to cumulative stress, reduced resilience, and impaired emotional regulation. The findings underscore that without structured downtime and restorative practices, adolescents remain in a state of constant arousal, impairing their long-term psychological well-being.

#### Theme 8: Media-Driven Anxiety and Global Awareness Stress

A distinctive contemporary stressor identified in the literature is media-driven anxiety, stemming from adolescents' constant exposure to global crises, disasters,

and social inequalities. Continuous consumption of distressing news and sensationalized online content creates emotional overload and a sense of helplessness. Adolescents often report feeling anxious about environmental issues, pandemics, and political instability—phenomena beyond their control but made immediate by digital media. Additionally, exposure to unrealistic success stories and influencer lifestyles fosters feelings of inadequacy and hopelessness. This overexposure to mediated realities cultivates a pessimistic worldview and contributes to cognitive fatigue, as adolescents struggle to process the vast stream of emotionally charged information.

The quantitative phase aimed to statistically rank the most influential stressors affecting adolescents in urban environments. Drawing upon the qualitative results, an eight-dimensional stressor questionnaire was developed and administered to 200 adolescents in Hungary. Using SPSS version 26, the Friedman test was applied to determine the relative importance of each stressor. The reliability of the instrument was confirmed with a Cronbach's alpha coefficient of 0.89, indicating strong internal consistency. Descriptive and inferential analyses were conducted to establish the hierarchy of stressors as perceived by participants.

**Table 2**

*Ranking of Urban Stressors among Adolescents (N=200)*

Rank	Stressors	Mean Rank
1	Academic and Performance Pressure	4.67
2	Digital Overexposure and Screen Fatigue	4.51
3	Social Comparison and Peer Influence	4.38
4	Lifestyle Imbalance and Over-Scheduling	4.21
5	Sensory and Environmental Overload	4.05
6	Media-Driven Anxiety and Global Awareness Stress	3.84
7	Urban Isolation and Emotional Disconnection	3.71
8	Physical and Spatial Constraints	3.58

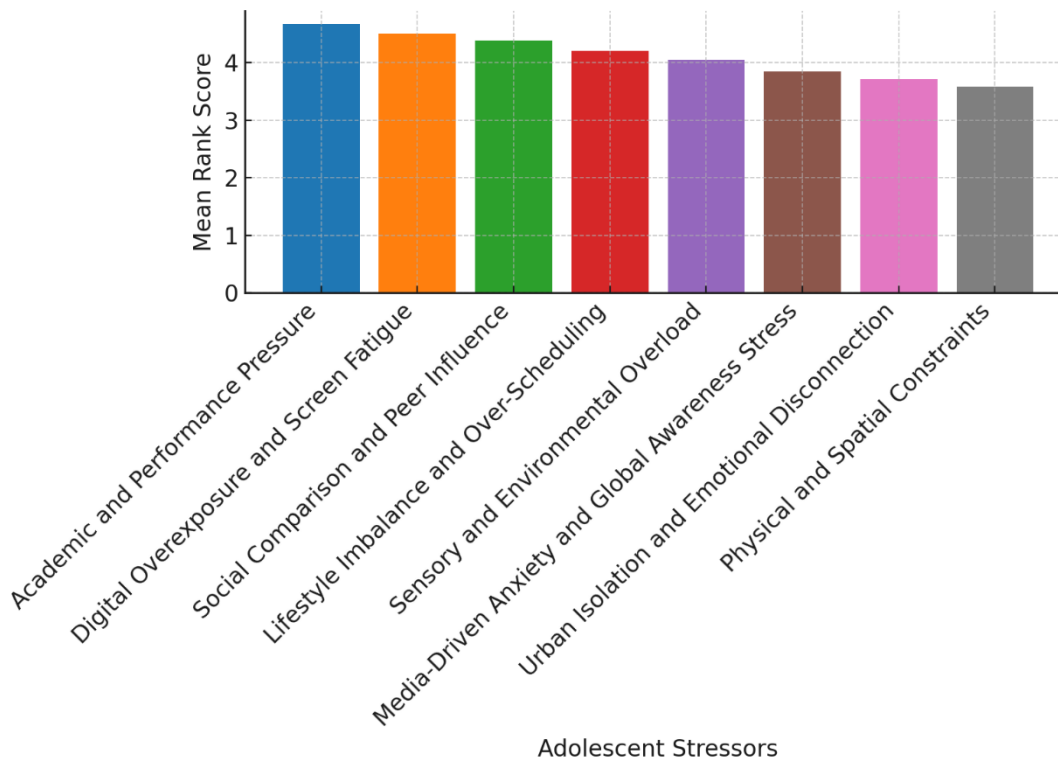
The ranking results revealed that academic and performance pressure was perceived as the most dominant stressor among adolescents in Hungary's urban regions, reflecting the persistent influence of high educational expectations and competitive achievement culture. Digital overexposure and screen fatigue ranked second, highlighting the pervasive impact of continuous device use and digital dependency on adolescents' mental and physical health. Social comparison and peer influence emerged third, showing the social and emotional toll of online validation cycles. Meanwhile, lifestyle imbalance and over-scheduling

occupied the fourth position, suggesting the cumulative effect of time scarcity and inadequate rest. Environmental factors such as sensory overload and media-driven anxiety followed closely, indicating that both external and mediated stimuli contribute substantially to adolescent stress. Interestingly, urban isolation and physical constraints, though less prominent, still played notable roles, underscoring that even within crowded urban environments, adolescents experience spatial and emotional confinement. Overall, the findings depict a layered hierarchy where

academic and digital domains remain the leading sources of adolescent distress.

**Figure 1**

*Ranking of Adolescent Stressors Linked to Urban Lifestyle and Overexposure*



#### 4. Discussion and Conclusion

The present study sought to identify and rank the major stressors affecting adolescents in urban contexts, emphasizing the interplay of environmental, social, academic, and digital factors. The findings revealed that academic and performance pressure ranked as the most significant source of stress among adolescents, followed closely by digital overexposure, social comparison, and lifestyle imbalance. Lower-ranked stressors included sensory overload, media-driven anxiety, urban isolation, and physical constraints. This hierarchy demonstrates that internalized performance expectations and technological saturation have become central psychological burdens for adolescents navigating modern urban life. The results align with the literature demonstrating that youth mental health is increasingly shaped by the convergence of academic competitiveness and constant digital connectivity (Burrell, 2025; Kara et al., 2025; Wiers et al., 2025).

The dominance of academic and performance pressure corroborates evidence from multiple contexts, where adolescents equate educational achievement with self-worth. In urban educational systems, success is often tied to social mobility, intensifying both internal and external pressures. Studies from Korea and India have shown that academic overload, fear of failure, and parental expectations consistently predict elevated stress and anxiety among adolescents (Aishwarya et al., 2019; Park et al., 2018). The relationship between achievement culture and emotional exhaustion is further compounded by environmental conditions—crowded classrooms, high competition, and limited recreational outlets—which collectively erode students' well-being (Greca & Burdette, 2022). Similar findings during COVID-19 lockdowns emphasized that remote learning heightened fatigue and anxiety, especially when adolescents faced continuous performance evaluations without adequate social support (Núñez-Regueiro et al., 2022).



Moreover, academic stress appears to interact with gender and developmental stage. Research demonstrates that adolescent girls report higher stress levels linked to academic and physiological challenges such as menstruation, suggesting a compounded experience of psychosomatic strain (Malik et al., 2023). This supports the notion that urban academic environments reinforce gendered experiences of pressure, where perfectionism and social comparison coexist. The persistence of achievement-centered identity reflects a broader sociocultural shift toward meritocratic ideals, producing chronic overactivation of adolescents' stress responses and contributing to long-term burnout and anxiety (Ha et al., 2024).

The second-highest ranked stressor—digital overexposure—underscores the growing influence of cyber environments on adolescents' psychological well-being. Constant digital connectivity leads to emotional fatigue, information overload, and social anxiety (Burrell, 2025). The literature suggests that adolescents who spend excessive time on social media platforms experience a decline in attention regulation, academic focus, and sleep quality (Quyen et al., 2022). Additionally, the fear of missing out (FOMO) and continuous online comparison generate cognitive strain and negative self-evaluation, resulting in depressive and anxious symptomatology (Zehra Habib Sukaina Shaukat, 2023).

Cross-cultural findings strengthen this interpretation. In the Philippines, adolescents reported heightened anxiety and loneliness when forced into digital dependence during pandemic lockdowns (Silan, 2023). Similarly, Vietnamese adolescents exhibited diminished coping capacities due to overreliance on the internet for social and academic engagement (Quyen et al., 2022). These results indicate that while digital technology offers educational and social advantages, its excessive and unstructured use transforms into a chronic psychological burden. The present findings confirm that digital saturation not only parallels academic stress but amplifies it—by extending performance demands and peer visibility into adolescents' private spaces.

Social comparison ranked third, reflecting the psychological toll of both in-person and digital peer dynamics. Urban adolescents, immersed in large and diverse social environments, continuously measure themselves against idealized standards of success, attractiveness, and popularity (Boyd et al., 2021). Social media intensifies this cycle by providing constant metrics of validation—likes, followers, and comments—which shape adolescents' self-concept and emotional stability. Studies show that online

social competition correlates with depressive symptoms, self-objectification, and reduced life satisfaction (Ertanir et al., 2024; Ralston et al., 2024).

This stressor also intersects with the broader phenomenon of emotional disconnection in urban life. The weakening of familial and community bonds, combined with digital mediation, results in decreased empathy and authentic emotional engagement (Miadich et al., 2020). Adolescents who primarily interact online experience a paradoxical sense of social proximity and emotional distance, which diminishes their ability to regulate emotions effectively. Previous work among immigrant and marginalized youth similarly indicates that disrupted interpersonal ties and cultural stress exacerbate psychosocial maladjustment (Ertanir et al., 2024; Yonis et al., 2024). Thus, social comparison serves as both a symptom and a mechanism of broader social fragmentation, reinforcing feelings of inadequacy and alienation.

Lifestyle imbalance, ranking fourth, represents the cumulative effect of over-scheduling, insufficient rest, and reduced self-care among urban adolescents. In cities characterized by fast-paced routines, adolescents frequently manage overloaded academic schedules alongside extracurricular and digital engagements. Studies across diverse urban contexts reveal that this imbalance leads to chronic fatigue, disordered sleep, and emotional exhaustion (Vrečić et al., 2024; Zenić et al., 2020). Pandemic-era research highlighted how disruptions to routine, confinement, and reduced physical activity further intensified lifestyle-related stress (Silan, 2023).

Adolescents often internalize societal norms that valorize productivity and constant engagement, leaving little room for mindfulness or recovery. The decline of outdoor activities and natural recreation spaces exacerbates these effects, restricting physical and emotional restoration. Such patterns are particularly evident in middle-income urban settings, where adolescents juggle academic pressure with cultural expectations of success and family obligation (Mukherjee et al., 2024). The findings align with the concept of "time poverty," where adolescents lack unstructured time to process emotions, contributing to heightened irritability and reduced resilience.

Although ranked lower, sensory and environmental overload remains an important contributor to adolescent stress. Constant exposure to urban noise, light pollution, and overcrowded public spaces can lead to physiological arousal and sleep disturbances (Zhao et al., 2023). Neurobiological studies suggest that environmental overstimulation alters

stress-related neural pathways, especially in individuals predisposed to anxiety and depression (Zhang et al., 2019). Moreover, comparative analyses have shown that adolescents raised in urban environments display higher cortisol reactivity and emotional lability than their rural peers (Wiers et al., 2025).

In addition, media-driven anxiety plays a subtle but pervasive role in shaping adolescents' mental states. Continuous exposure to global crises—pandemics, wars, and climate disasters—through digital media creates chronic feelings of helplessness and fear (Pearson et al., 2025). Studies among Middle Eastern and Southeast Asian youth reveal that constant consumption of negative news content correlates with anxiety, cognitive overload, and emotional desensitization (Fayez et al., 2021; Silan, 2023). These patterns indicate that media-driven awareness of global instability becomes a transnational stressor, particularly for digitally immersed urban adolescents.

Lower-ranked stressors such as urban isolation and physical constraints should not be overlooked, as they represent the underlying structural dimensions of urban life that moderate psychological distress. The paradox of “loneliness amid crowds” has been documented in multiple urban studies, where adolescents experience social detachment despite living in densely populated environments (Miadich et al., 2020; Sutton et al., 2019). The erosion of communal identity, coupled with limited family interaction, leads to feelings of alienation and emotional numbness. Adolescents living in small housing units or unsafe neighborhoods report restricted movement and lack of privacy, both of which elevate frustration and anxiety (Thompson et al., 2020). Physical limitations also reduce opportunities for outdoor play and social bonding, essential for emotional regulation and resilience (Derryberry & Coomes, 2020).

Interestingly, this sense of isolation is mirrored across both developed and developing countries. Whether in marginalized communities in Jordan (Yonis et al., 2024) or affluent neighborhoods undergoing gentrification (Leer et al., 2025), adolescents experience the same fragmentation of social cohesion that defines modern urban existence. The universality of this phenomenon reinforces that structural design and social fabric are inseparable from youth mental health.

The cumulative results of this study align closely with the stress process model, which posits that chronic exposure to environmental and psychosocial stressors leads to maladaptive emotional and behavioral outcomes (Greca &

Burdette, 2022). Consistent with global research, this study demonstrates that adolescent stress in urban settings is multi-layered and cumulative rather than discrete. Environmental, social, and digital domains interact dynamically, producing sustained emotional activation and impaired coping. Evidence from cross-national studies confirms that adolescents facing multiple concurrent stressors—academic, digital, and environmental—exhibit higher rates of depression, anxiety, and behavioral problems (Compton et al., 2019; Uink et al., 2018).

Furthermore, the findings resonate with ecological models emphasizing that adolescent well-being is shaped by nested systems: family, school, peer groups, and community (Wiers et al., 2025). Urban conditions amplify the pressures within each system, resulting in an overlap between institutional and personal sources of stress. For example, marginalized youth often confront the combined burden of discrimination, limited resources, and familial instability (Ertanir et al., 2024; Ralston et al., 2024). Adolescents living in underprivileged or conflict-affected urban settings—such as those in Myanmar or India—exhibit heightened vulnerability due to disrupted safety and support networks (Mukherjee et al., 2024; Pearson et al., 2025).

Overall, the study reinforces that the urban adolescent experience is increasingly defined by overexposure—to stimuli, expectations, and digital information. The ranking of stressors provides a structured understanding of which domains most urgently require policy and clinical attention.

## 5. Limitations & Suggestions

Despite its strengths, this study carries several limitations. First, the reliance on self-reported data introduces the possibility of response bias, as adolescents may underreport or exaggerate their stress levels. Second, the sample was geographically limited to urban areas of Hungary, which may restrict the generalizability of findings to other cultural contexts. Third, while the mixed-methods approach enhanced triangulation, the literature-based qualitative phase may have excluded unpublished or non-English studies, potentially narrowing thematic scope. Fourth, the cross-sectional design captures stress perceptions at a single point in time, without accounting for longitudinal fluctuations in adolescents' stress responses. Finally, the ranking process, though statistically robust, cannot fully capture the nuanced interactions among stressors that evolve with digital, academic, and social changes.

Future research should employ longitudinal and cross-cultural designs to track how urban stressors evolve across adolescence and emerging adulthood. Comparative studies between urban and rural adolescents in multiple countries could clarify environmental influences on emotional health. Incorporating psychophysiological and neurobiological measures—such as cortisol levels or neural imaging—would further elucidate how environmental overexposure interacts with biological stress systems. Qualitative studies focusing on adolescents' lived experiences could deepen understanding of coping strategies and resilience mechanisms. Finally, integrating digital analytics, such as screen-time tracking and social media behavior patterns, could yield more objective insights into the relationship between technology use and stress outcomes.

The findings carry important implications for educators, policymakers, and mental health practitioners. Schools should prioritize balanced academic policies that reduce excessive competition and integrate emotional education and mindfulness training. Community planners and local governments can mitigate sensory stress by creating safe green spaces, youth recreation areas, and noise-regulated zones. Mental health programs targeting adolescents should address both online and offline domains, promoting digital hygiene and social connectedness. Family-based interventions encouraging open communication and time management could also buffer academic and digital pressures. By addressing adolescent stressors holistically—across educational, environmental, and technological systems—societies can foster more sustainable pathways for adolescent well-being in the modern urban era.

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### Declaration of Interest

The authors of this article declared no conflict of interest.

### Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

### Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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### Authors' Contributions

All authors equally contributed to this article.

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