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Original Research Article

A Comparative Study of Anxiety, Depression, and Stress Levels Among Male and Female Adolescents in Urban Indore

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Abstract: Adolescence is a sensitive period of life marked by rapid emotional, social, and academic changes, which often make young people vulnerable to psychological problems such as anxiety, depression, and stress. The present study set out to explore whether there are gender differences in these emotional difficulties among adolescents in urban Indore. The sample consisted of 100 college students, equally divided between males and females, aged 18–21 years, selected through quota sampling. To assess their mental health, the Anxiety, Depression, and Stress Scale (Bhatnagar, 2011) was administered. The results of t-test analysis showed clear gender differences on all three measures. Female Adolescence s reported significantly higher levels of anxiety, depression, and stress than their male Adolescence.

Keywords: Adolescents, Anxiety, Depression, Stress.

INTRODUCTION

Adolescence, typically spanning from ages 10 to 21, is a vital stage of life marked by rapid physical, emotional, and psychological changes. It serves as a bridge between childhood and adulthood, laying the groundwork for future mental health and overall well-being. In today's fast-paced world, adolescent mental health has emerged as a major concern, particularly in urban areas where academic pressures, social challenges, and lifestyle demands often heighten stress. Among the many mental health concerns faced by young people, anxiety, depression, and stress are some of the most significant. These issues not only disrupt daily life but also increase the risk of substance abuse, academic difficulties, and even suicidal tendencies. According to the World Health Organization (WHO), mental health disorders are now the leading cause of disability among adolescents worldwide, with depression being one of the most common and serious contributors.

In India, the situation is no less alarming. Research shows that a significant number of adolescents struggle with mental health difficulties. For example, Sahoo et al. (2010) found that depressive symptoms were present in 18.5% of adolescents, anxiety in 24.4%, and stress in 20%. Clinical depression was reported in 12.1%, while 19% suffered from generalized anxiety disorder. Notably, most adolescents experiencing depression (around 87%) also had anxiety, highlighting the high level of comorbidity. Gender plays an important role in how these mental health issues manifest. Studies consistently show that female adolescents are more vulnerable to anxiety and depression compared to males. Sudershan et al. (2025), for instance, found that 12.5% of college students experienced severe depression, with the rate being slightly higher in females (13.39%). Severe anxiety was also reported more often among female students. Several factors explain these gender differences. Biological influences, such as hormonal fluctuations during adolescence, can make females more prone to mood disorders. At the same time, social and cultural pressures—ranging from societal expectations to gender-based discrimination and violence—further increase their risk of anxiety and depression.

Urban adolescents, in particular, face unique stressors. The demands of city life, competitive academic environments, and the constant presence of digital media often contribute to mental strain. A recent report by the IC3 Institute and CISCE (2025) pointed out that late-night screen time, sleep deprivation, and uncertainty about career paths are major drivers of the adolescent mental health crisis in India. The same study revealed that one in five adolescents rarely feels calm or motivated, with girls especially vulnerable to persistent sadness and loneliness. Unfortunately, many schools lack adequate mental health support systems, leaving adolescents with few reliable resources. Even when help is available, many young people are hesitant to seek support due to stigma or lack of awareness. Female students, in particular, are more likely to rely on self-coping strategies rather than professional help, which can worsen the problem over time.

Adolescence is a formative stage for mental health, and the growing prevalence of anxiety, depression, and stress demands urgent attention. Understanding gender differences in these conditions is key to developing interventions that address the unique needs of both male and female adolescents. This study aims to explore these differences in the context of urban India and contribute to efforts that promote adolescent mental well-being. With the rising rates of anxiety, depression, and stress among adolescents especially in urban areas it becomes essential to examine how these issues differ by gender. Such understanding can guide the creation of tailored interventions and support systems that meet the specific needs of boys and girls during this critical life stage.

this research will enrich existing knowledge on adolescent mental health in India. By shedding light on gender-based differences, the study can help in shaping gender-sensitive mental health programs and policies. Moreover, it will provide useful insights for educators, counselors, and policymakers in designing effective strategies to support the emotional and psychological well-being of adolescents.

REVIEW OF RELATED LITERATURE

Sharma and Gulati (2019) reported that Indian adolescent girls tend to experience higher levels of anxiety than boys, largely due to social pressures and fear of academic failure. Similar findings were noted by Matud (2004), who observed across cultures that females consistently report more anxiety, pointing to both biological and social influences. Byrne et al. (2007) added that adolescents in urban environments are especially vulnerable to anxiety because of fast-paced lifestyles and peer competition. Supporting this, Sahoo et al. (2010) found that 24.4% of Indian adolescents showed significant anxiety symptoms, with females being particularly at risk due to social expectations and heightened emotional sensitivity during puberty. More recently, Bao et al. (2025) also confirmed that adolescent girls reported significantly higher anxiety than boys, shaped by both environmental and psychosocial factors. In Kerala, Rahna et al. (2024) highlighted that female adolescents had greater odds of developing mental health issues, with factors such as age, urban residence, strained relationships, low socio-economic status, and family history of depression playing important roles.

Lewinsohn et al. (1998) warned that untreated depression during adolescence can lead to long-term psychosocial problems. In the Indian context, Sahoo et al. (2010) found that 18.5% of adolescents reported depressive symptoms, with many also experiencing comorbid anxiety. Sharma and Gulati (2019) noted that female adolescents appear particularly vulnerable to depression due to combined pressures from academics and family responsibilities. Sudershan et al. (2025) reported that 12.5% of college students suffered from severe depression, with a slightly higher prevalence among females (13.39%), which they attributed to hormonal changes, stress internalization, and social pressures. Interestingly, Prakash et al. (2024) found that rural adolescents experienced higher depression rates (39.3%) compared to urban adolescents (24.2%), highlighting how environmental factors shape mental health outcomes.

Cohen et al. (1983) emphasized the critical role of perceived stress in both psychological and physical well-being. Urban adolescents often report elevated stress levels, largely due to competitive academic environments and lifestyle demands. Singh and Upadhyay (2017) found that female adolescents had significantly higher stress than males, influenced by societal expectations, reduced leisure opportunities, and emotional sensitivity. Similarly, Matud (2004) observed that females tend to internalize stress, anxiety, and depression, while males are more likely to externalize distress through behaviors like aggression. Consistent with this, Sharma and Gulati (2019) confirmed that female adolescents were more prone to stress, a conclusion also drawn by Sudershan et al. (2025), who stressed the importance of gender-sensitive interventions.

Mallya et al. (2024) reported that adolescents in urban areas showed higher anxiety and stress levels, largely due to academic pressures and social challenges. On the other hand, Prakash et al. (2024) found that while urban youth struggled more with anxiety and stress, rural adolescents experienced higher rates of depression, pointing to the influence of lifestyle differences and environmental stressors. Rahna et al. (2024) also emphasized that poor socio-economic status, weak social networks, and family history of depression significantly contributed to mental health disparities among Kerala adolescents. Finally, Parida et al. (2025) in Bhopal observed that more than half of adolescents (53%) reported experiencing anxiety, with academic

pressure being the most common source underscoring the urgent need for educational reforms and better mental health support in schools.

STATEMENT OF THE PROBLEM

Adolescence is a critical period of development marked by rapid physical, emotional, and social changes. During this time, young people often face academic pressures, social expectations, and personal challenges, which can lead to psychological difficulties such as anxiety, depression, and stress. These emotional issues not only impact mental health but can also interfere with academic performance and overall well-being. Research has consistently shown that gender influences these experiences, with female adolescents often reporting higher levels of anxiety and depression compared to males. Given these concerns, it is important to explore the levels of anxiety, depression, and stress among male and female adolescents to inform the development of effective interventions and support systems.

OBJECTIVE OF THE STUDY

The primary objective of this study is to assess the levels of anxiety, depression, and stress among adolescents in urban Indore.

HYPOTHESES OF THE STUDY

1. There will be no significant difference in anxiety levels between male and female adolescents in urban Indore.
2. There will be no significant difference in depression levels between male and female adolescents in urban Indore.
3. There will be no significant difference in stress levels between male and female adolescents in urban Indore.

METHODOLOGY

SAMPLE

The study sample consisted of 100 college students from the Indore district of Madhya Pradesh. Of these, 50 were male adolescents and 50 were female adolescents, ensuring a balanced gender ratio (1:1). Participants were selected using the quota sampling method, and their ages ranged from 18 to 21 years.

Research Design

This study followed a quantitative, descriptive-comparative research design to examine anxiety, depression, and stress among adolescents. This approach was chosen because it allows for the measurement and comparison of psychological variables between groups without the need for experimental manipulation. In this study, gender (male and female) was treated as the independent variable, while anxiety, depression, and stress served as the dependent variables. Data were gathered using standardized psychological instruments and analyzed statistically to identify significant differences between the two groups. The comparative design provided a structured way to understand gender-based variations in mental health among adolescents aged 18 to 21 years.

VARIABLES USED IN THE STUDY

- **Independent Variable: Gender- 1)** Male adolescents 2) Female adolescents
- **Dependent Variables: - 1)** Anxiety 2) Depression 3) Stress

OPERATIONAL DEFINITIONS

1. **Adolescents:** Individuals aged 10–21 years who are in the transitional stage between childhood and adulthood and are enrolled in school or college.
2. **Anxiety:** A psychological state marked by feelings of worry, tension, and apprehension.
3. **Depression:** A mental health condition characterized by persistent sadness, loss of interest, and reduced motivation.
4. **Stress:** A state of emotional or mental strain that arises in response to challenging or demanding circumstances.
5. **Male Adolescents:** Male participants within the adolescent age range of 18–21 years.
6. **Female Adolescents:** Female participants within the adolescent age range of 18–21 years.

RESEARCH TOOLS

Anxiety, Depression, and Stress Scale (2011)

The Anxiety, Depression, and Stress Scale (ADSS), developed by Pallavi Bhatnagar in 2011, is a standardized tool designed to assess emotional states in individuals. The scale consists of 48 items, which are divided into three subscales measuring anxiety, depression, and stress. Each item is scored dichotomously, with "Yes" coded as 1 and "No" as 0. The possible score ranges are 0–19 for anxiety, 0–15 for depression, and 0–14 for stress, with higher scores reflecting greater levels of emotional distress. The ADSS has demonstrated high reliability (0.81–0.89) and validity (0.81–0.89), making it a dependable measure for psychological assessment.

Procedure of Data Collection

Data were collected in a systematic and ethical manner. Prior permission was obtained from the concerned school and college authorities, and the objectives of the study were explained to the participants. Informed consent was obtained, ensuring that participation was voluntary and that responses would remain confidential. The ADSS (Bhatnagar, 2011) was administered to students individually in a quiet and comfortable environment free from distractions. Clear instructions were provided, and participants were encouraged to respond honestly. After completion, the questionnaires were collected, scored, and tabulated for further analysis.

Statistical Treatment

The collected data were first summarized using descriptive statistics, such as mean and standard deviation. To test for significant differences between male and female adolescents, independent sample t-tests were applied. All statistical analyses were performed using SPSS software to ensure accuracy and reliability of the results.

RESULTS AND DISCUSSION

Table No.01 Show the Mean, SD and F Value of Gender on Mental Health

Factor	Gender	Mean	SD	N	DF	't' Value	Sign.
Anxiety	Male Adolescents	10.30	4.68	50	98	-5.61	$p < 0.01$
	Female Adolescents	15.96	5.38	50			
Depression	Male Adolescents	92.70	6.40	50	98	-4.14	$p < 0.01$
	Female Adolescents	100.03	7.00	50			
Stress	Male Adolescents	92.70	6.40	50	98	-.2.88	$p < 0.01$
	Female Adolescents	100.03	7.00	50			

(Critical Value of f with df, 178 at 0.05 = 3.94 and at 0.01 = 6.96, NS= Not Significance)

The results presented in Table No. 01 show a clear gender difference in anxiety levels among adolescents. Male adolescents reported a mean anxiety score of 10.30 (SD = 4.68), while female adolescents reported a significantly higher mean score of 15.96 (SD = 5.38). The obtained t-value (-5.61) was statistically significant at the 0.01 level (t (1, 98) = -5.61, p < 0.01). This finding leads to the rejection of the null hypothesis, indicating that female adolescents experience considerably higher levels of anxiety than males.

These results are consistent with previous research. McLean, Asnaani, Litz, and Hofmann (2011) found that women are nearly twice as likely as men to be diagnosed with anxiety disorders. Similarly, Nolen-Hoeksema and Girgus (1994) argued that gender differences in anxiety become particularly evident during adolescence, a time of intense biological and social change. Several explanations have been offered for this disparity. Biologically, hormonal fluctuations during puberty increase vulnerability to stress and emotional disturbances (Kuehner, 2017). Social and cultural factors also play a role, as girls are often held to higher expectations in academics and behavior and are encouraged to be more emotionally expressive, which may contribute to higher self-reported anxiety (Chaplin & Aldao, 2013). In the Indian context, Sharma and Gulati (2019) reported that academic pressure, parental expectations, and social restrictions contribute significantly to higher anxiety levels among adolescent girls. Singh and Upadhyay (2017) similarly noted higher anxiety in females, particularly in urban settings where competition is intense. These findings underscore the need for targeted support, including stress management workshops, counseling services, mindfulness practices, and peer-support programs, to help adolescents—especially girls—cope with anxiety.

Depression levels also showed significant gender differences. Male adolescents reported a mean depression score of 13.62 (SD = 5.12), while females reported a much higher mean of 18.50 (SD = 6.57). The obtained t-value (-4.14) was statistically significant at the 0.01 level (t (1, 98) = -4.14, p < 0.01). This result clearly indicates that female adolescents are more prone to depression than males. These findings align with earlier studies. Nolen-Hoeksema and Girgus (1994) found that depression becomes more common in girls from early adolescence onwards, continuing into adulthood. Several factors contribute to this difference, including hormonal changes, cognitive vulnerabilities, and differences in coping styles. For example, adolescent girls are more likely to engage in ruminative coping, which intensifies negative emotions, while boys often rely on problem-focused coping (Jose & Brown, 2008). Hormonal fluctuations during puberty, coupled with academic and social pressures, further increase vulnerability among girls (Kuehner, 2017). Indian studies support these observations. Sharma and Gulati (2019) found higher levels of depression among girls due to family and academic expectations, while Singh and Upadhyay (2017) linked urban female adolescents' depression to peer pressure, social comparison, and lack of autonomy. These findings highlight the importance of gender-sensitive approaches in addressing adolescent depression. Schools and parents should remain vigilant for early signs of depression in girls and provide supportive environments. Preventive strategies such as counseling, life skills training, and resilience-building programs can help mitigate depressive symptoms.

Analysis of stress levels also revealed significant gender differences. Male adolescents reported a mean stress score of 15.24 (SD = 7.10), while females reported a higher mean score of 19.42 (SD = 7.39). The t-value (-2.88) was statistically significant at the

0.01 level ($t(1, 98) = -2.88$, $p < 0.01$), confirming that female adolescents experience significantly higher stress levels than males.

These findings are in line with previous literature. Studies have consistently shown that adolescent girls report more stress than boys, primarily due to academic pressures, social expectations, and interpersonal issues (Byrne et al., 2007; Matud, 2004). Girls are also more likely to internalize stress, which increases the risk of developing anxiety and depression (Compas et al., 2017). Biological factors, such as heightened stress reactivity during puberty, further explain these differences (Romeo, 2010). Socialization also plays a part, as girls are often expected to balance academics, family responsibilities, and social roles, which intensifies stress (Matud, 2004). Indian research supports these trends. Sharma and Gulati (2019) found that adolescent girls reported higher stress due to parental expectations, examinations, and gender-based restrictions. Singh and Upadhyay (2017) observed similar patterns, noting that peer acceptance, body image concerns, and future uncertainty also contributed to stress among girls.

Taken together, the findings of the present study highlight the urgent need for gender-sensitive mental health interventions. Schools and colleges should implement structured programs such as counseling services, stress management workshops, relaxation techniques, and mindfulness-based practices to support adolescents. Special attention should be given to female adolescents, who are at greater risk of experiencing heightened anxiety, depression, and stress.

CONCLUSION

Female adolescents show considerably higher levels of anxiety compared to male adolescents.
Female adolescents experience significantly higher levels of depression than their male adolescents.
Female adolescents report significantly higher levels of stress compared to male adolescents.

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